NEPTUNE CITY SCHOOL DISTRICT

Mathematics
Curriculum
Grade 3

NEPTUNE CITY SCHOOL DISTRICT
Office of the Chief School Administrator, Principal
210 West Sylvania Avenue
Neptune City, NJ 07753

The Neptune City School District is appreciative and proud to accept and align the curriculum of the Neptune Township School District to properly prepare the Neptune City students for successful integration into the Neptune Township High School Educational Program.

August 1, 2022

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SCHOOL DISTRICT MISSION STATEMENT

The Neptune City School District, in partnership with the parents and the community, will support and sustain an excellent system of learning, promote pride in diversity, and expect all students to achieve the New Jersey Student Learning Standards at all grade levels to become responsible and productive citizens.

NEPTUNE CITY SCHOOL DISTRICT

MATHEMATICS
CURRICULUM
GRADE 3

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Curriculum

NEPTUNE TOWNSHIP SCHOOL DISTRICT

Everyday Mathematics
Grade 3

Acknowledgements

The Grade 3 Mathematics curriculum was revised for use by the Neptune Township Elementary Schools by the Curriculum Steering Committee, inclusive of Dawn Reinhardt, Department Chairperson, Heba Abdo, Ed.D., Supervisor of STEM, and Sally A. Millaway, Ed.D., Director for Curriculum, Instruction and Assessment.

This curriculum represents the shift in instruction to the New Jersey Student Learning Standards for Mathematics and the increased rigor that those standards bring to the teaching and learning of mathematics. It is our hope that this curriculum will serve as a valuable resource for the staff members who teach this course and that they will continue to make recommendations for improvement to the document.

NEPTUNE TOWNSHIP SCHOOL DISTRICT

DISTRICT MISSION STATEMENT

The primary mission of the Neptune Township School District is to prepare students for a life-long learning process in a complex and diverse world. It is with high expectations that our schools foster:

• A strong foundation in academic and modern technologies.

• A positive and varied approach to teaching and learning.

• An emphasis on critical thinking skills and problem-solving techniques.

• A respect for and an appreciation of our world, its resources, and its people.

• A sense of responsibility, good citizenship, and accountability.

• An involvement by the parents and the community in the learning process.

Neptune Township School District

Educational Outcome Goals

The students in the Neptune Township schools will become life-long learners and will:

- Become fluent readers, writers, speakers, listeners, and viewers with comprehension and critical thinking skills.
- Acquire the mathematical skills, understandings, and attitudes that are needed to be successful in their careers and everyday life.
- Understand fundamental scientific principles, develop critical thinking skills, and demonstrate safe practices, skepticism, and open-mindedness when collecting, analyzing, and interpreting information.
- Become technologically literate.
- Demonstrate proficiency in all New Jersey Student Learning Standards (NJSLS).
- Develop the ability to understand their world and to have an appreciation for the heritage of America with a high degree of literacy in civics, history, economics and geography.
- Develop a respect for different cultures and demonstrate trustworthiness, responsibility, fairness, caring, and citizenship.
- Become culturally literate by being aware of the historical, societal, and multicultural aspects and implications of the arts.
- Demonstrate skills in decision-making, goal setting, and effective communication, with a focus on character development.
- Understand and practice the skills of family living, health, wellness and safety for their physical, mental, emotional, and social development.
- Develop consumer, family, and life skills necessary to be a functioning member of society.
- Develop the ability to be creative, inventive decision-makers with skills in communicating ideas, thoughts and feelings.
- Develop career awareness and essential technical and workplace readiness skills, which are significant to many aspects of life and work.

Everyday Math 4 - Grade 3 - Daily Pacing Guide

Day	Unit & Lesson	Topic / Activity	NJSLS-M	Day	Unit & Lesson	Topic / Activity	NJSLS-M
1	1.1	Assessment 1- Beginning of Year		16		FLEX DAY	
2	1.1	Number Grids	3.NBT.2	17	1.12	Exploring Mass, Equal Shares, and Equal Groups	3.G.2, 3.MD.2, 3.NF.1, 3.OA.1
3	1.2	Introducing the Student Reference Book	3.NBT.2	18	1.13	Measuring Mass	3.MD.2
4	1.3	Tools for Mathematics	3.G.1, 3.MD.1, 3.NBT.2	19	1.14	Unit 1 Assessment-Day 1	3.MD.2, 3.MD.3,
5	1.4	Number Lines and Rounding	3.NBT.1, 3.NBT.2	20	1.14	Unit 1 Assessment- Day 2	3.MD.3, 3.NBT.2,
6		**DISTRICT PRE-ASSESSMENT**		21		FLEX DAY	
7	1.5	Time	3.MD.1	22	2.1	Extended Facts: Addition and Subtraction	3.NBT.2
8	1.6	How Long is a Morning? Day 1	3.MD.1	23	2.2	Number Stories	3.NBT.2, 3.OA.8
9	1.6	How Long is a Morning? Day 2	3.MD.1	24	2.3	More Number Stories	3.NBT.2, 3.OA.8
10	1.7	Scaled Bar Graphs	3.MD.3	25		FLEX DAY	
11		FLEX DAY		26	2.4	Multistep Number Stories- Part 1	3.NBT.2, 3.OA.7, 3.OA.8
12	1.8	Multiplication Strategies	3.OA.1, 3.OA.3, 3.OA.7	27	2.5	Multistep Number Stories- Part 2	3.OA.3, 3.OA.7, 3.OA.8
13	1.9	Introduction to Division	3.OA.2, 3.OA.3, 3.OA.6	28	2.6	Equal Groups	3.OA.1, 3.OA.3, 3.OA.7, 3.OA.9
14	1.10	Foundational Multiplication Facts	3.OA.1, 3.OA.6, 3.OA.7	29	2.7	Multiplication Arrays	3.OA.3, 3.OA.4, 3.OA.7
15	1.11	The Length of Day Project	3.MD.1	30	2.8	Picturing Division (Day 1)	3.OA.2, 3.OA.3, 3.OA.4

Day	Unit & Lesson	Topic / Activity	NJSLS-M	Day	Unit & Lesson	Topic / Activity	NJSLS-M
31	2.8	Picturing Division (Day 2)	3.OA.2, 3.OA.3, 3.OA.4	46	3.6	Expand-and Trade Subtraction	3.NBT.1, 3.NBT.2
32	2.9	Modeling Division	3.NF.1, 3.OA.2, 3.OA.3	47		FLEX DAY	
33	2.10	Playing Division	3.OA.2, 3.OA.3, 3.OA.7	48	3.7	Exploring Car Graphs, Area, and Partitioning Rectangles	3.MD.5a, 3.MD.5b,
34		FLEX DAY		49	3.8	Scaled Picture Graphs	3.MD.3, 3.NBT.2
35	2.11	Frames and Arroes	3.NBT.2, 3.OA.7	50	3.9	Exploring Multiplication Squares	3.OA.1, 3.OA.7
36	2.12	Exploring Graction Circles, Liquid Volume, and Area	3.MD.5a, 3.MD.5b,	51		FLEX DAY	
37	2.13	Unit 2 Progress Check (Day 1)	3.OA.1, 3.OA.2, 3.OA.3, 3.OA.7	52	3.10	The Communative Property of Multiplication	3.OA.5, 3.OA.7, 3.OA.9
38	2.13	Unit 2 Progress Check (Day 2)	3.MD.3, 3.NBT.1,	53	3.11	Adding a Group	3.OA.1, 3.OA.3, 3.OA.5, 3.OA.7
39		FLEX DAY		54	3.12	Subtracting a Group	3.OA.1, 3.OA.3, 3.OA.5, 3.OA.7
40	3.1	"What's My Rule?"	3.NBT.2, 3.OA.4, 3.OA.7	55	3.13	Equivalent Names	3.NBT.2, 3.OA.7
41	3.2	Estimating Costs (Day 1)	3.NBT.1, 3.NBT.2, 3.OA.8	56	3.14	Unit 3 Progress Check (Day 1)	3.NBT.1, 3.NBT.2,
42	3.2	Estimating Costs (Day 2)	3.NBT.1, 3.NBT.2, 3.OA.8	57	3.14	Unit 3 Progress Check (Day 2)	3.MD.4, 3.MD.5a,
43	3.3	Partial- Sums Addition	3.NBT.1, 3.NBT.2, 3.OA.8	58	4.1	Measuring with a Ruler	3.MD.4
44	3.4	Column Addition	3.NBT.2, 3.OA.8	59		FLEX DAY	
45	3.5	Counting-Up Subtraction	3.NBT.2, 3.OA.8	60	4.2	Appkication: Line Plots	3.MD.4

Day	Unit & Lesson	Topic / Activity	NJSLS-M
61	4.3	Exploring Measures of Distance and Comparisons of Mass	3.MD.4, 3.MD.8, 3.NF2a,
62	4.4	Polygon Review	3.G.1
63	4.5	Special Quadrilaterals	3.G.1
64		FLEX DAY	
65	4.6	Perimeter	3.MD.4, 3.MD.8
66	4.7	Area and Perimeter	3.MD.5a, 3.MD.5b,
67	4.8	Area and Composite Units	3.MD.5b, 3.MD.6,
68	4.9	Number Sentences for Area of Rectangles	3.MD.5b, 3.MD.6,
69		FLEX DAY	
70	4.10	Playing *The Area and Perimeter Game*	3.MD.5b, 3.MD.6,
71	4.11	Building a Rabbit Pen (Day 1)	3.MD.7b, 3.MD.7c,
72	4.11	Building a Rabbit Pen (Day 2)	3.MD.7b, 3.MD.7c,
73	4.12	Rectilinear Figures	3.MD.5b, 3.MD.7a,
74	4.13	Unit 4 Progress Check (Day 1)	
75	4.13	Unit 4 Progress Check (Day 2)	
76	5.1	Exploring Equal Parts, Fractions of Different Wholes, and Area	3.G.2, 3.MD.6, 3.MD.8, 3.NF.1
77		FLEX DAY	
78	5.2	Representing Fractions	3.NF.3b, 3.NF.3c, 3.NF.3d
79	5.3	Equivalent Fractions	3.NF.3b, 3.NF.3c, 3.NF.3d
80	5.4	Recognizing Helper Fractions	3.OA.5, 3.OA.7, 3.OA.9
81	5.5	Multiplication Facts Strategies: Doubling- Part 1	3.MD.7b, 3.MD.7c,
82		**Mid-Year District Assessment**	
83	5.6	Multiplication Facts Strategies: Doubling- Part 2	3.MD.7b, 3.MD.7c,
84	5.7	Patterns in Products	3.NBT.2, 3.OA.7, 3.OA.9
85	5.8	Finding Missing Factors	3.OA.4, 3.OA.6, 3.OA.7
86		FLEX DAY	
87	5.9	Multiplication Facts Strategies: Near Squares	3.OA.5, 3.OA.7, 3.OA.9
88	5.10	Button Dolls: Solving a Number Story (Day 1)	3.OA.2, 3.OA.3, 3.OA.8
89	5.10	Button Dolls: Solving a Number Story (Day 2)	3.OA.3, 3.OA.8
90	5.11	Multiplication Facts Strategies: Break Apart Strategy	3.MD.7c, 3.MD.7d,

Day	Unit & Lesson	Topic / Activity	NJSLS-M
91		FLEX DAY	
92	5.12	Unit 5 Progress Check (Day 1)	3.OA.4, 3.OA.5, 3.OA.6, 3.OA.7,
93	5.12	Unit 5 Progress Check (Day 2)	3.OA.2, 3.OA.3, 3.OA.6, 3.OA.7,
94	6.1	Trade-First Subtraction	3.NBT.2, 3.OA.8
95	6.2	Playing *Baseball Multiplication*	3.OA.7
96		FLEX DAY	
97	6.3	Taking Inventory of Known Fact Strategies	3.OA.5, 3.OA.7
98	6.4	Fact Power and *Beat the Calculator*	3.OA.1, 3.OA.4, 3.OA.7
99	6.5	Exploring Geometry Problems, Measurement Data, and Polygons	3.G.1, 3.MD.4, 3.MD.8
100	6.6	Multiplication and Division Diagrams	3.OA.4, 3.OA.6, 3.OA.7
101		FLEX DAY	
102	6.7	Multiplication with Larger Factors	3.OA.4, 3.OA.5, 3.OA.7
103	6.8	Number Sentences with Parentheses	3.NBT.2, 3.OA.7, 3.OA.8
104	6.9	Writing Number Stories (Day 1)	3.OA.8
105		FLEX DAY	
106	6.9	Writing Number Stories (Day 2)	3.OA.8
107	6.10	Order of Operations	3.NBT.2, 3.OA.7, 3.OA.8
108	6.11	Number Models for Two- Step Number Stories	3.NBT.2, 3.OA.7, 3.OA.8
109	6.12	Unit 6 Progress Check (Day 1)	3.OA.5, 3.OA.7, 3.OA.8, 3.NBT.2
110	6.12	Unit 6 Progress Check (Day 2)	3.OA.5, 3.OA.7, 3.OA.8,
111		FLEX DAY	
112	7.1	Liquid Volume	
113	7.2	Exploring Arrays, Volume, and Equal Shares	3.NF.3a, 3.OA.1, 3.OA.3
114	7.3	Number Stories with Measures	3.NBT.3, 3.OA.2, 3.OA.3
115		FLEX DAY	
116	7.4	Fraction Strips	3.NF.3a, 3.NF.3b,
117	7.5	Fractions on a Number Line (Part 1)	3.NF.3a, 3.NF.3b,
118	7.6	Fractions on a Number Line (Part 2)	3.NF.1, 3.NF.2a, 3.NF.3c, 3.NF.3d
119	7.7	Comparing Fractions	3.NF.3a, 3.NF.3b,
120		FLEX DAY	

Day	Unit & Lesson	Topic / Activity	NJSLS-M	Day	Unit & Lesson	Topic / Activity	NJSLS-M
121	7.8	Finding Rules for Comparing Fractions (Day 1)	3.NF.3d	136	8.2	Extended Facts: Multiplication and Division	3.NBT.3, 3.OA.3, 3.OA.6,
122	7.8	Finding Rules for Comparing Fractions (Day 2)	3.NF.3d	137	8.3	Factors of Counting Numbers	3.OA.2, 3.OA.3, 3.OA.4, 3.OA.6,
123	7.9	Locating Fractions on Number Lines	3.NF.2a, 3.NF.3a, 3.NF.3c	138	8.4	Setting Up Chairs (Day 1)	3.OA.2, 3.OA.3
124	7.10	Justifying Fraction Comparisons	3.G.2, 3.NF.2a, 3.NF.3a, 3.NF.3d	139		FLEX DAY	
125		FLEX DAY		140	8.4	Setting Up Chairs (Day 2)	3.OA.2, 3.OA.3
126	7.11	Fractions in Number Stories	3.G.2, 3.NF.1, 3.NF.3c, 3.NF.3d	141	8.5	Playing *Factor Bingo*	3.OA.4, 3.OA.6, 3.OA.7
127	7.12	Fractions of Collections	3.NF.1, 3.OA.2	142	8.6	Sharing Money	3.OA.2, 3.OA.3, 3.OA.7
128	7.13	Unit 7 Progress Check (Day 1)	3.OA.6, 3.OA.7, 3.NBT.3,	143	8.7	Exploring Number Lines, Fractions, and Area	3.NF.2a, 3.NF.2b,
129	7.13	Unit 7 Progress Check (Day 2)	3.NF.3d	144		FLEX DAY	
130		**NJSLSA-M TESTING**		145	8.8	Solid Shapes	3.G.1
131		**NJSLSA-M TESTING**		146	8.9	Unit 8 Progress Check (Day 1)	3.OA.6, 3.OA.7, 3.NBT.3,
132		**NJSLSA-M TESTING**		147	8.9	Unit 8 Progress Check (Day 2)	3.OA.5, 3.OA.6, 3.OA.7, 3.OA.8,
133		**NJSLSA-M TESTING**		148		FLEX DAY	
134		**NJSLSA-M TESTING**		149	9.1	Playing *Product Pile-Up*	3.OA.1, 3.OA.4, 3.OA.7
135	8.1	Measuring to the Nearest 1/4 Inch	3.MD.4, 3.NF.1, 3.NF.3c	150	9.2	Multiply and Divide with Multiples of 10	3.OA.3, 3.OA.4, 3.OA.6

Day	Unit & Lesson	Topic / Activity	NJSLS-M	Day	Unit & Lesson	Topic / Activity	NJSLS-M
151	9.3	Using Mental Math to Multiply	3.MD.2, 3.NBT.3, 3.OA.5	166		EDM Skills Review- Unit 5	
152	9.4	Exploring Elapsed Time, Squares, and Bridges	3.G.1, 3.G.2, 3.MD.1, 3.MD.2	167		EDM Skills Review- Units 6	
153	9.5	Multidigit Multiplication	3.MD.7c, 3.MD.7d,	168		EDM Skills Review- Unit 7	
154		FLEX DAY		169		EDM Skills Review- Units 8-9	
155	9.6	Packing Apples (Day 1)	3.OA.2, 3.OA.7	170		EDM Skills Review- Unit 7 (Fractions)	
156	9.6	Packing Apples (Day 2)	3.OA.2	171		EDM Skills Review- Unit 2 (Multiplication & Division Methods)	
157	9.7	The Length-of-Day Project, Revisited	3.MD.1, 3.MD.3	172		FLEX DAY- EDM Games and Centers	
158		FLEX DAY		173		**EOY District Assessment**	
159		FLEX DAY		174		MATH POST ASSESSMENT: Review of skills- Planning a Field Trip Project (Unit 9)	
160	9.8	Unit 9 Progress Check (Day 1)	3.OA.9, 3.NBT.3,	175		MATH POST ASSESSMENT: Review of skills- Planning a Field Trip Project (Unit 9)	
161	9.8	Unit 9 Progress Check (Day 2)	3.OA.9	176		MATH POST ASSESSMENT: Review of skills- Estimating and Measuring Liquid Volumes Project (Unit 7)	
162		FLEX DAY		177		MATH POST ASSESSMENT: Review of skills- Estimating and Measuring Liquid Volumes Project (Unit 7)	
163		FLEX DAY- EDM Games and Centers		178		About Area and Perimeter- Classroom Area and Perimeter Project (Unit 4)	
164		EDM Skills Review- Units 1-2		179		About Area and Perimeter- Classroom Area and Perimeter Project (Unit 4)	
165		EDM Skills Review- Units 3-4		180		**Last Day of School**	

Unit 1 Plan	Math Tools, Time, Multiplication
Suggested Time Frame	21 days including "Flex Days"

Stage 1: Desired Results

Overview / Rationale

In this unit, an active and collaborative learning environment is established. Children recall how to use a variety of math tools to solve problems, tell time to the nearest minute, and use mathematical models to calculate elapsed time. This unit also lays the foundation for developing multiplication and division strategies. Children's learning will focus on three clusters of the NJ Student Learning Standards for Math (NJSLS-M), Operations and Algebraic Thinking, Number and Operations in Base Ten, and Measurement and Data.

They will also work deeply with the Mathematical Practices of making sense of problems and persevering in solving them, reasoning abstractly and quantitatively, modeling with mathematics, using appropriate tools strategically, and looking for and expressing regularity in repeated reasoning.

New Jersey Student Learning Standards for Mathematics

3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.

3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.NBT.1 Use place value understanding to round whole numbers to the nearest 10.

3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____**8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	**Enduring Understandings**
1. What are different ways to count? 2. Where are patterns in nature, architecture, music, words, and numbers? 3. What strategies can be used to continue a sequence? 4. How can information be gathered, recorded, and organized? How does the type of data influence the choice of display? **5.** How do I tell and write time to the nearest minute? What are different models of and models for addition and subtraction?	*Students will understand that…* 1. Counting finds out the answer to "how many" in objects/sets. 2. Patterns can be found in many forms. 3. Patterns can grow and repeat. 4. Graphs convey data in a concise way. **5.** Computation involves taking apart and combining numbers using a variety of approaches.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• Which tools to use and how to use them to find differences, tell time, round to 10 and 100, and measure length • That clocks are composed of 5 minute increments • That hours are equivalent to 60 minutes • How multiplication relates to addition • That division entails placing objects into equal groups	• Find differences using a number grid • Use tools to tell time and measure length • Use number lines to round to the nearest 10 and 100 • Tell time accurately to the nearest 5 minutes • Accurately calculate elapsed time • Represent data on a tally chart and set up a scaled bar graph • Solve equal-groups number stories and record number models • Use drawings to represent and solve division number stories • Use skip counting or repeated addition to solve multiplication problems • Determine the length of day using strategies to find elapsed time • Estimate and measure mass

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – 21st Century Themes			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed**	
			Career Ready Practices	
9.1	**Personal Financial Literacy**		E	CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		TA	CRP2. Apply appropriate academic and technical skills.
X	Money Management		T	CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management		ETA	CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		ETA	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration		E	CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:
NJ Learning Standards for English Language Arts:
NJSLS 3.SL.1- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c.- Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessments • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips/Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessments** • End of the Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 1.1 (3.NBT.2):** Find differences using a number grid
- **Lesson 1.3 (3.NBT.2, 3.MD.1, 3.MD.4, 3.G.1):** Use tools to tell time and measure length
- **Lesson 1.4 (3.NBT.1):** Use number lines to round to the nearest 10 and 100
- **Lesson 1.5 (3.MD.1):** Tell time accurately to the nearest 5 minutes
- **Lesson 1.6 (3.MD.1):** Accurately calculate elapsed time
- **Lesson 1.7 (3.MD.3):** Represent data on a tally chart and set up a scaled bar graph
- **Lesson 1.8 (3.OA.1, 3.OA.3):** Solve equal-groups number stories, and record number models
- **Lesson 1.9 (3.OA.2, 3.OA.3):** Solve equal-shares and equal-groups number stories
- **Lesson 1.9 (3.OA.2, 3.OA.3, 3.OA.6):** Use drawings to represent and solve division number stories
- **Lesson 1.10 (3.OA.6, 3.OA.7):** Use skip counting or repeated addition to solve multiplication problems while exploring fact families and Fact Triangles.
- **Lesson 1.11 (3.MD.1, 3.MD.3):** Determine the length of day using strategies to find elapsed time. Length of Day Project: Discuss collecting data throughout the school year.
- **Lesson 1.12 (3.MD.2):** Estimate and measure mass by finding objects that are about one gram and one kilogram.

<table>
<tr><td colspan="3">Lesson: 1.1 Number Grids</td><td>TE pages: 14-19</td></tr>
<tr><td colspan="4">Objective: SWL to use a number grid for computation.</td></tr>
<tr><td>Math Masters: pages 2-8, TA2-TA3</td><td>Activity Cards: 1</td><td>Manipulatives: counters, number cards 0-9 (4 of each) centimeter cubes</td><td>Other Materials: slate, Number-Grid poster, stick on notes and Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: number grid , difference</td></tr>
<tr><td colspan="4">NJSLS: 3.OA.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
NJSLS: 3.NBT.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Answer questions about the values of digits</td><td colspan="2">● Math Message:
Add 2 digit numbers
● Sharing Strategies
Share strategies for adding 2 digit numbers
● Reviewing Number Grid Patterns
Identify patterns on the number grid
● Finding a Difference
Use a number grid to help find differences</td><td>● Math Minute
Find 10 more and 10 less on number grid
● Math Boxes: 1-1
● Home Link: 1-1
Find differences between numbers</td></tr>
<tr><td colspan="2">ELL Support:
● Show pictures to familiarize students with some of the vocabulary for number grids.
● Use Listen-pulling on ones ear; Think –Closing your eyes and pointing with one finger to your temple; Write-Holding a writing tool in the air and air writing, Show –Holding up a slate.
● Model the actions.</td><td>Readiness:
Applying Number Grid Patterns</td><td>Enrichment-
● Finding difference between 3 digit numbers
● MM page 8 and TA3</td><td>Extra Practice-
● Finding the differences on a number Grid
● Activity Card 1 MM-TA3, number cards 0-9
● 2 centimeter cubes</td></tr>
<tr><td colspan="4">Assessment: Observe students as the children work on journal page 3.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.2 Introducing the Student Reference Book (SRB)</td><td>TE pages: 20-25</td></tr>
<tr><td colspan="4">Objective: SWL to explore the Student Reference Book and play Number Grid Difference</td></tr>
<tr><td>Math Masters:
pages 9-10, TA3, G2</td><td>Activity Cards:
2-3</td><td>Manipulatives:
counters, number cards 0-9 (4 of each) centimeter cubes</td><td>Other Materials:
slate, Number-Grid poster, stick on notes and Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: number grid , difference</td></tr>
<tr><td colspan="4">NJSLS: 3.OA. 3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
NJSLS: 3.NBT.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Children will solve number stories- slate</td><td colspan="2">● Math Message:
Think how the SRB will be helpful
● Exploring the SRB
Explore the SRB
● Looking Up Information in the Student Reference Book
Identify patterns on the number grid
● Finding a Difference
Locate information and game directions in their Student Reference Book, MM 9-10</td><td>● Math Minute
Use various operations to find a secret number
● Playing Number Grid Difference
Practice mental subtraction strategies SRB- page 251
● Math Boxes-1-2
MM 9-10 MJ page 4
● Home Link: 1-2
Play Number Grid Difference</td></tr>
<tr><td colspan="2">ELL Support:
● Show pictures to familiarize students with some of the vocabulary for number grids.
● Use Listen-pulling on ones ear; Think –Closing your eyes and pointing with one finger to your temple; Write-Holding a writing tool in the air and air writing, Show –Holding up a slate.
● Model the actions</td><td>Readiness:
● Find Differences Between the Numbers
● number grid poster</td><td>Enrichment-
● Finding differences in Multiple Ways
● Activity Card 2
● SRB page 251</td><td>Extra Practice-
● Finding the mystery number
● Activity Card 3
● MM page TA3</td></tr>
<tr><td colspan="4">Assessment: Observe students play Number Grid Difference. Observe how students are manipulating the number grid and success rate of correct answer.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.3 Tools for Mathematics</td><td>TE pages: 26-31</td></tr>
<tr><td colspan="4">Objective: SWL to use a number grid for computation.</td></tr>
<tr><td>Math Masters:
page 11, G2-TA3</td><td>Activity Card :
4</td><td>Manipulatives:
● toolkit items,
● clock,
● number cars 0-9 (4 of each),
● 2 counters</td><td>Other Materials:
● demonstration clock,
● scissors,
● paper,
● calculator,
● Minute Math</td></tr>
<tr><td colspan="4">Vocabulary:
NJSLS: 3.MD.1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. 4A range of algorithms may be used. 5Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.
NJSLS: 3.MD.2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).6 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.7 Represent and interpret data.
NJSLS: 3.MD. 3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.
NJSLS: 3.NBT.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve basic facts and share their strategies</td><td colspan="2">● Math Message:
Explore tools in their math toolkits
● Sharing Strategies for Math Tools
Share when and how their toolkit tolls are used
● Reviewing Telling Time
Review telling time
● Reviewing Length of Measurement
Use tools to measure, calculate, and trace shapes.
MJ page 5</td><td>● Math Minute
Identify tools for measuring time and length
● Game- Playing Number Grid Difference
Find differences between 2 numbers.
● Math Boxes-
MJ page 5
● Home Link: 1-3
Telling time using an analog clock</td></tr>
<tr><td>ELL Support:
Use of numerical expressions that closely relate to reading numbers</td><td>Readiness:
Making 10 on a calculator.</td><td>Enrichment-
Completing Calculator puzzles with Negative numbers</td><td>Extra Practice-
● Playing Hit the Target
● Activity Card 4
● MM pg. G3
● calculator</td></tr>
<tr><td colspan="4">Assessment: Observe that students are choosing the appropriate tools for completing each problem correctly MJ page 5</td></tr>
<tr><td colspan="3">Lesson: 1.4 Number Lines and Rounding</td><td>TE pages: 32-39</td></tr>
<tr><td colspan="4">Objective: SWL to use open number lines to round numbers</td></tr>
<tr><td>Math Masters:</td><td>Activity Cards :
5-6</td><td>Manipulatives:</td><td>Other Materials:</td></tr>
</table>

<table>
<tr><td>pages
12-13, TA3</td><td></td><td>toolkit items, clock, number cars 0-9 (4 of each), 2 counters</td><td>slate demonstration clock, half sheet of paper, number grid, calculator, Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: estimate , close but easier numbers, round, open number line</td></tr>
<tr><td colspan="4">NJSLS: 3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
NJSLS: 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Identify the places in numbers and the values of digits in those places</td><td colspan="2">● Math Message:
Solve Addition Problems
● Reviewing Estimates
Make estimates
● Using Number lines to round
Round numbers to the nearest 10 or 100</td><td>● Math Minute
Round numbers to the nearest 10 or 100
● Game- Solve Calculator puzzles
Solve place value puzzles
● Math Boxes:
MJ page 6
● Home Link: 1-4
Round numbers to the nearest 10 or nearest 100</td></tr>
<tr><td>ELL Support:
Point out similarities between round shapes and the “0”</td><td>Readiness:
● Identifying Close but Easier Numbers,
● MM page TA3</td><td>Enrichment-
● Estimating Sums and Differences
● Activity Card 5</td><td>Extra Practice-
● Rounding to the nearest 10
● Activity Card 6</td></tr>
<tr><td colspan="4">Assessment: Observe that students are estimating sums and differences, and then add or subtract</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.5 Time</td><td>TE pages: 40-47</td></tr>
<tr><td colspan="4">Objective: SWL to tell time to the nearest minute and calculate elapsed time</td></tr>
<tr><td>Math Masters:
pages 14-16, TA4-TA5</td><td>Activity Cards :
7-8</td><td>Manipulatives:
toolkit items, clock, number cards 1-20</td><td>Other Materials:
slate demonstration clock, half sheet of paper, number grid, calculator, Minute Math, crayons,</td></tr>
<tr><td colspan="4">Vocabulary: elapsed time, precise</td></tr>
<tr><td colspan="4">NJSLS: 3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice skip counting</td><td colspan="2">● Math Message:
Match times with analog clocks
MJ page 7
● Reviewing Telling Time
Review reading clocks to the nearest 5 minutes MJ page 7
● Telling time to the nearest minute
Tell and record time to the nearest minute MJ page 8</td><td>● Math Minute
Identify activities of varied lengths of time
● Introducing the Math Boxes Routine
Introduction of math boxes routine.
● Math Boxes-
MJ page 6
● Home Link: 1-5
Round numbers to the nearest 10 or nearest 100</td></tr>
<tr><td>ELL Support:
Role-play to introduce the term nearest, connecting to near and nearer and contrasting with far.</td><td>Readiness:
● Marking 5 minute Intervals
● MM pg. 14
● MM pg. TA3</td><td>Enrichment-
● Making a clock booklet
● Activity Card 7
● MM page 15</td><td>Extra Practice-
● Telling and Writing Time to the Minute
● Activity Card 8</td></tr>
<tr><td colspan="4">Assessment: Observe that students are telling time to the nearest 5 and 1 minute on the clock MJ page 8</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.6 How Long is a Morning? 2 DAYS</td><td>TE pages: 48-57</td></tr>
<tr><td colspan="4">Objective: SWL to…
● DAY 1: Use mathematical models to measure elapsed time.
● DAY 2: Share models and discuss strategies for calculating elapsed time, and then revise their work.</td></tr>
<tr><td>Math Masters:
Pages 17-18, TA6</td><td>Activity Cards:
7-8</td><td>Manipulatives:
● toolkit items
● clock,</td><td>Other Materials:
● demonstration clock
● class data pad
● chart paper
● number grid
● colored pencils
● Standards for Mathematical Practice poster
● Minute Math,
● crayons</td></tr>
<tr><td colspan="4">Vocabulary: elapsed time, precise</td></tr>
<tr><td colspan="4">NJSLS: 3.MD.1 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice skip counting</td><td colspan="2">● Math Message:
Make sense of the solution to an elapsed time problem that uses an open number line.
MJ page 10
● Finding Elapsed Time Using a Number Line
Share their strategies for finding elapsed time using an open number line and toolkit clocks
● Solving the Open Response Problem
Use a mathematical model to calculate elapsed time for the length of a school morning MM page 18
DAY 2 – Review children’s work and plan discussion for reengagement
MM page TA6 & Day 1 work</td><td>● Math Minute
Identify activities of varied lengths of time
● Introducing the Math Boxes Routine
Introduction of math boxes routine.
● Math Boxes-
MJ page 11
● Home Link: 1-6
MM page 18</td></tr>
<tr><td>ELL Support:</td><td>Readiness:
● Marking 5 minute Intervals
● MM page 14
● MM page TA3</td><td>Enrichment:</td><td>Extra Practice:
● Telling and Writing Time to the Minute
● Activity Card 8</td></tr>
<tr><td colspan="4">Assessment: Collect and review revised work. Utilize rubric, page 54, to evaluate children’s revised work.</td></tr>
</table>

Lesson: 1.7 Scaled Bar Graphs			TE pages: 64
Objective: SWL to represent and interpret data on scaled bar graphs.			
Math Masters: page 19-21, TA7, G4-G5	**Activity Cards:** 9	**Manipulatives:** number cards 1-9	**Other Materials:** ● class data pad ● chart paper ● colored pencils & crayons ● paper clip ● Minute Math
Vocabulary: bar graph, data			
NJSLS: 3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Record data and read a tally charts and bar graphs in their Student Reference Book	● **Math Message:** Record data and read a tally charts and bar graphs in their Student Reference Book MJ page 4 SRB pages 191-192 Class Data Pad ● **Reviewing Tally Charts/ Bar Graphs** Discuss tally charts and bar graphs SRB pages 191-192 Class Data Pad ● **Organizing and Representing Data** Organized and represent data in bar graphs MJ pages 12-13 MM page TA7 CDP		● **Math Minute** Practice addition with combinations of 10s ● **Playing Spin and Round Game** Practice rounding 3 digit numbers to the nearest 10 or 100 ● **Math Boxes-** MJ page 14 practice and maintain skills ● **Home Link: 1-7** MM page 21 Represent data on a scaled bar graph
ELL Support: Refer to family and given names to make directions clear	**Readiness:** ● Interpreting a Tally Chart ● MM pg. 19	**Enrichment-** ● Conduct a Survey ● Activity Card 9 ● MM page TA7	**Extra Practice-** ● Graphing Data ● MM page 20
Assessment: Review revised work. Utilize rubric on page 54 to evaluate children's revised work.			

<table>
<tr><td colspan="3">Lesson: 1.8 Multiplication Strategies</td><td>TE pages 64-71</td></tr>
<tr><td colspan="4">Objective: SWL to use drawings and number models to represent and solve multiplication number stories</td></tr>
<tr><td>Math Masters:
Page 22, TA8</td><td>Activity Cards:
10-12</td><td>Manipulatives:
● number cards 2-4 (4 of each) ,
● 72 counters,
● 6 sided die</td><td>Other Materials:
● slate,
● 4 quarter sheets of paper,
● full sheets of paper,
● SRB</td></tr>
<tr><td colspan="4">Vocabulary: equal groups, multiplication, multiplication symbol, array, row, column</td></tr>
<tr><td colspan="4">NJSLS: 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
NJSLS: 3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
NJSLS: 3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve addition and subtraction facts and share the strategies they used.</td><td colspan="2">● Math Message:
Solve a multiplication number story. MJ page 15
● Sharing Strategies for Equal Groups and Arrays
Make sense of representations for equal groups and array number stories. MJ page 15
● Starting a Fact Strategy Wall
Record multiplication strategies on the Fact Strategy Wall
● Writing Multiplication Number Stories
Write number stories to match number sentences.</td><td>● Math Minute
Practice solving equal groups problems
● Math Boxes-
MJ page 16-19
● Home Link: 1-8
MM page 22
Solve multiplication number stories</td></tr>
<tr><td>ELL Support:
Prepare a vocabulary card illustrating equal groups</td><td>Readiness:
● Designing Flags
● Activity Card 10
● 6-sided die
● Number cards 2-4 (4 of each)
● 24 counters
● 4 quarter-sheets of paper
● 1 full-sheet of paper</td><td>Enrichment-
● Writing Equal Groups or Array Number Stories
● Activity Card 11
MM pages TA8, 6 sided die</td><td>Extra Practice-
● Representing Equal Groups or Arrays
● Activity Card 12
slate, 6-sided die, 72 counters</td></tr>
<tr><td colspan="4">Assessment: Identify if students can solve equal group number stories for problems 1 & 2 in MJ page 15.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.9 Introducing Division</td><td>TE pages 72-77</td></tr>
<tr><td colspan="4">Objective: SWL to use drawings and number models to represent and solve division number stories</td></tr>
<tr><td>Math Masters:
pages 23-26</td><td>Activity Cards:</td><td>Manipulatives:
counters or pennies</td><td>Other Materials:
● plastic bag
● scissors
● envelops
● paper clip
● Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: equal grouping, equal sharing, division, division symbol, array, row, column</td></tr>
<tr><td colspan="4">NJSLS: 3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers
NJSLS: 3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.
NJSLS: 3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice skip counting of 2s, 5s, and 10s</td><td colspan="2">● Math Message:
Solve a number story MJ page 18
● Exploring Division
Solve equal shares and equal groups number stories, MJ pgs. 18-19
● Introducing Division Number Models
Record division number models for number stories
MJ1 page 19</td><td>● Math Minute
page 58
Use multiplication/division to solve number stories
● Cutting out Fact Triangles
Preparation for Lesson 1-10
● Math Boxes-1.9
MJ page 20
● Home Link: 1-9
Solve division number stories
MM page 26</td></tr>
<tr><td>ELL Support:
Think aloud with real objects to introduce the term share and help children understand equal-sharing number stories</td><td>Readiness:
● Making Equal Groups of Cookies
● MM Page 23</td><td>Enrichment-
● Exploring remainders
● MM page 24</td><td>Extra Practice-
● Exploring Equal Shares
● MM page 25
● counters</td></tr>
<tr><td colspan="4">Assessment: Circulate and observe as children work on MJ page 19. Observe Problems 1 & 2 by creating drawings to represent each problem.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.10 Foundational Multiplications Facts</td><td>TE pages: 78-85</td></tr>
<tr><td colspan="4">Objective: SWL to develop strategies for 2s, 5s, and 10s.</td></tr>
<tr><td>Math Masters:
pages 27-33</td><td>Activity Cards :</td><td>Manipulatives:
● quick look cards 132, 134, 136, 145, 149
● counters
● number cards 1-10 (4 of each)
● die labeled 2,2,5,5,10,10</td><td>Other Materials:
● paper
● scissors
● nickel & dime
● Fact Strategy Wall
● 2,5,10 fact triangles,
● Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: quick looks, fact family, fact triangle, product, factors</td></tr>
<tr><td colspan="4">NJSLS: 3.OA.7Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers
NJSLS: 3OA.1. Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
NJSLS: 3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
NJSLS: 3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice skip counting of 2s, 5s, and 10s</td><td colspan="2">● Math Message:
Make sense of a dot pattern showing equal groups
Quick Look Card 136
● Introducing Quick Looks
Practice Quick Looks with patterns
See cards in preparation box
● Multiplying 2s, 5s, 10s
Develop strategies for multiplying 2, 5, 10 MY page 21
● Introducing the Fact Triangle
Explore fact families and Fact Triangles</td><td>● Math Minute- pg. 58
Use multiplication to solve number stories by 2
● Making Fact Family Houses
Generate multiplication /division fact families
● Math Boxes-1.10
MJ pages 221-22
● Home Link: 1-10
Solve fact families and Fact Triangles
MM pages 29-33</td></tr>
<tr><td colspan="2">ELL Support:
For Quick Looks, help students to understand the word quick with demonstrations that contrast moving an object slowly and quickly</td><td>Readiness:
● Skip Counting on the Number Grid
● MM page 27</td><td>Enrichment-
● Noticing a Paper-Folding Pattern
● MM page 28</td><td>Extra Practice-
● Game – Playing Multiplication Draw SRB pages 24-28
● MM page G6</td></tr>
<tr><td colspan="4">Assessment: MJ page 21 Observe problems 1 & 2 for creating equal groups.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.11 The Length of Day Project</td><td>TE pages: 86-91</td></tr>
<tr><td colspan="4">Objective: SWL to calculate elapsed time.</td></tr>
<tr><td>Math Masters:
page.34,
TA10-12</td><td>Activity Cards:
13-14</td><td>Manipulatives:
tool kit</td><td>Other Materials:
● demonstration clock,
● markers,
● paper, scissors,
● paper clip,
● plastic bag,
● Length of Day Graph,
● Fact Triangles.</td></tr>
<tr><td colspan="4">Vocabulary: elapsed time, length of day</td></tr>
<tr><td colspan="4">3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Record clock times to the nearest minute</td><td colspan="2">● Math Message:
Calculate the length of a gym class
● Review elapsed time
Share strategies for calculating elapsed time
● Finding Length of Day
Analyze strategies for finding the length of day and calculate the elapsed time between sunrise and sunset SRB 187-188 MM page TA10,
toolkit
● Introducing the Length of Day Project
Discuss collecting data throughout the school year
MJ page 23
MM TA10 LOD Graph</td><td>● Math Minute- page 122
Calculate elapsed time
● Practicing Fact Triangles
Practice multiplication /division fact families
● Math Boxes-1.11
MJ page 24 Preview skills for Unit 2
● Home Link: 1-11
Solve elapsed time problems
MM page 34</td></tr>
<tr><td>ELL Support:
Help children remember the meanings of sunrise and sunset by connecting rise and set with up and down</td><td>Readiness:
● Counting Time on a Clock
● Toolkit Clocks
● Demonstration Clock</td><td>Enrichment-
● Writing Elapsed Time number stories
● Activity Card 13</td><td>Extra Practice-
● Find Elapsed Time
● Activity Card 14
● MM pages TA 11-12</td></tr>
<tr><td colspan="4">Assessment: Observe whether and how children persevere to find the elapsed time.</td></tr>
</table>

Lesson: 1.12 Exploring Mass, Equal Shares, and Equal Groups			TE pages: 92-97
Objective: SWL to compare masses and divide wholes and sets into equal shares.			
Math Masters : pages 35-37, TA13, G6	**Activity Cards :** 15-17	**Manipulatives:** ● QLC 124,125, 130 ● counters, ● Number cards 1-10 (of each) ● two 6 sided dice labeled 2,2,5,5,10,10 ● pan balance ● standard masses	**Other Materials:** ● Calculator ● Paper ● Scissors ● paper clip ● plastic bag ● classroom objects, ● tape
Vocabulary: pan balance, mass, weight, zero, masses, equal shares,			
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers **3.MD.1** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Looks with equal groups and arrays. ● Quick Look Cards 124,125.130	● **Math Message:** Discuss how a pan balance works ● **Introducing the Pan Balance** Introduction to tools for comparing masses **Exploration A- Comparing Masses** Estimate and compare masses of objects. **Exploration B- Creating Equal Shares** Divide whole pancakes into equal shares **Exploration C- Creating Equal Groups** Creation of equal groups		● **Math Minute- page 97** Solve number stories involving 1/2 ● **Game –Multiplication Draw** Practice multiplication fact families for 2s, 5s, and 10s ● **Math Boxes-1.12** Maintain and practice skills, MJ page 27 ● **Home Link: 1-12** Find objects with similar masses, MM pages 37
ELL Support: Use the pictorial vocabulary card to reintroduce the term *equal groups*	**Readiness:** ● **Naming Fractional Parts** ● Slates	**Enrichment:** ● Solving Equal Groups Riddles ● MM page 35 ● counters	**Extra Practice:** ● Finding Totals for Equal Groups ● MM page 36 ● calculators
Assessment: Observe students in Exploration Activities			

<table>
<tr><td colspan="3">Lesson: 1.13 Measuring Mass</td><td>TE page 98</td></tr>
<tr><td colspan="4">Objective: SWL to estimate and measure masses of objects.</td></tr>
<tr><td>Math Masters:
Pages 38-40, G4-5</td><td>Activity Cards: 18</td><td>● Manipulatives:
● QLC 126,127, 128,
● Counters
● Number cards 1-9 (4 of each)
● pan balance
● standard masses</td><td>● Other Materials:
● 1-liter bottles of water
● large paper clips
● classroom objects of varying weights and sizes
● re-sealable plastic bag,
● 20 nickels
● sticky notes
● pencil
● poster paper
● Minute Math</td></tr>
<tr><td colspan="4">Vocabulary: mass, gram, kilogram</td></tr>
<tr><td colspan="4">3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).6 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Practice Quick Looks with equal groups and arrays.
● Quick Look Cards 126,127, 128</td><td colspan="2">● Math Message:
Add objects to the class Mass Museum
● Exploring Grams /Kilograms
Find objects that are about 1 gram and 1 kilogram
● Visiting the Mass Museum
Estimate and measure masses of objects in the Mass Museum
● Solving Mass Number Stories
Solve number stories involving grams and kilograms</td><td>● Math Minute- page 124
Solve number stories involving mass
● Game –Spin and Round
Practice rounding 3 digit numbers, SRB page 258
● Math Boxes - 1.13
Maintain and practice skills, MJ page 28
● Home Link: 1-13
Practice solving mass number stories, MM page 40</td></tr>
<tr><td>ELL Support:
Scaffold the comparative –er form of heavy and light to compare and order the weights of different objects, and to make the connection with the terms more and less</td><td>Readiness:
● Ordering Objects
● Objects of varying weights and sizes</td><td>Enrichment-
● Estimating Grams/Kilograms
● MM page 38
● Benchmark objects and pan balance</td><td>Extra Practice-
● Measuring Masses of Objects
● Activity Card 18
● MM page 39</td></tr>
<tr><td colspan="4">Assessment: Math Journal page 28, Observe as children estimate masses. Review weights if child struggles using strategy on page 101 of TE</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 1.14 Assessment for Unit 1 Grade 3 2-Day Test</td><td>TE pages: 98-111</td></tr>
<tr><td colspan="4">Objective: SWB assessed on Unit 1 skills
● Day 1- Administer the Unit Assessments
● Day 2- Administer the Open Response Assessment</td></tr>
<tr><td>Math Masters:</td><td>Activity Cards :</td><td>Manipulatives :</td><td>Other Materials:
Assessment Book pages 6-14</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).6 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Self-Assessment
● Assessment Book page 5</td><td colspan="2">● Day 1
Unit 1 Assessment – Skills Test
Assessment Handbook-pages 6-12
● Day 2
Unit 1 Open Response Test
Pages 13-14</td><td>● Game: Review Introduced games
● Math Boxes-1.14
Maintain and practice skills, MJ page 31
● Home Link: 1-14
Take home the Family Letter that introduces Unit 2,
Pages 41-44</td></tr>
<tr><td colspan="2">ELL Support:</td><td>Readiness :</td><td>Enrichment-
● Estimating Grams/Kilograms
● MM page 38
● Benchmark objects and pan balance</td><td>Extra Practice-
● Measuring Masses of Objects
● Activity Card 18
● MM page 39</td></tr>
<tr><td colspan="5">Assessment: Correct and Record information in online Class Keeper.
Open Response is scored using Rubric</td></tr>
</table>

Curriculum Resources	
Websites	www.connectED.mheducation.com www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm www.vlc.cemseprojects.org www.learnzillion.com
Books	*Teacher's Lesson Guide, Volume 1* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 1.1-1.13 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	*The I Hate Mathematics!* by Marilyn Burns *Telling Time* *Amanda Bean's Amazing Dream* *1001 Bugs to Spot* *17 Kings and 42 Elephants* *The 512 Ants on Sullivan Street*

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Unit 2 Plan	Number Stories and Arrays
Suggested Time Frame	18 days including "Flex Days"

Stage 1: Desired Results

Overview / Rationale

In this unit, children make sense of one-and-two step number stories involving four arithmetic operations. They represent situations with diagrams, arrays, pictures, words, and number models. Children's learning will focus on five clusters of the NJ Student Learning Standards for Math (NJSLS-M), Operations and Algebraic Thinking, Number and Operations in Base Ten, Number and Operations with Fractions, Measurement and Data, and Geometry.

They will also work deeply with the Mathematical Practices reasoning abstractly and quantitatively, modeling with mathematics, and looking for and expressing regularity in repeated reasoning.

New Jersey Student Learning Standards for Mathematics

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7.*

3.OA.5 Apply properties of operations as strategies to multiply and divide.[2] *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*

3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends*.

3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \_ \div 3$, $6 \times 6 = ?$*

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares

when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
3.NF.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem
3.MD.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.
3.MD.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).

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Essential Questions	**Enduring Understandings**
1. What are different models of and models for addition and subtraction? 2. What are different models of and models for multiplication and division? 3. What are efficient methods for finding products and quotients?	*Students will understand that…* 1. Computation involves taking apart and combining numbers using a variety of approaches. 2. Flexible methods of computation involve grouping numbers in strategic ways. 3. Proficiency with basic facts aids estimation and computation of larger and smaller numbers.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• How to interpret multiplication in terms of equal groups • How to interpret equal grouping and equal sharing situations • How to solve number stories in situations involving equal groups and arrays • How to make sense of and represent number stories involving addition and subtraction • Addition and subtraction within 1000 • That algebraic reasoning involves keeping balance on both sides of an equation	• Use basic facts to solve fact extensions • Solve number stories using question marks for the unknown • Solve multistep number stories • Solve number stories using representations • Solve equal-groups number stories • Solve number stories using number models and arrays • Create mathematical representations to solve problems • Solve division number stories • Create arrays to practice division with and without remainders • Use Frames-and-Arrows diagrams to solve problems

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**		E	CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		TA	CRP2. Apply appropriate academic and technical skills.
X	Money Management		T	CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management		ETA	CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		ETA	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration		E	CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:
NJ Learning Standards for English Language Arts:
NJSLS 3.SL.1- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c.- Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessments • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips/Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessments** • End of the Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 2.1** (3.NBT.2): Use basic addition and subtraction facts to solve problems with larger numbers
- **Lesson 2.2** (3.OA.8, 3.NBT.2): Use diagrams or pictures to solve number stories
- **Lesson 2.3** (3.OA.8, 3.NBT.2):Use situation diagrams to help solve number stories
- **Lesson 2.4** (3.OA.7, 3.OA.8, 3.NBT.2): Make sense of and solve two-step number stories
- **Lesson 2.5** (3.OA.3, 3.OA.7, 3.NBT.2): Solve number stories using two operations
- **Lesson 2.6** (3.OA.1, 3.OA.3, 3.OA.7): Solve problems involving multiples of equal groups and make sense of multiplying by 0 and 1
- **Lesson 2.7** (3.OA.1, 3.OA.3, 3.OA.4): Solve array problems by drawing arrays to represent a number story.
- **Lesson 2.8, Day 1** (3.OA.2, 3.OA.3, 3.OA.4): Day 1 Create mathematical representations for solving division problems (Picturing Division Open Response Project)
- **Lesson 2.8, Day 2** (3.OA.2, 3.OA.3, 3.OA.4): Day 2 Discuss representations and solutions and then revise their work (Picturing Division Open Response Project.)
- **Lesson 2.9** (3.OA.2, 3.OA.3, 3.OA.7): Solve division number stories and learn about remainders. Expect students to solve each number story using sketches or drawings.
- **Lesson 2.10** (3.OA.2, 3.OA.7): Learning to play Division Arrays by grouping counters equally to practice division. As a class, you will explore even and odd number patterns.
- **Lesson 2.11** (3.OA.7, 3.NBT.2): Review Frames- and- Arrows Diagrams and share strategies for solving such problems. Discuss rules to figure out the number in each frame and patterns that may follow.
- **Lesson 2.12** (3.NF.1, 3.MD.2, 3.MD.5a, 3.MD.5b, 3.MD.6): Explore fraction circles to encourage students to think flexible about the whole and size of equal parts. Using Activity card 32, review area vocabulary and measure the borders of a triangle in centimeters and inches. Discuss that liquid volume is the amount of liquid in a container and that a liter is a unit of volume; through this explanation allow students to fill beakers and containers to see that volume can be represented by filling such containers.

<table>
<tr><td colspan="3">Lesson: 2.1 Extended Facts: Addition and Subtraction</td><td>TE pages 124-129</td></tr>
<tr><td colspan="4">Objective: SWL to develop strategies for 2s, 5s, and 10s.</td></tr>
<tr><td>Math Masters:
pages 45&46
pp.TA14 (optional)</td><td colspan="2">Activity Cards :</td><td>Manipulatives:
base 10 blocks, toolkit clock</td></tr>
<tr><td colspan="4">Vocabulary: fact extensions, multiples, combinations of 10,</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.MD.1 Tell and write time to the nearest minute and measure time intervals</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Use combinations of 10 to solve other basic facts.</td><td colspan="2">● Math Message:
Use basic +/- facts to solve facts to solve multi-digit problems.
● Extending Facts to Multiples of 10
Look for patterns and solve fact extensions.
● Extending to Higher Decades
Solve higher-decade fact extensions.
● Extending Combinations of 10
Use combinations of 10 to solve fact extensions.</td><td>● Math Minute- page 58
Solve teacher selected problems form Minute Math+
● Finding Elapsed Time
Solve elapsed time number stories.
● Math Boxes-2.1
MJ page 34
*Math Boxes 2.1 are paired with Math Boxes 2.3
● Home Link: 2-1
Math Masters page 47</td></tr>
<tr><td>ELL Support:
To support student understanding of extension and extend, use a physical model to relate the terms to an everyday item such as an extension cord.</td><td>Readiness:
● Practicing Addition and Subtraction Facts with Games and Fact Triangles
● MJ1 Activity Sheets 4-5
● SRB pages 255 and 261</td><td>Enrichment:
● Extend work with fact expression.
● Solve slightly higher decade fact extensions mentally.</td><td>Extra Practice:</td></tr>
<tr><td colspan="4">Assessment: MJ page 32. Observe problems 1 & 2 for creating equal groups.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 2-2 Number Stories</td><td>TE pages: 130-135</td></tr>
<tr><td colspan="4">Objective: SWL to use diagrams or pictures to help solve number stories.</td></tr>
<tr><td>Math Masters:
pages: 48-49
TA8, TA15-TA16, G6</td><td>Activity Cards:</td><td>Manipulatives:
Number cards 1-10 (4 of each); blank die</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary: parts-and-total diagram, change diagram, comparison diagram, unknown, number model</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve fact extensions</td><td colspan="2">● Math Message:
Read about a nest of animal's eggs called a clutch.
● Using the Guide to Solving Number Stories
Review parts and total, change, and comparison number stories.
● Solving Number Stories
Solve higher-decade fact extensions.</td><td>● Math Minute:
Practice Mental Math strategies
● Game: Multiplication Draw
Practice 2s, 5s, and 10s facts
● Math Boxes 2.2
MJ page 37
● Home Link: 2-2
MM page 49</td></tr>
<tr><td>ELL Support:
Use a thnk0aloud to introduce the prefix un- while demonstrating being able and unable to reach something.</td><td>Readiness:
Matching Number Sentences to Number Stories</td><td>Enrichment-
● Writing tow number models to fit one story.
● Activity Card 19,
● SRB pages 266-267
● MM page TA8</td><td>Extra Practice-
● Writing number models and solving number stories.
● SRB page 268,
● MM page 48</td></tr>
<tr><td colspan="4">Assessment: MJ1 pages 35-36</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 2.3 More Number Stories</td><td>TE pages: 136-141</td></tr>
<tr><td colspan="4">Objective: SWL to use situation diagrams and other representations to help solve number stories.</td></tr>
<tr><td>Math Masters:
pages 50-51; TA8; TA15-TA16; G6 (optional)</td><td>Activity Cards :
20-21</td><td>Manipulatives:
Number cards 1-10 (4 of each) (optional); die labeled 2,2,5,5,10,10 (optional)</td><td>Other Materials:
slate; fact triangles; calculator</td></tr>
<tr><td colspan="4">Vocabulary: equation</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve fact extensions</td><td colspan="2">● Math Message:
Solve a number story
● Organizing Number Story Information
Share strategies to make sense of number stories.
● Solving More Number Stories
Solve number stories.</td><td>● Math Minute-
Practice Mental Math strategies
● Sorting Fact Triangles
Practice 2s, 5s, and 10s facts with Fact Triangles.
● Math Boxes-2-3
MJ page 40
● Home Link:2-3
Math Masters page 51</td></tr>
<tr><td>ELL Support:
Scaffold to make “letter sound” connections by displaying terms (equal and equation) and using letter tiles</td><td>Readiness:
● Changing the Calculator Display
● MM Page 50 and TA2
● Calculator</td><td>Enrichment-
● Writing Number Stories to Match Diagrams.
● Activity Card 20,
● MM pages TA8 and TA16</td><td>Extra Practice-
● Writing and solving number stories.
● Activity Card 21;
● SRB pages 268-269,
● MM pages TA8</td></tr>
<tr><td colspan="4">Assessment: MJ1 pages 38-39</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 2-4 Multistep Number Stories, Part 1
*Familiarize yourself with SRB page. 269, considers possible solutions for the Math Message</td><td>TE pages: 142-147</td></tr>
<tr><td colspan="4">Objective: SWL to make sense of and solve two-step number stories.</td></tr>
<tr><td>Math Masters:
pages: 52-54; TA2; TA15</td><td>Activity Card: 22</td><td>Manipulatives:
Number cards 0,1,2,5, and 10 (4 of each)</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve fact extensions</td><td colspan="2">● Math Message:
Estimate the cost of snacks
● Estimating Costs
Estimate to solve number stories involving money.
● Solving Multistep Stories
Solve multistep number stories.</td><td>● Math Minute-
Practice Mental Math strategies
● Rounding Numbers
Practice rounding numbers
● Math Boxes-2-4
MJ page 43
● Home Link:2-1
MM page 53</td></tr>
<tr><td>ELL Support:
Use visual aids and demonstrations to show children examples of steps, such as on stairs and steps we take as we walk</td><td>Readiness:
● Adding and Subtracting on a Number Grid
● MM page TA3</td><td>Enrichment-
● Solving Multistep Number Stories, Part 1.
● SRB p. 269;
● MM page 54</td><td>Extra Practice-
● Writing Sticker Stories.
● Activity Card 22;
● Math Masters page 52;
● Number Cards 0,1,2,5, and 10 (4 of each).</td></tr>
<tr><td colspan="4">Assessment: MJ page 41</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 2-5 Multistep Number Stories, Part 2</td><td>TE pages: 148-153</td></tr>
<tr><td colspan="4">Objective: SWL to solve number stories using two operations.</td></tr>
<tr><td>Math Masters:
page 52; 55-56; G7</td><td>Activity Cards:
23</td><td>Manipulatives:
● 6-sided dice (2 per group);
● number cards 0,1,2,5, and 10 (4 of each);
● counters;
● coins (optional)</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice adding three or more numbers.</td><td colspan="2">● Math Message:
Solve a multistep number story.
● Sharing Strategies
Explain and discuss their strategies and representations for a multistep number story.
● Using Number Models as Recorders
Record thinking as they solve number stories.
● Writing Number Models
Solve number stories and record number models.</td><td>● Math Minute-
Practice Mental Math strategies
● Playing Roll to 1,000
Practice mental math addition with multiples of 10.
● Math Boxes-2-5
MJ page 45
● Home Link: 2-5
Math Masters page 56</td></tr>
<tr><td>ELL Support:
Help students connect the words in a number story to the symbols in a number model</td><td>Readiness:
● Modeling Multiplication and Division
● Counters</td><td>Enrichment-
● Solving Multistep Number Stories, Part 2.
● Math Masters page 55</td><td>Extra Practice-
● Writing Sticker Stories.
● Activity Card 22;
● Math Masters page52;
● Number Cards 0,1,2,5, and 10 (4 of each).</td></tr>
<tr><td colspan="4">Assessment: MJ1 page 41</td></tr>
<tr><td colspan="3">Lesson: 2-6 Equal Groups</td><td>TE pages: 154-159</td></tr>
<tr><td colspan="4">Objective: SWL to solve problems involving multiples of equal groups and make sense of multiplying by zero (0) and one (1).</td></tr>
<tr><td>Math Masters:</td><td>Activity Card: 23</td><td>Manipulatives:</td><td>Other Materials:</td></tr>
</table>

<table>
<tr><td>pages 57-58;
TA8; TA11;
TA12 (optional);
TA15</td><td></td><td>● Quick Look Cards 123, 124, 129;
● toolkit clock;
● counters</td><td>● scissors
● envelope
● paperclip
● container of objects</td></tr>
<tr><td colspan="4">Vocabulary: equal groups; efficient</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.5 Apply properties of operations as strategies to multiply and divide.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Practice Quick Looks with equal groups and arrays.</td><td colspan="2">● Math Message:
Solve a number story.
● Making Sense of Equal Groups
Solve equal-groups number stories and reflect on the efficiency of their strategies.
● Multiplying by 0 and 1
Make sense of multiplying by 0 and 1 using number stories.
● Solving Equal-Groups Stories
Practice solving equal-groups number stories.</td><td>● Math Minute-
Practice Mental Math strategies
● Finding Elapsed Time
Measure time intervals in minutes.
● Math Boxes-2-6
MJ page 47
● Home Link:2-6
MM page 58</td></tr>
<tr><td colspan="2">ELL Support:
Show children pictures or real examples of packages of different sizes and shapes. Then show packages packed with the same number of items in preparation for thinking about packages as sets of the same number of objects.</td><td>Readiness:
● Making Equal Groups Counters
● Slate
●</td><td>Enrichment-
● Patterns in Multiplying by 0 and 1.
● Math Masters page 57
●</td><td>Extra Practice-
● Writing Multiplication Stories.
● Activity Card 23; Math Masters page TA8;
● Each Orange Had 8 Slices;
● A Counting Book</td></tr>
<tr><td colspan="4">Assessment: MJ page 46</td></tr>
</table>

Lesson: 2-7 Multiplication Arrays			TE pages: 160-165
Objective: SWL to solve array problems and play array BINGO			
Math Masters: pages 59-60; TA17- TA19; TA20 (optional); G8	**Activity Cards:** 24-26	**Manipulatives:** ● Quick Look Cards 131-133 ● counters (optional); ● number cards 1-20; ● centimeter cubes; ● 6-sided die, ● 10-sided die	**Other Materials:** ● 5" by 7" index cards labeled with 1,2, and 5 ● Fact Triangles
Vocabulary: array, number sentence, factors, product			
3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. 3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. 3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8*. 3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. 3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Practice Quick Looks with equal groups and arrays.	● **Math Message:** Find multiple arrays for 24. ● **Exploring Many Arrays, Same Total** Discuss how to find all possible arrays for a product. ● **Representing Number Stories with Arrays** Draw arrays to represent number stories. ● **Introducing Array Bingo** *Game* practice using multiplication with arrays and equal groups.		● **Math Minute-** Practice Mental Math strategies ● **Math Boxes-2-7** MJ page 49 ● **Home Link:2-7** Math Masters page 60
ELL Support: Help children describe nonverbally how they saw the dots on the Quick Look Cards. Show them how to use up-and-down gestures for column, side-to-side gestures for row, and their fingers to show how many dots they saw in each row or column.	**Readiness:** ● **Building Arrays** ● Activity Card 24 ● MM page 59, TA19 ● 6-sided die ● Centimeter Cubes	**Enrichment-** ● Building and Predicting with Arrays. ● Activity Card 25; ● centimeter cubes; 5x7 index card, 10-sided die	**Extra Practice-** ● Drawing Arrays for Fact Triangles. ● Activity Card 26; ● Fact Triangles; counters (optional)
Assessment: MJ page 48			

<table>
<tr><td colspan="3">Lesson: 2-8 Picturing Division 2 Day Lesson</td><td>TE pages: 166-175</td></tr>
<tr><td colspan="4">Objectives:
● Day 1- SWL to create mathematical representations for solving division problems.
● Day 2- SWL to discuss representations and solutions and then revise their work</td></tr>
<tr><td>Math Masters:
pages 61-62; TA6</td><td>Activity Cards:</td><td>Manipulatives:
counters</td><td>Other Materials:
● Marker
● sticky notes (optional);
● colored pencils (optional)
● Guidelines for Discussion Poster;
● examples of children’s work from Day 1</td></tr>
<tr><td colspan="4">Vocabulary: division, representation, remainder</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 ×? = 48, 5 = _ ÷ 3, 6 × 6 =?
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Start and stop skip counting.</td><td colspan="2">● Math Message:
Represent and solve an equal-sharing problem.
● Comparing Mathematical Representations
Compare representations.
● Solving the Open Response Problem
Use representations to solve division problems.
DAY 2 – Review children’s work and plan discussion for reengagement
MM p 61
Day 1 work</td><td>● Math Boxes: 2-8
MJ page 51
● Home Link: 2-8
MM page 62</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment</td><td>Extra Practice</td></tr>
<tr><td colspan="4">Assessment: Collect and review revised work. Utilize rubric on page 172 to evaluate children’s revised work.</td></tr>
<tr><td colspan="3">Lesson: 2-9 Modeling Division</td><td>TE pages: 176-182</td></tr>
<tr><td colspan="4">Objective: SWL to solve division number stories and learn about remainders.</td></tr>
<tr><td>Math Masters:
pages 39; 63-65;</td><td>Activity Cards:
27-28</td><td>Manipulatives:
● counters;
● pan balance;</td><td>Other Materials:
● Mass Museum items;
● pennies;</td></tr>
</table>

TA20 (optional)		● standard masses; ● 6-sided die	● stick-on notes; ● paper

Vocabulary: remainder, dividend, divisor, quotient

3.NF.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*.
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8*.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Solve division number stories	● **Math Message:** Solve and equal-sharing problem ● **Exploring Sharing Problems** Discuss equal-sharing representations. ● **Modeling with Division** Divide to solve number stories and learn about remainders. ● **Dividing to Solve Number Stories** *Represent and solve division number stories*.	● **Math Minute-** Practice Mental Math strategies ● **Exploring the Mass Museum** Estimate and measure mass ● **Math Boxes-2-9:** Preview for Unit 3 MJ page 53 ● **Home Link:2-9** MM page 65

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Help children understand the Mental Math and Fluency and the Math Message number story contexts by using visual aids, short questions, and role play	● **Making Equal Shares with Pennies** ● Activity Card 27 ● Pennies ● Post-It Notes ● Paper	● Dividing Strips. ● MM page 63	● Sharing Equally. ● Activity card 28; ● Math Masters page 64, ● 6-sided die; counters

Assessment: MJ page 52

Lesson: 2-10 Playing Division Arrays | TE pages 182-187

Objective: SWL to explore even and odd number patterns and play Division Arrays.

Math Masters:	**Activity Cards:**	**Manipulatives:**	**Other Materials:**
pages 64; 66-67; G9	28-29	● Quick Look Cards 151,154,156; ● counters; ● number cards 6-18; ● 6 sided die; ● base-10 blocks	● full sheet of paper; ● quarter sheets of paper

Vocabulary: remainder, dividend, divisor, quotient

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
NJSLS 3OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
NJLA 3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8*.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Practice Quick Looks with equal groups and arrays.	● **Math Message:** Use arrays to use number stories ● **Exploring Even and Odd Arrays** Explore even and odd number patterns. ● **Introducing Division Arrays Game** Group counters equally to proactive division.	● **Math Minute-** Practice Mental Math strategies ● **Solving More Multistep Number Stories** Solve number stories with more than one operation. ● **Math Boxes-2-10** MJ page 56 ● **Home Link:2-10** Math Masters page 67

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Help students associate row with going across by gesturing across rows in an array while saying side to side. Encourage students to move their fingers across a row in an array as they repeat "side-to-side"	● **Exploring Equal Shares** ● MM page 66 ● Counters ● Quarter-sheets of paper	● Modeling Division with Base-10 Blocks. ● Activity Card 29; ● Base-10 Blocks; Paper	● Sharing Equally. ● Activity card 28; ● Math Masters page 64, ● 6-sided die; counters

Assessment: Math Masters page G9

<table>
<tr><td colspan="3">Lesson: 2-11 Frames and Arrows</td><td>TE pages: 188-193</td></tr>
<tr><td colspan="4">Objective: SWL to review Frames-and-Arrows diagrams and solve problems using the four operations.</td></tr>
<tr><td>Math Masters:
pages 68-71;
TA21</td><td>Activity Cards: 30-31</td><td>Manipulatives:
number cards 1-4</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary: Frames-and-Arrows, frames, arrow rule</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Record fact families for addition and multiplication facts.</td><td colspan="2">● Math Message:
Solve problems involving arithmetic patterns.
● Reviewing Frames-and-Arrows
Solve Frames-and-Arrows problems.
● Solving Frames-and-Arrows
Share strategies for solving Frames-and-Arrows problems.</td><td>● Math Minute-
Practice Mental Math strategies
● Representing Number Stories
Multiply to solve number stories.
● Math Boxes-2-11
MJ page 58
● Home Link:2-11
MM page 71
SRB pages 72-73</td></tr>
<tr><td>ELL Support:
Scaffold the term frame. Utilize outlining gestures to show that a frame surrounds something and that frames can have different shapes</td><td>Readiness:
Writing Fact Families for Different Operations
Number cards 1-9 (4 of each)</td><td>Enrichment-
● Solving Two-Rule Frames and Arrows.
● Activity Card 30
● Math Masters page 68</td><td>Extra Practice-
Solving Frames-and-Arrows Problems.</td></tr>
<tr><td colspan="4">Assessment: MJ page 57</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 2-12 Exploring Fraction Circles, Liquid Volume, and Area. (Explorations)</td><td>TE pages: 194-199</td></tr>
<tr><td colspan="4">Objective: SWL to explore fraction circles, area measures, and liquid volume in liters.</td></tr>
<tr><td>Math Masters:
pages 72-74; TA19; TA22; G9</td><td>Activity Cards:
32-33</td><td>Manipulatives:
● Everyday Math Decks including number cards 6-18;
● 6-sided die;
● centimeter cubes;
● fraction circles;
● 1-liter beaker.</td><td>Other Materials:
● slate;
● rectangular items of various sizes;
● tape (optional);
● assorted containers;
● paper towels;
● dishpan and pitcher
● empty transparent 1 liter bottle;
● water;
● food coloring (optional)</td></tr>
<tr><td colspan="4">Vocabulary: fraction, whole, fraction circles, area (A), square inch (sq. in.), square centimeter (sq. cm.), volume (v), liter (l)</td></tr>
<tr><td colspan="4">3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.[2]
3.MD.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.
3.MD.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
</table>

<table>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve fact extensions.</td><td colspan="2">● Math Message:
Examine fraction circles.
● Introducing Fraction Circles
Name unit fractions.
● Exploration A: Exploring Fraction Circles
Explore fraction circles.
● Exploration B: Measuring Area
Measure areas of rectangles by counting square inches and square centimeters.
● Exploration C: Comparing Liquid Volume
Compare liquid volume of containers.</td><td>● Math Minute
Practice Mental Math strategies
● Playing Division Arrays
Group counters equally to practice division.
● Math Boxes 2-12
MJ page 563
● Home Link 2-12
Math Masters page 74</td></tr>
<tr><td>ELL Support:
Demonstrate the meaning of cover by showing examples of items that cover each other exactly, such as two playing cards. Demonstrate that you cannot see the covered card hidden below.</td><td>Readiness:
Describing Volume
● Empty transparent 1-liter bottle
● Water
● Container for pouring
● Food coloring (optional)</td><td>Enrichment-
● Estimating Area.
● Math Masters page 72
● centimeter cubes</td><td>Extra Practice-
● Finding Letter Areas.
● Math Masters page 73;
● centimeter cubes</td></tr>
<tr><td colspan="4">Assessment:</td></tr>
</table>

Lesson: 2.13 Unit 2 Progress Check **2 DAY TEST ADMINSTRATION**	TE pages: 200-207

Objective: SWB assessed on Unit 2 skills

- **Day 1**- Administer the Unit Assessments
- **Day 2**- Administer the Cumulative Assessment

Math Masters:	**Activity Cards :**	**Manipulatives:**	**Other Materials:** Assessment Book pages 6-14

Vocabulary:

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.[3]
3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NBT.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
NJSLS 3. MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.
NJSLS 3. MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Self-Assessment ● Assessment Book page 15	**Day 1** ● **Unit 2 Assessment – Skills Test** Assessment Handbook pages 16-19 ● **Unit 2 Challenge (Optional)-** Assessment Handbook pages 20-21 **Day 2** ● **Unit 2 Cumulative Assessment** Assessment Handbook pages 22-24	● **Math Boxes-2.13** Preview for Unit 3 MJ1 page 64 ● **Home Link:2-13** Take home the Family Letter that introduces Unit 3 Pages 75-78

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**

Assessment: Correct and Record information in online Class Keeper.

Resources

Websites	www.connectED.mheducation.com www.everydaymath.uchicago.edu

	http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm www.vlc.cemseprojects.org www.learnzillion.com
Books	*Teacher's Lesson Guide, Volume 1* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 2.1-2.13 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	https://www.youtube.com/watch?v=MJGHOzPUrgk (Third Grade Multiplication Unit- various strategies for multiplication) *Math Curse* by Jon Scieszka and Lane Smith *Minnie's Diner* *Patterns in Peru...* *A Remainder of One*

Unit 3 Plan	Operations
Suggested Time Frame	19 days including “Flex Days”

Stage 1: Desired Results
Overview / Rationale
In this unit, children use place value to develop and practice strategies for addition and subtraction of 2- and 3-digit numbers. They represent multiplication using arrays, and use these representations to develop strategies for solving multiplication facts.

New Jersey Student Learning Standards for Mathematics

3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 ×? = 48, 5 = _ ÷ 3, 6 × 6 =?*

3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets*.

3.MD.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.

3.MD.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

3.MD.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.

3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

3.MD.7 Relate area to the operations of multiplication and addition.

3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*.

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7*.

3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.5 Apply properties of operations as strategies to multiply and divide.[2] *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*

3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends*.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	**Enduring Understandings**
1. What are efficient methods for finding sums and differences? What are different models of and models for multiplication and division? 2. What are efficient methods for finding products and quotients? What questions can be answered using multiplication and division? 3. How does the position of a digit in a number affect its value? **4.** What are tools of measurement and how are they used?	*Students will understand that…* 1. Proficiency with basic facts aids estimation and computation of larger and smaller numbers. 2. Flexible methods of computation involve grouping numbers in strategic ways. 3. Place value is based on groups of ten. Standard units provide common language for communication measurements.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• That numbers can be broken apart and put together in different ways to facilitate operations • That algebraic reasoning involves keeping balance on both sides of an equation • How to interpret equal grouping and equal sharing situations • How to solve number stories in situations involving equal groups and arrays • How to make sense of and represent number stories involving addition and subtraction	• Find inputs, outputs, and rules in a "What's my Rule?" table • Use close-but easier numbers and mental math • Estimate and use partial-sums addition to solve problems • Estimate and use column addition to solve problems • Use multiples of 100s, 10s, and 1s to count up • Use expand-and-trade subtraction • Complete a picture graph with symbols representing the data • Create arrays and determine products for multiplication squares • Generate pairs of facts that demonstrate the turn-around rule • Use adding-a-group strategy to solve multiplication facts • Write equivalent names using additions, subtraction, and multiplication

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – 21st Century Themes			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed**	**Career Ready Practices**
9.1	**Personal Financial Literacy**		E	CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		TA	CRP2. Apply appropriate academic and technical skills.
X	Money Management		T	CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management		ETA	CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		ETA	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration		E	CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:
NJ Learning Standards for English Language Arts:
NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessments • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips/Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessments** • End of the Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 3.1 (3.OA.4, 3.OA.7, 3.NBT.2):** Find inputs, outputs, and rules in "What's my Rule?" tables. Challenge students to create situations that match their completed "What's my Rule?" problems.
- **Lesson 3.2 (3.OA.8, 3.NBT.1, 3.NBT.2):**
  - **Day 1** Use close-but-easier numbers and mental math. Students will discuss estimation and use it to explain their thinking when solving a two-step number story.
  - **Day 2** Reengage students in the original task from the day prior (estimating to solve a two-step number story). Allow students to peer review, this should look similar to peer reviews/partner talk done in Language Arts. Hold a class discussion about the different strategies used and how each strategy does or does not work.
- **Lesson 3.3 (3.OA.8, 3.NBT.2):** Estimate and use partial-sums addition to solve problems. Review expanded form and discuss expanded form in regards to place value. Students should have prior knowledge of partial sums.
- **Lesson 3.4 (3.OA.8, 3.NBT.2):** Estimate and use column addition to solve problems. Expect most students to make reasonable estimates for Math Journal problems 1-3. For those needing reinforcement, provide them with base ten blocks as manipulatives for completing the problems.
- **Lesson 3.5 (3.OA.8, 3.NBT.2):** Use multiples of 100s, 10s, and 1s to count up. Students may represent this type of counting using open number lines or number sentences.
- **Lesson 3.6 (3.OA.8, 3.NBT.1, 3.NBT.2):** Use expand- and-trade subtraction. As students complete their work have them create partnerships to discuss their answers; reinforcing verbal understanding and discussion strategies. Should they share and compare resulting in a disagreement, have students work together until they agree on an answer.
- **Lesson 3.7 (3.MD.3, 3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7a, 3.G.2):** Complete a picture graph with symbols representing the data. Students discuss a scale for data sets, then use pattern blocks to sort and graph. For extension discuss using measurements for data and practice measuring the area of objects to create new data sets.
- **Lesson 3.8 (3.NBT.2, 3.MD.3):** Graph given data using a scale. Then students will refer to their picture graphs to answer a series of questions. This provides students with a self-assessment of their understanding as well as an informal assessment for the teacher.

- **Lesson 3.9 (3.OA.1, 3.OA.7):** Create arrays and determine products for multiplication squares. Discuss what students notice about the two **factors**, the numbers being multiplied, in the number sentence $3 \times 3 = 9$? They are both 3. Explain to students that they will create and explore more arrays with equal factors.
- **Lesson 3.10 (3.OA.5, 3.OA.7):** Generate pairs of facts that demonstrate the turn-around rule. Present students with the commutative property of multiplication, they are required to apply this property but are not expected to know the formal name or definition of the rule.
- **Lesson 3.11 (3.OA.1, 3.OA.3, 3.OA.5, 3.OA.7):** Use adding-a-group strategy to solve multiplication facts. Read each of the problems out loud to the class and discuss strategies for solving the problems before allowing them to work in their partnerships.
- **Lesson 3.12 (3.OA.1, 3.OA.3, 3.OA.5, 3.OA.7):** Use subtracting-a-group strategy to solve multiplication facts. Read each of the problems out loud to the class and discuss strategies for solving the problems before allowing them to work in their partnerships. Students may draw pictures to represent their facts as they are working.
- **Lesson 3.13 (3.OA.1, 3.OA.3, 3.OA.5, 3.OA.7):** Completing Name collection boxes. Before children begin work on the journal page, have them find the pages on name-collection boxes in their *Student Reference Book.* Remind them to use the index. Read the essay with children and discuss any questions that arise. Discuss why each students may have different ideas in their name collection boxes and if students are incorrect in their thinking. Have students justify their ideas and answers.

<table>
<tr><td colspan="3">Lesson 3.1: “What’s My Rule?”</td><td>TE pages 220-225</td></tr>
<tr><td colspan="4">Objective: SWL to find missing numbers and rules in “What’s My Rule?” tables.</td></tr>
<tr><td>Math Masters:
page 79
TA23-TA24 G7</td><td>Activity Cards:
34-35</td><td>Manipulatives:
● counters,
● 2-6 sided dice
● Class Number Line</td><td>Other Materials:
● Slate
● Box
● calculator</td></tr>
<tr><td colspan="4">Vocabulary: What’s My Rule?, function machine, input, rule, output</td></tr>
<tr><td colspan="4">NJSLS <u>3.OA.A.4</u> Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
NJSLS <u>3.NBT.A.2</u> Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Write numbers in standard form</td><td colspan="2">● Math Message:
Application of multiplication rule to complete a table.
● Review “What’s My Rule?” Tables
Describe pattern of tables
● Review “What’s My Rule?” variations
Discuss types of “What’s My Rule?” problems
● Complete “What’s My Rule?” Problems
Practice solving problems
SRB pages 74-75
MM TA24-25
counters</td><td>● Minute Math
Practice mental math strategies
● Game: Roll to 1,000
SRB page 253
MM page G7
Two 6-sided dice
● Math Boxes:
page 66
● Math Boxes:
Math Journal page 66</td></tr>
<tr><td>ELL Support:
To scaffold the terms input and output, build on children’s understanding of the words in and out.</td><td>Readiness:
Identifying a Mystery Rule
● Number line (optional)
● Counters (optional)</td><td>Enrichment:
● Creating “What’s My Rule?” Problems
● Activity Card 34
● MM page TA24
● calculator</td><td>Extra Practice:
● Practicing “What’s My Rule?” Problems
● Activity Card 35
● MM pg. TA 24</td></tr>
<tr><td colspan="4">Assessment: Observe student application of topic. Math Journal page 64. Review problems 1-4 MJ page 63.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.2 Estimating Costs 2-day Lesson</td><td>TE pages: 225-235</td></tr>
<tr><td colspan="4">Objective: SWL to
● Day 1- Make estimates for problems they solve using mental math.
● Day 2- examine others' explanations using a rubric as a guide, and then revise their work.</td></tr>
<tr><td>Math Masters:
page 80-83</td><td>Activity Card:</td><td>Manipulatives:</td><td>Other Materials:
Standards for Math Practices Poster</td></tr>
<tr><td colspan="4">Vocabulary: estimate, close but easier numbers, reasonable , precisely, rubric</td></tr>
<tr><td colspan="4">3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Identify the closest multiple of 10</td><td colspan="2">● Math Message:
Make sense of an estimation strategy used to check whether an answer to an addition problem is reasonable
● Estimating Costs
Discuss estimation strategies that can be used to check the reasonableness of a sum
● Solving the Open Response Problem
Make estimates for a 2-step number story and explain their thinking.</td><td>● Math Minute
● Math Boxes-
Day 1 - Journal page 67
Day 2 – Journal page 68
● Home Link: 3-2</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment:</td><td>Extra Practice:</td></tr>
<tr><td colspan="4">Assessment: Collect and review children's work Day 1. Collect and review revised work Day 2. Check that students used close but easier numbers and mental math in both problems Use rubric on page 232 to evaluated revised student work.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.3 Partial- Sums Addition</td><td>TE pages: 236-241</td></tr>
<tr><td colspan="4">Objective: SWL to use partial sums addition to add 2 and 3 digit numbers.</td></tr>
<tr><td>Math Masters:
page 84,
TA 14,
G 10-11</td><td>Activity Card: 36</td><td>Manipulatives:
● number cards 0-9 (4 of each)
● base-10 blocks</td><td>Other Materials:
● Slate
● ½ sheet of paper.</td></tr>
<tr><td colspan="4">Vocabulary: partial sums addition, expanded form</td></tr>
<tr><td colspan="4">3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Write numbers in expanded form</td><td colspan="2">Math Message:
● Add and use estimates to check their sums-slate activity
● Discussing Estimates
Share estimation and addition strategies
● Adding with partial sums
Review and practice partial sums addition to add 3-digit numbers
● MJ page 69</td><td>● Math Minute
Practice mental math strategies
● Game- Shuffle to 100
SRB 256-257
MM G10
Number cards-0-9 (4 of each)
● Math Boxes-
Math Journal page 69
● Home Link: 3.3</td></tr>
<tr><td>ELL Support:
Use simple jigsaw puzzles to build background knowledge for understanding the term partial.</td><td>Readiness:
Modeling with Base-10 Blocks
● MM page TA14
● Base-10 blocks
● Number cards 0-9 (4 of each)
● Half-sheet of paper</td><td>Enrichment-
● Game- Shuffle to 1000
● SRB 256-257
● MM G10
● Number cards-0-9 (4 of each)</td><td>Extra Practice-
● Estimating Partial Sums
● Activity card 36
● SRB g 116-117
● Number cards 1-9 (4 of each)
● Paper, and or slate</td></tr>
<tr><td colspan="4">Assessment: Math Journal 1 page 69. Base-10 blocks (optional)</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.4 Column Addition</td><td>TE pages: 242-247</td></tr>
<tr><td colspan="4">Objective: SWL column addition.</td></tr>
<tr><td>Math Masters:
page 85-87,
TA 14,</td><td>Activity Cards: 37</td><td>Manipulatives:
● Number cards, 0-9 (4 of each),
● base 10 blocks</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary: column addition</td></tr>
<tr><td colspan="4">3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Find the closest multiple to 10</td><td colspan="2">● Math Message:
Use partial sums to solve addition problems- slate
● Introducing Column Addition
Learn column addition and compare it to partial suns addition
● Practicing Column Addition
Use column addition with multi-digit numbers</td><td>● Math Minute
Practice Mental Math Strategies
● Adding to Solve Number Stories
Add mileage data to solve number stories
SRB page 272
MM page 86
● Math Boxes- 3.4
Math Journal- page 71
● Home Link:
SRB 118 MM page 87</td></tr>
<tr><td>ELL Support:
Use pictures or video clips to provide students with visual examples of columns found in large buildings</td><td>Readiness:
Making Trades with Base-10 Blocks
Base-10 blocks</td><td>Enrichment-
● Adding to Solve Number Stories
● Add mileage data to solve number stories
● SRB page 272
● MM page 86</td><td>Extra Practice-
● Practicing Column Addition
● Use column addition with multi-digit numbers
● Activity Card 37
● SRB page 118
● Number cards, 0-9 (4 of each),</td></tr>
<tr><td colspan="4">Assessment: Math Journal page 87.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.5 Counting –Up Subtraction</td><td>TE pages: 248-253</td></tr>
<tr><td colspan="4">Objective: SWL to review counting up subtraction.</td></tr>
<tr><td>Math Masters:
● pages 88-89 TA3,
● Assessment Handbook, pages 54-56, and 60</td><td>Activity Card: 38</td><td>Manipulatives:
● Number cards, 0-9 (4 of each),
● base 10 blocks,
● number line</td><td>Other Materials:
● slate,
● number grid,
● Fact Triangles</td></tr>
<tr><td colspan="4">Vocabulary: counting up, open number line</td></tr>
<tr><td colspan="4">3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Round numbers to the nearest to 10 and use them to estimate sums and differences</td><td colspan="2">● Math Message:
Subtract 2 digit numbers
● Counting Up to Subtract
Count up on open number lines
● Representing Count up
Represent counting up subtraction with open number lines or number sentences.</td><td>● Math Minute
Practice Mental Math Strategies
● Practicing Fact Triangles
Assessment Handbook pages 136-138 and 142,
SRB page 248,
Fact Triangles
● Math Boxes- 3.5
Math Journal- page 73
● Home Link: 3.5
● MM page 89</td></tr>
<tr><td>ELL Support:
Display a number line vertically with the smaller numbers at the bottom. Demonstrate counting up.</td><td>Readiness:
Finding Multiples of 10
● MM page TA3
● Class number lime</td><td>Enrichment-
● Counting Up Efficiently
● Activity Card 38
● Number cards, 0-9 (4 of each), base 10 blocks, number line</td><td>Extra Practice-
● Subtraction on an Open Number Line
● MM page 88</td></tr>
<tr><td colspan="4">Assessment: Math Journal page 73. Observe that students are using counting up subtraction in problems 1-3 and show their work on open number lines or with number sentences.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.6 Expand and Trade Subtraction</td><td>TE pages: 254-259</td></tr>
<tr><td colspan="4">Objective: SWL to review counting up subtraction.</td></tr>
<tr><td>Math Masters:
page 90
TA3, TA 14</td><td>Activity Cards: 39-40</td><td>Manipulatives:
● Number cards 0-9 (4 of each)
● base 10 blocks
● number line</td><td>Other Materials:
● large poster paper
● markers
● scissors
● tape</td></tr>
<tr><td colspan="4">Vocabulary: Expand and Trade Subtraction</td></tr>
<tr><td colspan="4">3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Estimate sums</td><td colspan="2">● Math Message:
Solve a subtraction problem
● Reviewing Expand and Trade Subtraction
Review expand and trade subtraction
Base 10 blocks
● Practicing Expand and Trade Subtraction
Use expand and trade subtraction
MJ page 75</td><td>● Math Minute
Practice Mental Math Strategies
● Compare Data in a Bar Graph
Solve comparison number stories using a scaled bar graph MJ page 76
● Math Boxes- 3.6
Math Journal- page 76
● Home Link: 3.6
MM page 90</td></tr>
<tr><td>ELL Support:
Scaffold the term trade by role-playing familiar, everyday situations.</td><td>Readiness:
Trading with Base-10 Blocks
● MM page TA14
● Base-10 blocks</td><td>Enrichment-
● Counting Up Efficiently
● Activity Card 38
● Number cards, 0-9 (4 of each),
● base 10 blocks,
● number line</td><td>Extra Practice-
● Practicing Expand and Trade Subtraction
● Use expand and trade subtraction
● MJ page 75</td></tr>
<tr><td colspan="4">Assessment: Math Journal page 75, MM TA14, base 10 blocks. Most children will make reasonable estimates and to write the numbers in problems 1-3. Use materials to aid students who struggle with objective</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.7 Exploring Bar Graphs, Area, and Partitioning Rectangles</td><td>TE pages: 260-265</td></tr>
<tr><td colspan="4">Objective: SWL to explore different ways to measure area, partition rectangles, and represent data on a scaled bar graph.</td></tr>
<tr><td>Math Masters:
pages 91-96, TA 3, TA7, G 10</td><td>Activity Cards:
41-42</td><td>Manipulatives:
● Pattern blocks,
● 25 centimeter blocks,
● number cards 1-9 (4 of each)</td><td>Other Materials:
● 1 ft. square cardboard templates,
● Colored paper,
● Scissors,
● Straightedge,
● Masking tape,
● Collection of objects.</td></tr>
<tr><td colspan="4">Vocabulary: scale, scaled bar graph, area, square units tiles, partition</td></tr>
<tr><td colspan="4">3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Estimate differences between 3 digit numbers.</td><td colspan="2">● Math Message:
Discuss setting up a bar graph
● Discussing a Scale for a Data Set
Discuss a scale for a data set.
● Exploration A-Creating a Scaled Bar Graph-
Activity Card 41,
MJ page 79 MM page TA7
Graph pattern block sort
● Exploration B-Measuring Area Measure surfaces in square feet
Activity Card 42, materials
● Exploration C- Partitioning Rectangles
Connect tiling and partitioning 25 cm blocks, square pattern block</td><td>● Math Minute
Practice Mental Math Strategies
● Compare Data in a Bar Graph
Solve comparison number stories using a scaled bar graph
MJ page 76
● Game- Playing Shuffle to 100
SRB pages 256-257
MM page G10
● Math Boxes- 3.7
Math Journal- page 80
● Home Link: 3.7
MM page 96</td></tr>
<tr><td>ELL Support:
Introduce children to multiple uses of the word scale using a pictorial 4-square Graphic Organizer (MM page TA20).</td><td>Readiness:
Making a Scaled Bar Graph
MM page 91</td><td>Enrichment-
● Partitioning Polygons
● MM pages 92-93
● Straightedge</td><td>Extra Practice-
Measuring Different Areas with 1 foot Squares</td></tr>
<tr><td colspan="4">Assessment: Observe Exploration</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.8 Scaled Picture Graphs</td><td>TE pages: 266-271</td></tr>
<tr><td colspan="4">Objective: SWL to create scaled picture graphs</td></tr>
<tr><td>Math Masters:
pages 97-99,
TA 25</td><td>Activity Cards: 43</td><td>Manipulatives:</td><td>Other Materials:
slate</td></tr>
<tr><td colspan="4">Vocabulary: scale, picture graph, key, scaled picture graph</td></tr>
<tr><td colspan="4">3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Skip counting using calculator</td><td colspan="2">● Math Message:
Write questions about their scaled bar graphs
MJ1 pages 79 and 81
● Exploring Scaled Bar and Picture Graphs
Ask and answer questions about their scaled bar graphs and read about picture graphs.
MJ1 pages 79 and 81
SRB pages 193-194
MM T25
● Drawing a Scaled Picture Graph
Graph given data with a scale</td><td>● Math Minute
Practice Mental Math Strategies
● Making Sense of Number Stories
Solve problems in two steps
MJ pages 84-85
● Game- Playing Shuffle to 100
SRB pages 256-257
MM pages G10
● Math Boxes- 3.8
Math Journal- page 83
● Home Link: 3.8
MM page 99</td></tr>
<tr><td>ELL Support:
Introduce students to multiple uses of the word key by preparing a pictorial 4-square Graphic Organizer (MM page TA20)</td><td>Readiness:
Completing a Picture Graph
MM page 97</td><td>Enrichment-
● Collecting and Representing Data
● Activity Card 43
● MM page TA 25</td><td>Extra Practice-
● Drawing a Scaled Picture Graph
● Graph given data with a scale
● MM page 98</td></tr>
<tr><td colspan="4">Assessment: Math Journal page 82. Expect students to complete problem 1 and explain that the 2 rectangles represent 8 cars washed on Friday. Observe students.</td></tr>
</table>

Lesson: 3.9 Exploring Multiplication Squares			TE pages: 272-277
Objective: SWL to discover the multiplication squares and begin a fact strategy journal.			
Math Masters: pages 100-102, TA 19-20, TA22	**Activity Cards:** 44-46	**Manipulatives:** ● 10-sided dice: ● per partnership: 100 centimeter cubes	**Other Materials:** ● ½ sheet of paper ● Class Data Pad ● Scissors ● paper clips ● Fact Triangles ● crayons and markers
Vocabulary: factors, multiplication squares, square product			
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Multiply to solve number stories	● **Math Message:** Sketch equal factor arrays ½ sheet of paper ● **Exploring Multiplication Squares** Build and explore equal Factor Arrays MJ1 page 86 MM page TA22 Cubes tape ● **Assessment Check In-See Below TE 275** ● **Rolling and Recording Squares** Solve multiplication squares and record products MM page 100, TA 20 ● **Introducing Multiplication Facts Strategy Logs** ● **Revisit the Fact Strategy Wall and record examples in log** MJ page 135-140		● **Math Minute** Practice Mental Math Strategies ● **Practicing with Fact Triangles** Practicing multiplication squares MJ1 Activity Sheet 9, Scissors Tape paper clips ● **Math Boxes- 3.9** Math Journal- pages 86-87 ● **Home Link: 3.9** MM pages 101-102
ELL Support: To scaffold the term array, prepare a T-chart with the headings Examples and Non-Examples. Populate the chart with images of common objects that are organized in arrays, such as egg cartons, muffin pans, or ice-cube trays.	**Readiness:** ● **Building Arrays for Facts** ● Activity Card 44 ● Centimeter cubes ● Fact triangles	**Enrichment:** ● Writing Multiplication Square Number Stories Activity Card 45 ● **Book-Sea Squares by Joy N. Hulme** Crayons and markers	**Extra Practice:** ● Rolling and Recording Squares ● Activity Card 46 ● MM page 100 ● 10-sided dice
Assessment: Math Journal page 86. Check to see if students are identifying their square facts as squares. Aid struggling students with cm blocks or grid paper.			
Lesson: 3.10 The Commutative Property of Multiplication			TE pages: 278-283

Objective: SWL about the turn-around rule for multiplication.

Math Masters:	**Activity Cards:** 44-46	**Manipulatives:**	**Other Materials:**
pages 103-105, TA 18, TA 20, TA26-27		6-sided dice: dominoes	slate, scissors,

Vocabulary: turn around rule, Multiplication /Division Facts Table , facts table

3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Solve equal grouping number stories ● slate	● **Math Message:** Represent a product with arrays ● **Introducing the Turn Around Rule for Multiplication** Develop the turn-around rule for multiplication ● **Assessment Check-In** (TE page 281) ● **Introduction of Multiplication/Division Facts Table** Recognize the turn-around rule MJ page 138 ● **Taking Inventory of Known Facts** Complete part of the Multiplication Facts Inventory MJ1 page 141 MM TA page 20	● **Math Minute** Practice Mental Math Strategies ● **Practicing with Fact Triangles** Practicing multiplication squares MJ1 Activity Sheet 9, scissors Tape paper clips ● **Game- Array Bingo** Match arrays with multiplication facts SRB page 232-233 MM page TA18 ● **Math Boxes- 3.10** Math Journal- pages 88-89 ● **Home Link: 3.10** MM page 105

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Teacher students that turn around can also mean switching or exchanging places. Have pairs of students role-play exchanging places.	● **Writing Facts with Dominoes** ● MM page TA27 ● Dominoes	● Exploring the Turn Around Rule ● MM page 103	● Showing the Turn Around Rule on a Facts Table ● MM page 104, scissors

Assessment: Math Journal page 88. Observe if children are generating pairs of facts and arrays that demonstrate the turn-around rule.

Lesson: 3.11 Adding a Group TE pages 284-291

Objective: SWL to develop the adding a group strategy for solving unknown multiplication facts.

Math Masters:	**Activity Card:** 47	**Manipulatives:**	**Other Materials:**

pages 106-107 G6		● Quick Look Cards, 134,135,146 ● Counters ● 6 sided die ● number cards 1-10 (4 of each) ● number cards 0-10	● slate, ● ½ sheet of paper ● colored pencils ● Fact Triangles ● large poster paper ● markers and crayons ● Class Data Pad

Vocabulary : helper fact, adding a group

3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Look with equal groups and arrays ● Quick Look cards – 134-136 ● slate	● **Math Message:** Sketch an array and solve a number story ½ sheet of paper ● **Exploring Adding a Group** Use helper facts to solve other multiplication facts MJ page 141, colored pencils, counters ● **Practicing Adding a Group** Add groups to helper facts MJ pages 90-91, 139, Class Data Pad colored pencils	● **Math Minute** Practice Mental Math Strategies ● **Practicing with Fact Triangles** Practicing multiplication squares MJ1 Activity Sheet 9 Scissors Tape paper clips ● **Game- Multiplication Draw** Practice Multiplication Facts SRB page 248 MM page G6 6-sided dice number cards ● **Math Boxes- 3.11** Math Journal- pages 90-91 Preview for Unit 4 ● **Home Link: 3.11** MM page 107

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Build on children's experiences as classroom helpers to scaffold the term helper facts. Display words help and helper.	**Adding Another Group** Counters	● Adding a Group to Helper Facts ● Activity Card 47, Fact Triangles, poster, markers	● Solving Problems by Adding a Group ● MM page 106 ● Number cards 0-10

Assessment: Page 289, Math Journal pages 90-91. Observe if children are generating products for the helper facts and solve the related multiplication facts using arrays or other representations for Problems 1 and 2

<table>
<tr><td colspan="3">Lesson: 3.12 Subtracting a Group</td><td>TE pages 292-297</td></tr>
<tr><td colspan="4">Objective: SWL to develop the subtracting a group strategy.</td></tr>
<tr><td>Math Masters:
page 108-110</td><td>Activity Card: 48</td><td>Manipulatives:
● Quick Look Cards 11,15, 16,
● Counters
● 6 sided die
● number cards 1-10 (4 of each)
● number cards 0-10</td><td>Other Materials:
● slate,
● ½ sheet of paper
● colored pencils
● 2’s, 5’s, 10’s Fact Triangles
● large poster paper,
● markers and crayons</td></tr>
<tr><td colspan="4">Vocabulary : helper fact, subtracting a group</td></tr>
<tr><td colspan="4">3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve 2’s, 5’s, and 10’s facts
● slate</td><td colspan="2">● Math Message:
Sketch an array and solve a number story,
½ sheet of paper
● Exploring Adding a Group
Use helper facts to solve other multiplication facts
MJ page 140,
colored pencils
counters
● Practicing Adding a Group
Subtract groups to helper facts
MJ pages 903-94, 140,
Class Data Pad, colored pencils</td><td>● Math Minute
Practice Mental Math Strategies
● Practicing with Fact Triangles
Practicing multiplication squares
MJ Activity Sheet 9, scissors, tape,
paper clips
● Math Boxes- 3.12
Math Journal- pages 93-95
● Home Link: 3.12
MM page 109-110</td></tr>
<tr><td>ELL Support:
Think aloud while displaying a pair of objects that are equal but not identical, such as a dime and 10 pennies.</td><td>Readiness:
Subtracting Another Group
Counters</td><td>Enrichment-
● Subtracting a Group to Helper Facts
● Activity Card 48,</td><td>Extra Practice-
● Solving Problems by Subtracting a Group
● MM page 108
● Number cards 0-10</td></tr>
<tr><td colspan="4">Assessment: page 296. MJ pages 93-94. Observe if children are generating products for the helper facts and solve the related multiplication facts using arrays (or other representations) for Problems 1 and 2</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 3.13 Equivalent Names</td><td>TE pages: 298-303</td></tr>
<tr><td colspan="4">Objective: SWL to use all four operations to generate equivalent names for numbers.</td></tr>
<tr><td>Math Masters:
pages 111-113,
TA 28-TA29,
G12</td><td>Activity Cards: 49-50</td><td colspan="2">Manipulatives:
Quick Look Cards 11,15, 16, counters, 6 sided die, number cards 1-10 (4 of each), number cards 0-10</td></tr>
<tr><td colspan="4">Vocabulary : expression, equivalent, name collection box</td></tr>
<tr><td colspan="4">3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Practice Quick Looks with equal groups and arrays
● Quick Look Cards 133,137,138
● slate</td><td colspan="2">● Math Message:
Find equivalent names
● Finding Equivalent Names
Find equivalent names with name –collection boxes.
** See Teacher's Manual
● Completing Name Collection Boxes
Solve name collection problems
MJ page 96,
base 10 blocks or counters
● Introducing Name That Number
SRB page 249-250,
MM page G12.
Number cards.</td><td>● Math Minute
Practice Mental Math Strategies
● Practicing with Frames and Arrows
Solve double rule Frames and Arrows
MM pg-112, TA120
● Game- Introducing Name That Number
SRB pages 249-250,
MM page G12.
Number cards.
● Math Boxes- 3.13
Math Journal pages 96-97
● Home Link: 3.13
MM page 113</td></tr>
<tr><td>ELL Support:
Write "Mom" in the name-collection box. Discuss names for moms. Point out that this box contains a collection of names for the same person.</td><td>Readiness:
Representing Equivalent Names
● Activity Card 49
● Base-10 blocks
● Number cards 0-9 (4 of each)</td><td>Enrichment:
Writing Equivalent Names
MM page 111</td><td>Extra Practice:</td></tr>
<tr><td colspan="4">Assessment: page 302, Math Journal page 96. Observe if children are writing at least 10 equivalent names using addition, subtraction, multiplication or division for Problems 3 and 4.</td></tr>
</table>

Lesson: 3.14 Unit 3 Progress Check ****2 Days**			TE pages: 304-311
Objective: ● Day 1 – Administer the Unit Assessments ● Day 2- Administer the Open Response Assessments			
Math Masters: page 114-117 **Assessment Handbook**-25-32	**Activity Cards:**	**Manipulatives:** base 10 blocks	**Other Materials:** Standards for Math Practice Poster.
Vocabulary :			
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.B.5** Apply properties of operations as strategies to multiply and divide. **3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Complete Student Self-Assessment	**Day 1 Student Assessment** ● pages 26-29 ● To demonstrate their progress on the Common Core State Standards covered in this unit **Day 2 Assessment**		● **Math Boxes-** MJ page 98 ● **Home Link: 3.14** Family Letter for Unit 4
ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Assessment: Unit 3 Assessment			

Resources	
Websites	www.connectED.mheducation.com www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm www.vlc.cemseprojects.org www.learnzillion.com
Books	*Teacher's Lesson Guide, Volume 1* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 3.1-3.12 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	http://financeintheclassroom.org/passport/third/math.shtml (Projects for 3rd grade financial literacy incorporating CCSS 3.OA.8, 3.NBT.2, 3.NBT.3, and 3.MD.3) https://learnzillion.com/lesson_plans/8417-understand-the-commutative-property-by-naming-arrays#fndtn-lesson (Communitive Property video) T*wo of Everything* by Lily Toy Hong (for Place Value reinforcement)

Unit 4 Plan	Measurement and Geography
Suggested Time Frame	18 days including “Flex Days”

Stage 1: Desired Results
Overview / Rationale
In this unit, children measure to the nearest half inch. Then they generate measurement data and represent it on a scaled line plot. After children explore geometric attributes of polygons and classify quadrilaterals into categories based on their attributes, they identify and measure the perimeters of polygons, and distinguish between perimeter and area. They develop multiple strategies to determine the areas of rectangles and extend those ideas to determine the areas of rectilinear shapes.

New Jersey Student Learning Standards for Mathematics
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. **3.NF.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **3.NF.2a** Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line. **3.MD.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **3.MD.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.G.1** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **3.MD.5** Recognize area as an attribute of plane figures; understand concepts of area measurement. **3.MD.5a** A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

3.MD.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.

3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

3.MD.7 Relate area to the operations of multiplication and addition.

3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – 21st Century Themes			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**		E	CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		TA	CRP2. Apply appropriate academic and technical skills.
X	Money Management		T	CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management		ETA	CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		ETA	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration		E	CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:
NJ Learning Standards for English Language Arts:
NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Essential Questions	Enduring Understandings
1. What types of problems are solved with measurement? 2. How do you find the perimeter of shapes? What shapes can you make when you know the perimeter? 3. How can plane and solid shapes be described? 4. How do you find area? **5.** How are geometric properties used to solve problems in everyday life?	*Students will understand that…* 1. Objects have distinct attributes that can be measured. 2. Different shapes can have the same perimeter. 3. The region inside a shape is its area and can be measured using square units. 4. Area can be found by adding the square units or by multiplying. Objects can be described and compared using their geometric attributes.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• How to measure lengths to the nearest half-inch and represent the data on a line plot where the horizontal scale is marked off in whole numbers and halves • That area is an attribute of plane figures • That shapes in different categories may share attributes • A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. • A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units. • that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories	• Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. • Recognize area as an attribute of plane figures and understand concepts of area measurement. • Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). • Relate area to the operations of multiplication and addition. • Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. • .

Stage 2: Acceptable Evidence

Assessments

Formative Assessment(s) and Evidence of Learning:

- Assessment Check-In
- Informal Observations
- Mental Math and Reflexes
- Math Journals
- Home Links
- Exit Slips / Slates Assessments
- Self-Assessments
- Games
- Questioning

Summative Assessment(s) and Performance Task(s):

- End of Unit Assessments
- Benchmark Assessments
- Tests
- Quizzes
- Student Work Products

Stage 3: Learning Plan

- **Lesson 4.1 (3.MD.4):** Measure line segments to the nearest inch and centimeter. Ask students to compare Ruler C with Rulers A and B from *Math Masters,* page TA30 and invite them to share what they notice. If no child mentions it, point out that Ruler C does not start with zero. Have children discuss whether you can use this ruler to measure.
- **Lesson 4.2 (3.MD.4):** Review prior knowledge of using data to create graphs and creating scales. Remind them that all the class data must be shown on the line plot. Use scaled line plots with fractions of inches.
- **Lesson 4.3 (3.MD.2, 3.MD.4, 3.MD.8, 3.NF.2a):** Students choose tools for measuring distances. Ask students to measure distances around the room to the nearest 12 inch increment. Then compare masses of objects to standard masses to determine benchmarks. Then scale back the length of measurement so that students determine the number of half inches of a given length or object.
- **Lesson 4.4 (3.G.1):** Represent triangles and quadrilaterals with equal side lengths and right angles. Provide each partnership with a geoboard and rubber bands. Describe polygons and have partners create them on their geoboards.
- **Lesson 4.5 (3.G.1):** Recognize and describe similarities between quadrilaterals. Use cut outs from the Quadrilateral Cutouts from Activity sheets 11-12 to compare any two quadrilaterals. These comparisons are used to spark class conversation and create ideas and rules for recognizing and distinguishing between quadrilaterals.

- **Lesson 4.6 (3.MD.4, 3.MD.8):** Measure side lengths of a rectangle to the nearest ½ inch and write numbers models for the perimeter. Discuss what attributes make a rectangle a rectangle and if all squares are rectangles.
- **Lesson 4.7 (3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7a, 3.MD.8):** Count unit squares to find the area and perimeter of a rectangle. Remind students that perimeter is the distance around the rectangle and the area is "where the grass grows," or the total number of blocks representing the entire rectangle.
- **Lesson 4.8 (3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7a):** Find the area of a rectangle using composite units. Ask students to define what a composite unit is based on their Math Journal page 120. Discuss how you can use composite units to make finding area simpler.
- **Lesson 4.9 (3.MD.5b, 3.MD.6, 3.MD.7a, 3.MD.7b):** Determine side lengths of a rectangle and write a number sentence for its area. Provide students with a simple example to hook them in to finding area using multiplication. Allow for student discussion of how they know that multiplying the length and width will provide them with the area of the given shape.
- **Lesson 4.10 (3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7b, 3.MD.8):** Calculate the area and perimeter of rectangles by playing the *Area and Perimeter Game.*
- **Lesson 4.11 (3.MD.7b, 3.MD.8): Day 1** Develop strategies for finding area and perimeter. First have students find the perimeter and area of two dog pens as part of a warm up. Students will then discuss strategies for finding the area and perimeter. Have students answer the open ended question on Math Masters pages 143-144- Solving an open ended question to build a rabbit pen.
- **Lesson 4.11 (3.MD.7b, 3.MD.8): Day 2** Draw at least two rectangular pens with different areas and a perimeter of 24 feet, and discuss strategies. Have students work in partnerships to review and revise their work using practiced partner talk. Again, this will look a lot like partner talk/peer review from Language Arts.
- **Lesson 4.12 (3.MD.5a, 3.MD.7b, 3.MD.7d, 3.OA.7, 3.OA.8):** Decompose rectilinear figures into rectangles and discuss real world applications or reasoning. Remind students that just like the pens from the previous lesson, you may have shapes that require decomposing in order to find the total area. Give examples like a bedroom, zoo cages, front lawns, and ask students to provide examples.

<table>
<tr><td colspan="3">Lesson: 4.1 Measuring with a Ruler</td><td>TE pages: 324-329</td></tr>
<tr><td colspan="4">Objective: SWL to measure to the nearest half-inch and centimeter.</td></tr>
<tr><td>Math Masters:
pages 118-120
TA 30</td><td>Activity Card: 51</td><td>Manipulatives:
● Tool kit tape measure,
● 6 or more 1-inch pattern blocks,
● centimeter cutes</td><td>Other Materials:
● 15-16 cm long pencils,
● small classroom objects-books,
● tissue boxes,
● erasers and crayons</td></tr>
<tr><td colspan="4">Vocabulary: approximate, precise</td></tr>
<tr><td colspan="4">3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Use helper facts to solve multiplication facts</td><td colspan="2">● Math Message:
Measure their pencils to the nearest inch and centimeter
● Examining Different Rulers
Discuss how to measure more precisely
MM TA30, toolkit ruler, toolkit tape measure, pencils and scissors
● Measuring to the Nearest ½ inch and Centimeter
Measure to the nearest ½ inch and centimeter.
MJ page 99 MM TA 30,
scissors
● Exploring Unusual Rulers
MM pg. 100
MM page TA30
● Spiral Snapshot
Measure lengths to the nearest ½ and ¼ inch or cm.</td><td>● Math Minute
Practice Mental Math Strategies
● Solving Length Number Stories
Solve 2-step number stories involving lengths
MJ pg-101 SRB page 30
● Math Boxes- 4.1
Math Journal pages 99-102
● Home Link: 4.1
MM pg120</td></tr>
<tr><td>ELL Support:
Use role play to introduce the term nearest, connecting it to near/nearer and contrasting it with far away.</td><td>Readiness:
Measuring Length
● Small classroom objects
● Six or more 1-inch square pattern blocks
● Centimeter cubes
● Ruler</td><td>Enrichment:
● Measuring with Different Rulers
● MM page118</td><td>Extra Practice:
● Measuring Length
● Activity Card 51
● Small classroom objects</td></tr>
<tr><td colspan="4">Assessment: MJ page 99, problems 1 & 2 –Check student's ability to measure to the ½ and ¼ inch or cm.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 4.2 Application: Line Plots</td><td>TE pages: 330-336</td></tr>
<tr><td colspan="4">Objective: SWL to generate measurement data and represent the data on a line plot.</td></tr>
<tr><td>Math Masters:
pages 121-123
TA 20</td><td>Activity Cards
52-53</td><td>Manipulatives:
Tool kit tape measurer and ruler</td><td>Other Materials:
● sticky notes,
● small classroom objects-books,
● tissue boxes,
● erasers and crayons</td></tr>
<tr><td colspan="4">Vocabulary: data, line plot, scale, maximum, minimum</td></tr>
<tr><td colspan="4">3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
To solve number stories using multiplication facts.</td><td colspan="2">● Math Message:
Measure their shoe lengths and display the data Sticky notes, measuring tools
● Organizing Measurement Data
Organize shoe-length data on a line plot
MJ page 103, MM page TA20
● Assessment Check In
● Ordering Gym Shoes
Discuss the data in a line plot MJ page 103
● Analyzing a Line Plot and Data
MM pg. 104</td><td>● Math Minute
Practice Mental Math Strategies
● Create a Pictograph
Create a pictograph using provided data
MJ pg-105
● Math Boxes- 4.2
Math Journal- pages 103-105
● Home Link: 4.2
MM pg123</td></tr>
<tr><td>ELL Support:
To help students understand different meaning of the word order, use visual aids and role play.</td><td>Readiness:
Plotting Plant Heights
MM page 121</td><td>Enrichment-
● Making a Line Plot of Hand Spans
● Activity card-52
● SRB page 196,
● paper,
● sticky notes,
● tape measure</td><td>Extra Practice-
● Making a Line Plot
● Activity Card 53
● SRB page 196
● MM page 122,
● small objects,
● ruler or tape measure</td></tr>
<tr><td colspan="4">Assessment: MJ page 99. Problems 1 & 2–Check student's ability to measure to the ½ and ¼ inch or cm</td></tr>
</table>

Lesson: 4.3 Exploring Measures of Distance and Comparisons of Mass			TE pages: 336-341
Objective: SWL to measure distances around objects to the nearest ½ inch, compare masses, and determine distances in half-inch increments.			
Math Masters: pages 124-126, TA30, G12	**Activity Cards 54-55**	**Manipulatives:** Toolkit tape measurer and ruler, Quick Look up cards 133, 139, 140, pattern block triangles, dice, pan balance, number cards 0-10 (4 of each & number cards 11-20	**Other Materials:** string objects of selected masses, colored pencils, scissors, bags, sticky notes
Vocabulary: mass, kilogram, benchmark			
3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. **3.OA.A.1** Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Look with equal groups and arrays ● Quick Look Cards 133, 139, 140	● **Math Message:** Measure distances around their heads and wrists, MM page 125, ● **Measuring Around Objects** Choose tools for measuring distances ● **Exploration A: Measuring Distances Around Objects** Measure distances to the nearest ½ inch MJ page 107, ● **Exploration B: Comparing Masses** Compare masses of objects to standard masses to determine benchmarks Activity Card 54, MJ page 108, ● **Exploration C: Traveling Along a Ruler** Activity Card 55, Determine the number of ½ inch pattern		● **Math Minute** Practice Mental Math Strategies ● **Game- Name That Number** Activity Card 55 SRB pages 249-250 MM page G12, number cards ● **Math Boxes 4.3** Journal pages 107-109 ● **Home Link**: 4.3 MM page 126 Measure perimeters to the nearest ½ inches
ELL Support: Label and display a yardstick, meter stick, ruler, and tape measure. Use Total Physical Response (TPR) prompts to model naming the different tools.	**Readiness: Counting Half Inches** ● MM page TA30	**Enrichment: Finding More Benchmarks**	**Extra Practice- Measuring Distances around Objects**
Assessment: Student Observation			

Lesson: 4.4 Polygon Review	TE pages: 342-347

Objective: SWL the characteristics of polygons.

Math Masters:	**Activity Cards** 56-57	**Manipulatives:**	**Other Materials:**
pages 127, TA 31-32, G6, G13-14		● Ruler, ● geoboard, ● rubber bands , ● die, ● number cards 1-10, (4 of each), ● straws	● Class Data Pad, ● paper, ● small bags, ● 2 dimensional poster for shapes, ● straightedge, ● scissors, ● twist ties, ● shape cards

Vocabulary: attributes, polygon, side, vertex, angle, right angle, parallel, quadrilateral

3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Solve related pairs of multiplication facts	● **Math Message:** Identify figures that are not polygons MJ page 110 ● **Reviewing Polygons** Compare and classify polygons based on number of sides ● **Introducing: What's My Rule?** Classify polygons based on other similarities and differences SRB page 262, MM page G13-14, Class Data Pad, rulers, ● **Representing Polygons** Represent polygons on geoboards, MM page TA31, ● **Spiral Snapshot-** Understand that shapes in different categories may share attributes that can define a larger category	● **Math Minute** Practice Mental Math Strategies ● **Game- Multiplication Draw** SRB page 248, MM page G6, ● **Math Boxes- 4.4** Journal pages 110-111 ● **Home Link: 4.4** MM 127

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Scaffold terms used in the lesson, such as curved, straight, line segment, vertex, connect, closed, open, and side by providing children with individual vocabulary cards showing each term and corresponding illustrations	**Identifying Parallel Lines** Straightedge	**Exploring Polygon Attributes** ● Activity card 56, ● MM TA 32,	**Constructing Polygons with Straws and Twists**

Assessment: page 346, shape cards (optional)

<table>
<tr><td colspan="3">Lesson: 4.5 Special Quadrilaterals</td><td>TE pages: 348-353</td></tr>
<tr><td colspan="4">Objective: SWL how to classify quadrilaterals</td></tr>
<tr><td>Math Masters:
page 128-129,
TA 33,
G6, G13-, G 15</td><td>Activity Cards: 58</td><td>Manipulatives:
Pattern blocks</td><td>Other Materials:
● Class Data Pad,
● Fact Triangles,
● Activity Sheets 11-12,
● Quadrilateral Cut outs</td></tr>
<tr><td colspan="4">Vocabulary: square, rectangle, parallelogram, trapezoid, quadrilateral, kite, rhombus</td></tr>
<tr><td colspan="4">3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve equal groups number stories
● slate</td><td colspan="2">● Math Message:
Sketch a variety of quadrilaterals MM TA33
● Introducing Subcategories of Quadrilaterals
Analyze similarities among quadrilaterals
SRB page 217
● Exploring Quadrilateral Relationships
Consider how special quadrilaterals relate
MJ page 112 Activity Sheets 11-12
● Applying Definitions of Special Quadrilaterals
Sketch Quadrilaterals that do not fit into any of the special Categories
● Spiral Snapshot-
Recognize specified subcategories of quadrilaterals</td><td>● Math Minute
Practice Mental Math Strategies
● Practicing Division Facts
Relate division to missing factor multiplication facts
● Game- Multiplication Draw
SRB page 248,
MM page G6,
die ,
number cards 1-10 (4 of each)
● Math Boxes- 4.5
Journal pages 112-113
● Home Link: 4.5
MM page 129</td></tr>
<tr><td>ELL Support:
To Scaffold terms, review the vocabulary cards prepared in the previous lesson. Add similar cards for angle, right angle, and parallel.</td><td>Readiness:
Reviewing Attributes of Shapes
Pattern Blocks</td><td>Enrichment:
● Exploring Quadrilaterals in Tangrams
● MM page 128,
● Grandfather Tang's Story by Ann Tampert</td><td>Extra Practice:
● Playing Shading Shapes
● Activity Card 58
● MM page G15</td></tr>
<tr><td colspan="4">Assessment: Page 351 (optional). MJ page 121. Observe if students can correctly identify the quadrilaterals they choose and to recognize and describe similarities between quadrilaterals such as rectangles and squares.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 4.6 Perimeter</td><td>TE pages: 354-359</td></tr>
<tr><td colspan="4">Objective: SWL to identify and measure perimeters of rectangles and other polygons.</td></tr>
<tr><td>Math Masters:
pages 130-132,
TA 30, TA 19</td><td>Activity Cards:</td><td>Manipulatives:
● Pattern blocks,
● measurement tools including toolkit ruler</td><td>Other Materials:
● small boxes,
● quadrilateral cutouts from lesson 4.5,
● opaque bags or boxes,
● small classroom objects</td></tr>
<tr><td colspan="4">Vocabulary: face, perimeter</td></tr>
<tr><td colspan="4">3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Find sums of four addends
● slate</td><td colspan="2">● Math Message:
Trace a face of a pattern block and discuss ways to measure the distance around pattern blocks
● Measuring Perimeters of Polygons
Measure polygon perimeters to the nearest ½ inch
MJ page 114,
pattern blocks,
measuring tools
● Investigating Perimeters of Rectangles
Small boxes, measurement tools
● Solving Perimeter Number Stories
Solve perimeter number stories
MJ pages 114-115,
SRB pages 174-175
● Spiral Snapshot
Solving involving perimeters of polygons</td><td>● Math Minute
Practice Mental Math Strategies
● Feeling Quadrilaterals
Identify quadrilaterals by touch
● Math Boxes- 4.6
Journal pages 114-116
● Home Link: 4.6
MM page 131-132</td></tr>
<tr><td>ELL Support:
Scaffold the term face as a body part and as a mathematical concept.</td><td>Readiness:
Measuring to the Nearest ½ Inch
● Toolkit ruler
● Small classroom objects</td><td>Enrichment-
Exploring Perimeters
MM page TA 19</td><td>Extra Practice-
Finding Perimeters of Polygons
MM page 130</td></tr>
<tr><td colspan="4">Assessment: page 358 (optional) Students correctly trace and measure the perimeter of the shapes.</td></tr>
</table>

Lesson: 4.7 Perimeter			TE pages: 360-367
Objective: SWL to distinguish between perimeter and area.			
Math Masters: page 133, TA19	**Activity Cards: 59**	**Manipulatives:** Pattern blocks, measurement tools including toolkit ruler, number cards 0-20, pattern blocks,	**Other Materials: s**late, 1 foot squares, Class Data Pad, various rectangular prisms
Vocabulary: perimeter, length, area, square unit			
3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.MD.D.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Figure out missing addends in number sentence ● slate	● **Math Message:** Determine the perimeter of a 1 foot square pattern ● **Finding the Perimeter of a 1 Foot Square** Share strategies for finding the perimeter Class Data Pad, 1 foot squares, toolkit rulers ● **Measuring Perimeter and Areas** Use squares to measure perimeter and area Class Data Pad, 1 foot squares and 1-yard square, Toolkit rules ● **Comparing Perimeter and Areas** Use squares to compare perimeter & area MJ page 117, Class Data Pad 1 foot squares and 1-yard square, ● **Assessment- See page 365** ● **Spiral Snapshot**- Understand that a unit square has 1 square unit of area and can measure area.		● **Math Minute** Practice Mental Math Strategies ● **Game- Name that Number** ● **SRB** pages 249-250 ● **Number cards** 0-20, number cards 0-10 ● **Math Boxes- 4.7** ● Journal pages 117-118 ● **Home Link**: **4.7** MM page 133
ELL Support: Model "Covering" exactly. Show one sticky not covering another and then swap them so students see that they are the same size and shape. Show a non-example, such as a book not covering a larger notebook.	**Readiness: Measuring Perimeter** ● Various rectangular prisms ● Ruler	**Enrichment-** ● Exploring Area ● MM page TA 19	**Extra Practice-** ● Reading About Area and Perimeters of Polygons, ● Activity Card 59, ● MM page TA 19
Assessment: page 365, MJ page 117 (optional), Students correctly Count unit squares to find the area of the rectangles in Problems 1-3			

Lesson: 4.8 Area and Composite Units			TE pages: 368-372
Objective: SWL to find the area of a rectangle by using composite units			
Math Masters: pages 134-137	**Activity Cards:**	**Manipulatives:** Tape measure	**Other Materials:** ● 1 foot squares, ● Class Data Pad, ● colored pencils
Vocabulary: area, composite units			

3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.C Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
3.MD.C.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.
3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Solve multiplication number stories ● slate	● **Math Message:** Sketch rectangles and find the area and perimeter MJ page 119 ● **Distinguishing Area and Perimeter** Share strategies for finding perimeter Class Data Pad, 1 foot squares, toolkit rulers ● **Measuring Perimeter and Areas** Compare finding area and perimeter of rectangles ● **Using Composite Units to Find Area** Use a composite unit to measure a large rectangle (1 foot square) Finding Areas of Rectangles Determine the areas of rectangles - MJ page 120 ● **Spiral Snapshot-** Measure areas by counting unit squares	● **Math Minute** Practice Mental Math Strategies ● **Measuring Body Parts** MJ page 121, tape measure ● **Math Boxes- 4.8** Math Journal- pages 119-121 ● **Home Link**: **4.8** MM page 137

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Use pictures or videos to provide students with visual examples of rows and columns. Reinforce student's understanding of the terms row and column by having them "air draw" rows from side to side and columns from top to bottom as they repeat the terms.	**Using Squares to Find Area and Perimeter** ● MM page 134 ● Colored pencils	**Exploring Area with Composite Units** MM page 135	**Measuring Area with Composite Units** MM page 136

Assessment: Page 372, MJ page 120 (optional).
Students correctly find the area of the rectangles in Problems 2-4

Lesson: 4.9 Number Sentences for Area of Rectangles	TE pages: 374-379

Objective: SWL to find areas of rectangles and write matching number sentences.

Math Masters:	**Activity Cards:**	**Manipulatives:**	**Other Materials:**
page 138-140, TA19, TA34, TA35	**60**	● Quick Look Cards 134, 136, 146, ● geoboard, ● rubber bands, number cards 6-20	● 1 foot squares, ● Class Data Pad, ● colored pencils

Vocabulary: area, array, perimeter

3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.C Understand concepts of area and relate area to multiplication and addition.
3.MD.C.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.
3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
3.OA.A.1 Interpret products of whole numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Looks with equal groups and arrays ● Quick Look Cards 134, 136, 146	● **Math Message:** Determine the area of a partially visible rectangle, MJ page 124 ● **Reviewing Strategies for Area** Share strategies for finding the area of a rectangle, MM page 139, MJ page 124 ● **Using Arrays to Find Area** Use what they know about arrays to find the areas of rectangles MJ page 124, MM page TA34 ● **Multiplying Side Lengths** Use side lengths measures to find the areas of rectangles, ½ sheet paper MJ page 125, MM TA34-35 ● **Spiral Snapshot-** Show that tiling a rectangle results in the same area as multiplying its side lengths	● **Math Minute** Practice Mental Math Strategies ● **Writing Equivalent Names** Complete Name collection boxes MJ page 123 ● **Math Boxes- 4.9** Journal pages 124-126 Preview for Unit 5 ● **Home Link**: **4.9** MM page 140

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Build on student's prior knowledge by using the term array to describe items they may have seen in everyday life. Have students describe the arrays by rows and columns.	**Modeling Area with a Geoboard** ● Geoboards ● Pennies ● Rubber bands	**Exploring Area with Composite Units-** ● number cards, ● tape ● Activity Card 60 ● MM page TA19	**Finding Areas of Rectangles** MM page 138

Assessment: page 378, MJ page 125 (optional). Students correctly find the area of the rectangles in Problems 2-4

Lesson: 4.10 Playing The Area and Perimeter Game	TE pages: 380-385

Objective: SWL to develop strategies for finding area and perimeter

Math Masters: pages 141-142, TA35, G16	**Activity Cards**	**Manipulatives:** ● square pattern blocks, ● inch ruler	**Other Materials:** ● perimeter and area T chart, ● fact triangles, ● rectangular prisms, ● read/blue crayons, ● scissors, ● ½ sheet of paper

Vocabulary: area, perimeter

3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.C Understand concepts of area and relate area to multiplication and to addition.
3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.
3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Solve number stories using division ● slate	● **Math Message:** Find the area and perimeter of a rectangle MJ page 127 ● **Introducing The Area and Perimeter Game** Discuss strategies for calculating area and perimeter and make sense of game cards MJ page 127, Activity Sheets, SRB pages 230-131, MM page G16, Perimeter /Area T chart ● **Playing The Area and Perimeter Game** Practice finding the area and perimeter of rectangles MJ, Activity Sheets 13-14, SRB pages 230-231, MM page G16 ● **Spiral Snapshot**- Solve problems involving perimeters of polygons	● **Math Minute** Practice Mental Math Strategies ● **Game- Playing The Area and Perimeter Game** Practice finding the area and perimeter of rectangles Activity Sheets 13-14, SRB pages 230-231, MM page G16 ● **Taking Inventory of Known Facts Part 2** Assess fact knowledge MJ page 142, Fact Triangles ● **Math Boxes- 4.10** Journal pages 127-128 ● **Home Link**: **4.10** MM page 140

ELL Support:	**Readiness:**	**Enrichment-**	●
Use Total Physical Response routines to rehearse shuffling and playing with cards to prepare for playing The Area and Perimeter Game. Introduce the meanings of essential phrases: *It is your turn. It is my turn. Who is next? You win!*	**Identifying Perimeter and Area** ● Various rectangular prisms ● Red and blue crayons	● Finding and Comparing Areas ● square pattern blocks, inch ruler ● MM page 141	**Extra Practice- Playing The Area and Perimeter Game** ● MJ page 1, Activity sheets 13-14, ● MM page G16, ● SRB page 230-231

Assessment: page 384, MM page G16 (optional). Students correctly calculate the areas and perimeters of the rectangles in Deck A. Use T chart if students struggle with concept

Lesson: 4.11 Building a Rabbit Pen ** 2 Day Lesson *******	TE pages: 386-395

Objective: SWL to

- Day 1 - Create and use models of a rabbit pen to solve a problem
- Day 2- Compare and Discuss their models and explanations and revise their work

Math Masters: pages 143-145, TA6, TA19, TA342	**Activity Cards:**	**Manipulatives:**	**Other Materials:** ● Day 1 work, ● chart paper, ● colored pencils, ● Standards poster. ● Guidelines for Discussion questions

Vocabulary: area, perimeter

3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
3.MD.C.7 Relate area to the operations of multiplication and addition.
3.MD.C.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Solve number stories using division ● slate	● **Math Message:** Find the area and perimeter of two dog pens, MJ page 129 ● **Calculating Perimeters and Area** Discuss strategies for calculating the perimeters and the areas of the pens. MJ page 129, SRB pgs-174-177 ● **Solving the Open Response Problem** Draw at least 2 rectangles with a fixed perimeter and different areas, and choose one for ta rabbit pen MM page 143-144, TA19 ● **Spiral Snapshots** Exhibit rectangles with the same perimeter and different areas or the same area and different perimeters.	● **Math Minute** Practice Mental Math Strategies ● **Math Boxes- 4.11** Math Journal- page 130 ● **Home Link**: **4.11** MM page 145

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**

Assessment: page 392 (See rubric). Students will draw at least 2 rectangles pens with perimeter of 24 feet but different areas.

<table>
<tr><td colspan="3">Lesson: 4.12 Rectilinear Figures</td><td>TE pages: 396- 401</td></tr>
<tr><td colspan="4">Objective: SWL to find areas of rectilinear figures.</td></tr>
<tr><td>Math Masters: page 146-148, TA20, TA22, TA34</td><td>Activity Cards</td><td>Manipulatives:
Quick Look Cards-138,144,145</td><td>Other Materials:
scissors and tape</td></tr>
<tr><td colspan="4">Vocabulary: decompose, rectilinear figure, polygon</td></tr>
<tr><td colspan="4">3.MD.C.7 Relate area to the operations of multiplication and addition.
3.MD.C.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning
3.MD.C Understand concepts of area and relate area to multiplication and to addition.
3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.
3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Practice Quick Look with equal groups and arrays
● Quick Look Cards-138,144,145</td><td colspan="2">● Math Message:
Discuss ways to find the area of a rectilinear figure
● Finding Areas of Rectilinear Figures
Find the areas of rectilinear figures MM page TA34
● Finding Areas of Rectilinear Figures
Discuss real-world examples o rectilinear figures and find their areas. MJ pg-131,
SRB pages 180-181,
MM page TA20
● Spiral Snapshot-
Recognize area as additive</td><td>● Math Minute
Practice Mental Math Strategies
● Math Boxes- 4.12
Math Journal- page 132
● Home Link: 4.12
MM page 148</td></tr>
<tr><td colspan="2">ELL Support:
To scaffold the term partition, help students relate it to the word part. Drop an assortment of objects into a box.
Role-play sorting the objects by a category, such as color. Think aloud as you make partitions out of cardboard or paper to separate the objects.</td><td>Readiness: Dividing Polygons into Rectangles
MM page 146</td><td>Enrichment- Decomposing Same Size Rectilinear Figures
MM page 147</td><td>Extra Practice- Finding Areas of Rectilinear Figures
MJ page TA22
Activity Card 61
Scissors, tape</td></tr>
<tr><td colspan="4">Assessment: See page 400, MJ page 131 (optional). Students correctly calculate the areas and perimeters of the rectangles in Deck A. Use T chart if students struggle with concept</td></tr>
</table>

Lesson: 4-13 Unit 4 Progress Check ****2 Days**	TE pages: 402-409

Objective: SWL through
- Day 1 –the Unit Assessments
- Day 2 - the Open Response Assessments

Math Masters:	**Activity Cards :**	**Manipulatives:**
page 114-117		Rulers- inch/centimeter

3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.B.5 Apply properties of operations as strategies to multiply and divide.
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.MD.C.7 Relate area to the operations of multiplication and addition.
3.MD.C.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning
3.MD.C Understand concepts of area and relate area to multiplication and to addition.
3.MD.C.5 Recognize area as an attribute of plane figures; understand concepts of area measurement.
3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
3.MD.C.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
3.OA.A.1 Interpret products of whole numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Complete Student Self-Assessment	**Day 1 Student Assessment** **Assessment Book page 33** To demonstrate their progress on the Common Core State Standards covered in this unit **Day 2 Assessment book pages 34-38** Student Open Response Assessment Students will demonstrate their understanding of Unit 3 concepts through written responses. Discuss open responses.	• **Math Boxes-** MJ page 133 • **Home Link: 4.13** Family Letter for Unit 5 Pages 149-152

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**

Assessment: Unit 3 Assessment, **Assessment Handbook**-33-38

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 2* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 4.1-4.13 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	*Spaghetti and Meatballs for All!* by Marilyn Burns *How Long or How Wide? A Measuring Guide* by Brian Cleary and Brian Gable

Unit 5 Plan	Fractions and Multiplication Strategies
Suggested Time Frame	18 days including "Flex Days"

Stage 1: Desired Results
Overview / Rationale
In this unit, children relate their part-whole understanding of fractions to visual and symbolic representations, including standard notation, and begin to explore fraction equivalence. They also develop multiplication fact strategies by working from their understanding of multiplication and known facts to find unfamiliar products by using arrays, area models, and properties of multiplication.

New Jersey Student Learning Standards for Mathematics
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.5** Apply properties of operations as strategies to multiply and divide. **3.OA.6** Understand division as an unknown-factor problem. **NJSLS 3 OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.9** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **NJSLS 3. NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.MD.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. **3.MD.7a** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. **3.MD.7b** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	Enduring Understandings
1. How do equivalent fractions make problems easier to solve? 2. Why are unit fractions so important? 3. When might I use fractions in real life? Why is the size of the whole in fractions important? 4. How can multiplication be used to solve real world problems? **5.** How can finding patterns help you learn basic multiplication facts?	*Students will understand that…* 1. Fractions can be used to solve problems that cannot be solved with whole numbers. 2. Understanding unit fractions aides in developing understanding of other rational numbers. 3. Any rational number can be expressed as a fraction in an infinite number of ways. 4. Multiplication is the combining of equal groups. 5. Patterns are used when multiplying.

Student Learning Targets / Objectives

Students will know...	***Students will be able to…***
• That the size of a fractional part changes with the size of the whole. • That fractions can be represented using standard notation, words, numbers, and drawings. • The importance of using the same whole when comparing fractions • That known multiplication facts (helper facts) to solve unknown multiplication facts. • That doubling can be used as a multiplication facts strategy.	• Recognize equivalent fractions • Interpret products of whole numbers. • Interpret whole-number quotients of whole numbers. • Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. • Break apart a factor as a multiplication facts strategy. • Identify and explain patterns in multiplication products. • Apply properties of operations as strategies to multiply and divide. • Execute division as an unknown-factor problem. • Determine the unknown whole number in a multiplication or division equation relating three whole numbers. • Generate measurement data by measuring lengths using rulers mad with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. • Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. • Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and. • Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**			CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		X	CRP2. Apply appropriate academic and technical skills.
X	Money Management			CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management			CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
X	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration			CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:

NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessment(s) and Evidence of Learning: • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips / Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessment(s) and Performance Task(s):** • End of Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products •

Stage 3: Learning Plan

- **Lesson 5.1 (3.G.2, 3.NF.1, 3.MD.6, 3.MD.8):** Represent fractions as equal parts of different wholes, and find all shapes with a given area. This lesson is an introduction into fractions allowing students to understand equal parts.
- **Lesson 5.2 (3.NF.1):** Represent fractions using standard notation, words, and drawings. Display the Representing Fractions chart to help students connect fractions to words and standard notation. Provide students with a copy of this for their notebook. Discuss representations for halves and fourths, and have children show 1-half and 1-fourth using their fraction circle pieces as you shade in the circle for each on the poster.
- **Lesson 5.3 (3.NF.3a, 3.NF.3b):** Recognize equivalent fractions using a visual fraction model. Using the fraction circles have students use two fourths to cover up one half and so on, this allows students to make the equivalent fraction connection. Allow them to explore sixths and thirds, eights and halves, and so on.
- **Lesson 5.4 (3.OA.1, 3.OA.4, 3.OA.5, 3.OA.7):** Use known multiplication facts, called helper facts, to solve harder multiplication facts. Encourage students to refer to their shaded Multiplication Facts Chart on journal page 160 to identify helper facts for Problems 2 and 3. Once solved, ask students to share their solutions and explain the connections they made between helper facts. Refer back to the "turn around rule" also known as the commutative property of multiplication.
- **Lesson 5.5 (3.OA.5, 3.OA.7, 3.OA.9, 3.MD.7a, 3.MD.7b, 3.MD.7c, 3.MD.7d): Part 1** Explore the use of doubling to solve number stories involving area. Discuss with students the advantages to the area of something doubling (gym space, parking lots, and bedrooms). Students will apply this conversation by completing Math Journal pages 164-165, have students work in small groups so that the teacher can circulate to check for understanding.
- **Lesson 5.6 (3.OA.7, 3.MD.7b, 3.MD.7c, 3.MD.7d): Part 2** Use the doubling strategy to solve multiplication facts. Remind students of the strategies they developed the previous day. Discuss helper facts and how to use them to double. Students then complete number stories using their knowledge of helper facts. Some students may still struggle and will need the reminder of what the original help fact is, and what number should be doubled to make the answer correct.

- **Lesson 5.7 (3.OA.7, 3.OA.9):** Identify and explain arithmetic patterns using properties of operations. Students will need to use a number grid poster to draw and color patterns of 5 and 10 before they can recognize patterns of 9.
- **Lesson 5.8 (3.OA.4, 3.OA.7, 3.OA.9):** Play Salute! To find missing factors. Model a few rounds for students to see the progression of the game and any mistakes that could be made while playing.
- **Lesson 5.9 (3.OA.5, 3.OA.7, 3.OA.9):** Use square products to find products of near squares or recognizing missing addends. Review what a square number is. Model shading the multiplication squares with one color on a new copy of the Multiplication Facts Chart (*Math Masters,* page TA36) and invite children to do the same on journal page 180. Discuss the patterns of finding factors that create squares.
- **Lesson 5.10 (3.OA.2, 3.OA.3, 3.OA.8): Day 1** Make sense of and solve a number story. Button Dolls Solving a Number Story: Open Response. Analyze a problem involving equal shares by first discussion the problem and possibilities to strategies solving it.
- **Lesson 5.10 (3.OA.3, 3.OA.8): Day 2** Compare solutions and explanations and revise their work. Button Dolls Solving a Number Story: Open Response.
- **Lesson 5.11 (3.OA.3, 3.OA.5, 3.OA.7, 3.MD.7b, 3.MD.7c, 3.MD.7d):** Decompose factors to solve multiplication facts. Explain to students that they will practice using arrays and rectangular area models to illustrate **break-apart** strategies. Discuss finding ways to represent ways to **decompose,** or break apart, use the multiplication fact 7×6 as an example to break two smaller facts that might be easier to solve. Apply this concept to finding the area of single digit by single digit rectangles and squares.

Lesson: 5-1 : <u>Exploring Equal Parts, Fractions of Different Wholes, and Area</u>			TE pages: 444-449
Objective: SWL to represent fractions as equal parts of different wholes, and find all shapes with a given area.			
Math Masters: page 100; 153–156; TA22 (4 copies per partnership)	**Activity Cards:** 62–63	**Manipulatives:**	**Other Materials:** ● slate (optional), ● straightedge, ● scissors, ● tape (optional)
Vocabulary: Whole, fractions, equal parts			
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a part of size 1/b. **3.MD.6** Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units). **3.MD.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.G.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Find Perimeters and areas of rectangles ● slate	● **Math Message:** Solve a problem about equal parts MJ2 page 150 fraction circles ● **Reviewing Fractions as Equal Parts** Review fractions as equal parts of a whole MJ2 page 150 ● **Exploration A: Showing Equal Parts** Explore equal parts of different wholes Activity Card -62 MJ 2 page 151, fraction circles ● **Exploration B: Finding All Possible Shapes** Explore different shapes with the same area and then find the perimeter AC-63, MM page TA22, Pattern blocks squares, straightedge scissors, tape ● **Exploration C: Exploring Wholes** Explore fractions of different wholes MJ2 page 152-153, Fraction Circles		● **Math Minute-** Practice mental math strategies. ● **Game-Rolling and Recording Squares** Record products of Multiplication squares *Assessment Handbook:* page 139 (optional) MM page 100, number cards 2-10 (4 of each) ● **Math Boxes-** *Math Journal 2:* page 149–153 ● **Home Link:** MM page 156
ELL Support: Scaffold to differentiate between the homophones whole and hole. Display both terms in writing along with illustrations and point out the different spellings.	**Readiness: Exploring Fractions** MM page 153	**Enrichment- Completing the whole** MM page 154, centimeter cubes	**Extra Practice- Partitioning Halves of Different Wholes** MM page 155
Assessment:			

Lesson: 5-2 : <u>Representing Fractions</u>	TE pages: 450-458
Objective: SWL to represent fractions using standard notation, words, and drawings.	

<table>
<tr><td>Math Masters:
● page 154–155,
● Activity Sheets 16–18</td><td>Activity Card:</td><td>Manipulatives:
fraction circles</td><td colspan="2">Other Materials
● Slate,
● Representing Fractions chart,
● Math Journal 2: Activity Sheets 16–18 (fraction cards),
● scissors,
● paper clip,
● envelope or bag (optional),
● Literature Link: Eating Fractions by Bruce McMillan (optional)</td></tr>
<tr><td colspan="5">Vocabulary: unit fraction, numerator, denominator</td></tr>
<tr><td colspan="5">3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a part of size 1/b.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td colspan="2">3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve multiplication facts and look for patterns</td><td colspan="2">● Math Message:
Represent one-third with fraction circle pieces
● Representing 1-third
Discuss different ways to represent one-third
MJ2 page 150
● Representing Fractions
Represent Fractions in different ways
MJ 2 page 154,
fraction circles,
fraction chart
● Exploring Numerators and Denominators
Explore the numerator/denominator relationship
MJ2. page 154,
fractions Circles</td><td colspan="2">● Math Minute-
Practice mental math strategies.
● Game-Preparing Fraction Cards
Cut out and examine fraction cards
MJ2 Activity Sheet 16-18,
Scissors, paper clip, envelope or bag
● Math Boxes-
MJ2: pages 154–155,
Activity Sheets 16–18
● Home Link:
MM page 159</td></tr>
<tr><td>ELL Support:
The –th sound may be new for many ELLs. Scaffold for students to hear the difference between fractions. Start with fourths and the corresponding whole numbers by modeling and having students repeat word pairs as you display the corresponding numbers with their words written below.</td><td>Readiness: Recognizing Fractions in Literature
● Literature Link: Eating Fractions by Bruce McMillan, fraction circles
● MM page 153</td><td>Enrichment: Comparing Fractional Amounts
MM page 157</td><td colspan="2">Extra Practice: Exploring Numerators/Denominators
MM page 158</td></tr>
<tr><td colspan="5">Assessment: Page 455, MJ2 page 154, Observe if students can represent fractions using pictures and words for Problems 2-4</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson: 5-3: Equivalent Fractions</td><td>TE pages: 450-458</td></tr>
<tr><td colspan="4">Objective: SWL to recognize equivalent fractions using a visual fraction model.</td></tr>
<tr><td>Math Masters:
page 160;
TA20 (optional); TA28</td><td>Activity Card:</td><td>Manipulatives:
fraction circles</td><td>Other Materials
fraction cards from Lesson 5-2</td></tr>
<tr><td colspan="4">Vocabulary: unit fraction, numerator, denominator</td></tr>
<tr><td colspan="4">3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a part of size 1/b.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Count unit fractions to 1</td><td colspan="2">● Math Message:
Find fractions of different size wholes
MJ2 page 156
● Recognizing Equivalent Fractions
Generate equivalent fraction names for one-half
MJ2 page 156, fraction circles
● Exploring Equivalent Fractions
Generate equivalent fractions
MJ 2 page 157,
fraction circles
● Introducing Fraction Memory
Practice recognizing equivalent fractions
MJ2 Page 154,
fractions cards from 5.2,
SRB pages. 243- 244,</td><td>● Math Minute-
Practice mental math strategies.
● Game-Finding Areas of Rectangles
Find the areas of rectangles
MJ2 pages 158
Scissors, paper clip, envelope or bag
● Math Boxes-
Math Journal 2: pages 156–159,
Activity Sheets 19–21 (optional)
● Home Link:
MM page 160</td></tr>
<tr><td>ELL Support:
Scaffold the term equivalent as different representations of the same amount. Display two equivalent sets of items, such as five centimeter cubes in a tower and five individual cubes.</td><td>Readiness:
Completing Name Collection Boxes
MM page TA28</td><td>Enrichment:
Looking for Patterns in Fractions
MM page 157</td><td>Extra Practice:
Playing Fraction Memory
● Practice recognizing equivalent fractions
● MJ2 Activity Sheets 16-21
● SRB page 243, fraction cards, fraction circles</td></tr>
<tr><td colspan="4">Assessment: Page 462, MJ2 page 157. Observe if students can represent fractions using pictures and words for Problems 2-4</td></tr>
</table>

Lesson 5-4 : Recognizing Helper Facts	TE pages: 464-469

Objective: SWL to use known multiplication facts, called helper facts, to solve harder multiplication facts.

Math Masters:	**Activity Card:**	**Manipulatives:**	**Other Materials**
Pages 161–162; TA36; G6	64	● Quick Look Cards: 138, 142, 143, ● number cards 1–10 (4 of each), ● die labeled with 2, 2, 5, 5, 10, 10 (see Lesson 1-10)	● colored pencils, ● Fact Triangles, ● Fact Strategy Wall, ● slate (optional)

Vocabulary: subtract a group, add a group, helper facts

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Look Cards with equal groups and arrays ● Quick Look Cards: 138, 142, 143	● **Math Message:** Show two ways to solve 9 x 6 MJ2 pages 135-140, Fact Strategy Wall ● **Solving Multiplication Facts** Begin to recognize helper facts - MJ2 page 156, fraction circles ● **Identifying Helper Facts** Match groups of helper facts to groups of unknown facts MJ 2 pages 160, 298-299, Fact Strategy Wall ● **Applying Adding and Subtracting a Group** Apply strategies to solve unknown facts ● MJ2. Page 160-161,	● **Math Minute** Practice mental math strategies. ● **Game-Solving Two Step Number Stories** Solve number stories and write number models *MJ2 pages 162* ● **Math Boxes-** *Math Journal 1:* pages 135–140 (optional) *Math Journal 2:* pages 160–163 and 298–299 ● **Home Link:** MM page 162

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Build on familiar helping tools to scaffold the term helper facts.	**Play Multiplication Draw** ● SRB page 248, ● MM page G6, ● number cards 1–10 (4 of each), ● die labeled with 2, 2, 5, 5, 10, 10 (see Lesson 1-10)	**Calculating the Number of Mosaic Tiles** MM page 161	**Identifying Helper Facts** ● Practice recognizing equivalent fractions ● Activity Sheets Card- 64 ● Fact Triangles

Assessment: Page 468. MJ2 page 161. Observe if students add a group to a given helper fact to successfully complete Problem 1 on journal page 161

Lesson 5-5: Multiplication Facts Strategies: Doubling, Part 1			TE pages: 470-478
Objective: SWL to explore the use of doubling to solve number stories involving area.			
Math Masters: pp. 161–162; TA36; G6	**Activity Cards:**	**Manipulatives:** per partnership: 50 centimeter cubes, toolkit ruler	**Other Materials:** ● Slate ● two 2-by-7 inch rectangles ● one 4-by-7 inch rectangle ● Class Data Pad, tape, scissors
Vocabulary: doubling			

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **3.MD.7a** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Use helper facts to solve unknown facts ● slate	● **Math Message:** Solve a number story involving doubling MM page TA19, per partnership: 50 centimeter cubes ● **Introducing Doubling** Share and discuss representations of doubling ● **Exploring Doubling** Explore doubling using a rectangular area model - rectangles, class data pad, slate ● **Practicing Doubling** Practice doubling to find the areas of rectangles MJ2. Pages 160-161	● **Math Minute** Practice mental math strategies. ● **Reading a Scaled Bar Graph** Solve a scaled bar graph problem *MJ2 page 167* ● **Math Boxes** *Math Journal 2:* pages 164–167 ● **Home Link:** MM page 167

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Scaffold the term double as two of the same objects or sets. Think aloud to describe familiar objects as doubles, such as double sixes on dice, double doors, or double-decker buses.	**Finding the Areas of Rectangles** MM page 163, ruler	**Exploring Factor Patterns** MM page 164	**Doubling the Area of a Rectangle** MM pages 165-166, toolkit, tape, scissors

Assessment: Page 475. MJ2 pages 164-165.

Lesson 5-6: Multiplication Facts Strategies: Doubling, Part 2			TE pages: 478-486
Objective: SWL to explore the use of doubling to solve number stories involving area.			
Math Masters:	**Activity Cards:**	**Manipulatives:** ● counters (optional),	**Other Materials:**

Pages 168–172; TA36		• ruler	• Slate, grid paper (optional), scissors, • *Math Journal 1:* My Multiplication Facts Strategy Log 1–6, • *Math Masters:* page TA36 (see Lesson 5-4), • Fact Strategy Wall

Vocabulary: doubling

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division.
3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: • Solve facts and record fact families • slates	• **Math Message:** Identify doubling relationships between numbers MM page 168 • **Doubling to Solve Unknown Facts** Share and discuss representations of doubling MJ2 pg. 168, counters, grid paper • **Doubling More Than One Way** Use doubling to solve an area number story MJ2 pg. 169 • **Recognizing When Doubling Is Useful** Consider when it's appropriate to use the doubling strategy MJ2. Pages 160 & 295, MM TA36, Fact Strategy Wall	• **Math Minute-** Practice mental math strategies. • **Creating a Bar Graph** Create a bar graph and use it to solve problems MJ2 pgs. 170-171 • **Math Boxes** *Math Journal 2:* pages 160; 168–172; 295 • **Home Link:** MM page 172

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Reinforce student understanding of the term double as a noun and a verb using role play.	**Finding the Areas of Rectangle by dividing It** MM page 168	**Solve an Allowance Problem** MM page 169	**Cutting a Rectangle in Half to find Area** MM pages 170-171, ruler, scissors

Assessment: Page 482. MJ2 page 169. Observe if students use the doubling strategy in one way to solve Problem 5. More than one way can be utilized.

Lesson 5-7: <u>Patterns in Products</u>			TE pages: 484-489
Objective: SWL to identify and explain arithmetic patterns using properties of operations.			
Math Masters: Pages 173–174; TA3; TA24; TA26	**Activity Cards:** 65	**Manipulatives:** • toolkit clock, • fraction circles	**Other Materials:** • prepared Number-Grid Poster (see Lesson 5-7 Before You Begin),

<table>
<tr><td></td><td></td><td></td><td>● crayons or colored pencils
● Fact Strategy Wall</td></tr>
<tr><td colspan="4">Vocabulary: Multiples, even, odd</td></tr>
<tr><td colspan="4">3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Count fractions and note equivalent fractions
● slate</td><td colspan="2">● Math Message:
Determine values on a number grid
Prepared Number Grid Poster
● Understanding the Number Grid
Share and discuss number grid patterns
MJ2 page 173
Prepared Number Grid Poster
● Discovering patterns in Multiples of 5s and 9s
Look for patterns in 5s, and 9s products
MJ2 pages 173-174,
MM page TA3,
Number Grid poster,
colored pencils, Fact Strategy Wall
● Discovering Patterns in Even and Odd Products
Consider patterns in even/odd products
MJ2. Page 175,
SRB page 175,
MM page TA26</td><td>● Math Minute-
Practice mental math strategies.
● Finding Clock Fractions
Connect clocks with fraction circle pieces
MJ2 pgs. 176,
toolkit clock,
fraction circles
● Math Boxes-
Math Journal 2: pages 173–177
● Home Link:
MM page 174</td></tr>
<tr><td>ELL Support:
To scaffold the term pattern, prepare a T-chart titled Patterns, with the headings Examples and Non-Examples. Place simple patterns and non-patterns of pattern blocks, classroom objects, or numbers in the appropriate columns.</td><td>Readiness:
Finding Patterns on a Number Grid
MM page TA3,
colored pencils and/or crayons</td><td>Enrichment-
Exploring a Pattern
MM page 173,
SRB pages 56/71</td><td>Extra Practice-
Finding More Patterns on the Number Grid
MM page TA3,
Activity Card-65,
colored pencils and/or crayons</td></tr>
<tr><td colspan="4">Assessment: Page 488. MJ2 page 175. Observe if students record multiplication facts to match the specified categories in the chart and to recognize whether the products are even or odd in Problems 1-3</td></tr>
</table>

Lesson 5-8 : Finding Missing Factors			TE pages: 490-496
Objective: SWL to play *Salute!* to find missing factors.			
Math Masters: ● Pages 100; 175–176 ● *Assessment Handbook:* pages 139 and 142 (optional)	**Activity Cards:** 66-67	**Manipulatives:** ● per group: number cards 1–6, 10 (4 of each), ● per group: number cards 7–9 (4 of each) (optional), 10-sided die	**Other Materials:** ● Slate, ● Fact Triangles, Class Data Pad, ● Fact Strategy Wall, ● My Multiplication Facts Strategy Logs
Vocabulary: Product, factor, missing factor			
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **NJSLS 3 OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.9** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Use multiplication facts to solve division facts ● slate	● **Math Message:** Solve a number story involving a missing factor ● **Finding Missing Factors** Discuss how multiplication/division are related with Fact Triangles ● **Finding Missing Factors with Fact Triangles** Practice division with Fact Triangles ● **Introducing and Playing Salute!** ● Find missing factors and products ● SRB page 255, ● number cards 1-10 (4 per group)		● **Math Minute-** Practice mental math strategies. ● **Rolling and Recording Squares** Record square products MJ2 page 100, 10-sided die ● **Math Boxes** *Math Journal 2:* pages 173–177 ● **Home Link:** MM page 176
ELL Support: Scaffold the word missing by showing and contrasting two nearly identical collections of objects, where one collection is missing one or more items. Have students first look at the complete collection of objects. Then point to an object in the full collection that is missing from the incomplete collection.	**Readiness:** **Using Multiplication to Solve Division Problems** Fact Triangles, slate	**Enrichment-** **Extending Fact Families** MM page 175, Fact Triangles, Activity Card-66	**Extra Practice-** **Sorting Fact Triangles** Activity Card-67 My Multiplication Facts Strategy Logs
Assessment: Page 494. Observe if students successfully figure out missing factors or products for 2s, 5s, and square facts.			

Lesson 5-9: Multiplication Facts Strategies: Near Squares	TE pages: 496-500
Objective: SWL to use square products to find products of near squares.	

Math Masters:	**Activity Cards:**	**Manipulatives:**	**Other Materials:**
Pages 100; 177; TA19; TA20 (optional); TA36	46; 68–69	● Quick Look Cards: 133, 146, 148, ● 10-sided die	● Slate, ● Fact Strategy Wall, ● large poster paper, ● crayons or colored pencils

Vocabulary: near, squares

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Looks with equal groups and arrays ● Quick Look Cards: 133, 146, 148	● **Math Message:** Solve 8 x 7 using a square product ● **Using Squares as Helper Facts** Solve near-squares facts ● **Identifying Squares and Near Squares** Identify and Solve Near-Squares Facts MJ2 pages 180-181, MM pages TA20, TA36 colored pencils Fact Strategy Wall	● **Math Minute-** Practice mental math strategies. ● **Using Expand and Trade Subtraction** Subtract using expand and trade subtraction MJ2 page 182 ● **Math Boxes-** *Math Journal 2:* pages 179–182; 296 ● **Home Link:** MM page 177

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Scaffold the term near. Have two children stand next to each other. Point to numbers next to each other on a number line. Have students identify item in the room which are near to each other.	**Rolling and Recording Squares** Record square products MJ2 pgs. 100, 10-sided die	**Making Near Squares Strategy Posters** Large poster paper, crayons/colored pencils Activity Card-68	**Sketching Square and Near Square Arrays** Activity Card-69, MM pages T19, TA36

Assessment: Page 500. MJ2 page 181. Observe if students record appropriate multiplication squares to use as helper facts for Problems 1-3.

<table>
<tr><td colspan="3">Lesson 5-10: Open Response – Button Dolls: Solving a Number Story</td><td>TE pages: 500-511</td></tr>
<tr><td colspan="4">Objective:
● Day 1: Children make sense of and solve a number story.
Day 2: Children learn compare solutions and explanations and revise their work.</td></tr>
<tr><td>Math Masters:
Pages TA6; 178–179; TA42 (optional)</td><td>Activity Cards:</td><td>Manipulatives: counters</td><td>Other Materials:
● colored pencils or markers
● Standards for Mathematical Practice Poster
● Guidelines for Discussions Poster,
● Student work from Day 1</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.2 Interpret whole-number quotients of whole numbers.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:

Use helper facts to solve other facts

slate</td><td colspan="2">Math Message:
Analyze a problem involving equal shares
MJ2 page 183
Making Sense of a Problems
Discuss the problem and strategies
MJ2 page 183
Solving the Open Response Problem
Make sense of and solve a problem involving multiples and equal groups
MM page 178-179,
colored pencils or markers
Setting Expectations
Review the open response problem and discuss what should be included in a good response
Standards for Mathematical Practice Poster,
Guidelines for Discussions Poster
Reengaging in the Problem
Discuss how other children used words and pictures to show their solution strategies
MM page TA42
Work samples
Revising Work-
Revise work from Day 1</td><td>Math Minute-
Practice mental math strategies.
Math Boxes-
Math Journal 2: pages 183-184
Home Link:
MM page 180</td></tr>
<tr><td colspan="2">ELL Support:</td><td>Readiness:</td><td>Enrichment:</td><td>Extra Practice:</td></tr>
<tr><td colspan="4">Assessment: Page 510. Collect and review children's revised work. Review to see if students have improved their work based on the class discussions. Use Rubric on page 508</td></tr>
</table>

Lesson 5-11: Multiplication Facts Strategies: Break-Apart Strategy	TE pages: 512-517

Objective: SWL to decompose factors to solve multiplication facts.

Math Masters:	**Activity Cards:**	**Manipulatives:**	**Other Materials:**

Pages 181–184; 141	70	● Quick Look Cards: 149, 150, 151,
		● square pattern blocks,
		● per partnership: 50 centimeter cubes
			● Fact Strategy Wall,
			● *Math Journal 1:*
			  ● Activity Sheets 13–14 (*The Area and Perimeter Game* Action Deck and Deck A),
			  ● Activity Sheet 15 (Deck B) (optional),
			● Scissors, glue or tape, slate and marker (optional)

Vocabulary: Decompose, break apart

3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Practice Quick Looks with equal groups and arrays ● Quick Look Cards: 149, 150, 151	● **Math Message:** Think of different ways to break apart an array MJ2 page 185, per partnership: 50 centimeter cubes ● **Decomposing a Fact** Find different ways to break a fact into two facts MJ2 Page 185 ● **Breaking Apart Factors to Solve Facts** Break apart larger facts in an area context MJ2 pages 186 & 297 Strategy Wall	● **Math Minute-** Practice mental math strategies. ● **Playing The Area and Perimeter Game** Find the areas and perimeters of rectangles SRB pages 230-231, MM page G16, The Area and Perimeter Game Action Deck and Deck B, Facts Strategy Log ● **Math Boxes-** *MJ 2:* pages 185–187; 297 ● **Home Link:** MM page 184

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Think aloud using visual aids to explain the term break apart. Show items that can be broken apart, but easily put back together.	**Decomposing a Rectangle** square pattern blocks	**Extending Break Apart Strategy** MM page 181	**Matching facts to Strategies** ● Activity Card-70, ● MM pages 182-183, ● scissors, glue or tape, slate and marker

Assessment: Page 516. MJ2 page 186. Observe how students solve Problem 2. Check if students decompose one of the factors into two addends.

Lesson 5-12: Progress Check Unit 5	TE pages: 518-525

Objective:

- **Day 1** – Administer the Unit 5 Assessment
- **Day 2** - Administer the Open Response Assessment

Math Masters:	**Activity Cards:**	**Manipulatives:**	**Other Materials:**
● pp. 185–188 ● Day 1- Assessment Handbook: pages 44–50 ● Day 2- Assessment Handbook: pages 51–52; pages A28–A29		● counters ● fraction circles	Standards for Mathematical Practice Poster (optional)

Vocabulary:

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.
3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: slate	**Day 1 Warm Up-** ● Student Self- Assessment ● Assess: Complete Unit 5 Assessment ● Check Differentiation Section for Adjusting Assessment **Day 2- Open Response Assessment** ● Assess: Complete Cumulative Assessment	● **Math Minute:** ● **Math Boxes:** ● **Home Link:** Unit 6 Letter to Parents

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**

Assessment: Unit 5 Assessment - Evaluated Children's Work Samples

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 1* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 5.1-5.12 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	https://www.youtube.com/watch?v=DnFrOetuUKg (Introducing Fractions and Equal Parts) *The Doorbell Rang* by Pat Hutchins *Full House* by Dayle Ann Dodds *Funny and Fabulous Fraction Stories* by Dan Greenberg

Unit 6 Plan	More Operations
Suggested Time Frame	23 days including "Flex Days"

Stage 1: Desired Results
Overview / Rationale
In this unit, children apply multiplication facts strategies with a focus on using strategies that are efficient and appropriate for solving a given problem. Students also practice a new method for multi-digit subtraction called trade-first subtraction preparing them to learn the U.S. algorithm in 4th grade.

New Jersey Student Learning Standards for Mathematics
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.5** Apply properties of operations as strategies to multiply and divide. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.9** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **NJSLS 3. NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.MD.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. **3.MD.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	Enduring Understandings
• How does understanding place value help you complete trade first subtraction problems? • Using the order of operations you know, how do you complete a multi operation problem? • Is creating a diagram similar to creating a number story when solving calculations?	*Students will understand that…* ● Prior to trade first subtraction, each number was written in expanded form when subtracting because it helps keep track of the value of each digit. Trade first subtraction relies on understanding place value to trade without writing the numbers in expanded form making long subtraction more efficient. ● Order of Operations helps decide where to start in a problem that has more than one operation. For third grade the primary focus is understanding that any operation with in parentheses is completed first, then you return to the beginning of the problem. ● Drawing a diagram is very similar to creating a number story that represents an unknown instead of drawing a picture, parentheses can be inserted to help you decide the outcome of your calculations.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• That place value of a number changes when you trade tens from one place value to the next. • Square number facts and multiplication/division patterns. • How to represent a missing number in a number story. • When solving an equation from left to right that multiplication and division are of equal priority as well as addition and subtraction. • How to solve number stories using either an equation or a drawn diagram. • The following vocabulary meanings: fact power, multiplication/division diagram, order of operations, parentheses and trade-first subtraction.	• Use trade-first subtraction to solve subtraction problems. • Identify and apply efficient and appropriate strategies for multiplication facts and problems with larger factors. • Self-assess automaticity with multiplication facts. • Use multiplication/division diagrams to represent an unknown quantity with a letter and make sense of multiplication and division number stories. • Solve number sentences with parentheses. • Apply the order of operations to solve multistep problems. • Write number models to represent two-step number stories. • Play multiplication games to build fact fluency

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed**	
				Career Ready Practices
9.1	**Personal Financial Literacy**			CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		X	CRP2. Apply appropriate academic and technical skills.
X	Money Management			CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management			CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
X	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration			CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:

NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence	
Assessments	
Formative Assessment(s) and Evidence of Learning: • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips / Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessment(s) and Performance Task(s):** • End of Unit Assessments • Benchmark Assessments • Tests • Quizzes Student Work Products

Stage 3: Learning Plan

Overview of Learning Activities
• **Lesson 6.1 (3.OA.8, 3.NBT.2):** Discuss Place Value and model Trade-First Subtraction. Provide students with opportunities to attempt their own Trade-First Subtraction problems on slates. • **Lesson 6.2 (3.OA.7):** Review Multiplication facts. Discuss and model playing Baseball Multiplication- model hits and runs with counters and to keep score. Remind students to use strategies displayed on the Fact Strategy Wall to solve unknown facts. • **Lesson 6.3 (3.OA.5, 3.OA.7):** Create generalizations about fact strategies for completing multiplication, division, addition, and subtraction. Circulate and observe the facts children identify for each strategy. • **Lesson 6.4 (3.OA.7):** Introduce *Beat the Calculator* to practice multiplication fluency. The purpose for this game is to develop automaticity with multiplication facts. Review finding facts using a calculator prior to modeling *Beat the Calculator.* • **Lesson 6.5 (3.G.1, 3.MD.4, 3.MD.8):** Match quadrilaterals based on attributes to explore. Have students create polygons and quadrilaterals using straws and twist-ties, matching their shape to written descriptions. Once created, students can find the perimeter of their polygons. For extra practice, students will record penny-slide distances on a line plot to review graph making. • **Lesson 6.6 (3.OA.2, 3.OA.3, 3.OA.4, 3.OA.6, 3.OA.7):** Representing and solving number stories using diagrams and variables. Remind students that using diagrams will be especially helpful as they solve number stories. Encourage students to refer to the Guide to Solving Number Stories on *Student Reference Book,* page 30. Discuss with students the ideal means for organizing information from the number story in a multiplication/division diagram before creating an equation to represent what they are trying to find. • **Lesson 6.7 (3.OA.5, 3.OA.7, 3.OA.8, 3.OA.9, 3.MD.7c):** Highlight the break-apart and doubling strategies for large number multiplication. Discuss what strategies students used to figure out the product of larger number multiplication problems. Review the simple doubling method students learned prior, as to apply it to breaking apart larger numbers (*example: 12 X 3=36 or 10 X 3=30 and 2 X 3=6*). Introduce Multiplication Top It to students for multiplication reinforcement. • **Lesson 6.8 (3.OA.7, 3.OA.8, 3.NBT.2):** Discuss order of operations and practice inserting parentheses to make number sentences true. Debate with students regarding the appropriate placement of

parentheses into the following number sentence as to make it true: 42-4+11=49. Make a list of rules with the students as a reference for parentheses placement.

- **Lesson 6.9 (3.OA.8): Day 1** Using diagrams to identify important information in a number story. Use a number model with parentheses to solve a number story and explain how the number model fits the story. Have students share solutions and discuss connections between the number story and number model with parentheses. Using Math Masters page 208, students write a two-step number story to fit a number sentence with parentheses.
- **Lesson 6.9 (3.OA.8): Day 2** Children reengage in the problem by analyzing and critiquing other children's work in pairs and in a whole-group discussion. Have children discuss with partners before sharing with the whole group. This sharing should look like peer review/ partner talk from Language Arts.
- **Lesson 6.10 (3.OA.7, 3.OA.8, 3.NBT.2):** Explore the order of operations using calculators. Give one example of using two calculators to complete a problem requiring the order of operations, be sure that each calculator provides a different answer. Explain that most four-function calculators do not apply the order of operations. Clarify that four-function calculator can be used to solve these types of problems, but students must know and apply the order of operations rules to get the correct answer.
- **Lesson 6.11 (3.OA.7, 3.OA.8, 3.NBT.2):** Creating an equation to represent a multi-step numbers story. Review with students how to pick out the most important information and deciding what it is the number story is asking you to solve for. Remember to organize information and explain how to complete the problem one step at a time, perhaps labeling each step as it is completed. Encourage students that are struggling, to draw pictures to help them decipher the information from the number stories.

Lesson 6-1: Trade-First Subtraction			TE pages.: 538-543
Objective: SWL to use the trade-first method to solve subtraction problems			

Math Masters:
page 189; TA3; TA14
	Activity Cards:
	39, 71
		Manipulatives:
		● Base-10 blocks,
		● number cards 0–9 (4 of each),
		● per group:
		  ● number cards 1–6, 10 (4 of each),
		  ● number cards 7–9 (4 of each) (optional)
			Other Materials:
			● slate
			● large poster paper

Vocabulary: efficient, trade-first subtraction			
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.			
1. Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Solve problems mentally and record sums	**Math Message:** Use base -10 notation to represent a number **Reviewing Expand and Trade Subtraction** Review expand and trade subtraction MJ2 page 189 **Introducing Trade-First Subtraction** Learn about trade –first subtraction MJ2 page 189 **Practicing Trade-First Subtraction** Use trade-first subtraction to solve problems MJ2 page 190		**Math Minute-** Practice mental math strategies. **Game-Playing Salute!** Practice finding missing factors SRB page 255, number cards 0–9 (4 of each), per group: number cards 1–6, 10 (4 of each), number cards 7–9 (4 of each) (optional) **Math Boxes 6.1** *MJ2:* pages. 189–191 **Home Link 6.1:** MM page 189
ELL Support: Scaffold the term trade as an exchange for something of equal value.	**Readiness:** **Trading and Expanding with Base 10 Blocks** MM pg. TA14, base 10 blocks	**Enrichment:** **Exploring Subtraction Strategies** AC-39, MM pg. TA43, large poster paper, base 10 blocks	**Extra Practice:** **Practicing Subtraction** Activity Card- 71, number cards 0-9 (4 of each)
Assessment: Page 542. MJ2 page 190. Observe problems for trade first method.			

<table>
<tr><td colspan="3">Lesson 6-2: Playing Baseball Multiplication</td><td>TE pages 544-549</td></tr>
<tr><td colspan="4">Objective: SWL to play Baseball Multiplication to build fact fluency.</td></tr>
<tr><td>Math Masters:
pages 190–192;
G17–G19</td><td>Activity Cards:
39, 71</td><td>Manipulatives:
● number cards 1–9 (4 of each),
● per group:
● 4 counters,
● two 10-sided dice</td><td>Other Materials:
● Slate,
● Fact Strategy Wall,
● baseball diamond photos or videos (see Before You Begin in Lesson 6-2) (optional)
● sheet protectors (optional),
● Math Journal, My Multiplication Facts Strategy Logs</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve equal grouping division number stories
● slate</td><td colspan="2">● Math Message:
Use square products to solve a riddle.
MJ2 page 192
● Solving a Multiplication Riddle
Explain how they solved the riddle
MJ2 page 192,
SRB page 235,
baseball diamond photos
● Introducing Baseball Multiplication
Learn a game sot practice multiplication facts SRB pages 234-235,
MM page G17,
counters (4 per group)
10 sided dice (2 per group)
● Practicing Baseball Multiplication</td><td>● Math Minute-
Practice mental math strategies.
● Taking Inventory of Facts
My multiplication Facts Inventory Part 3 page 300,
Fact Strategy Wall
● Math Boxes- 6.2
Math Journal 2: pages 192–193, 300, 295–297
● Home Link:
Lesson 6-2
MM page 193</td></tr>
<tr><td>ELL Support:
Riddles may be difficult for students to understand. Provide visuals for the homophone bat, and explain that a bat is an animal as well as something used in baseball. Show visuals of both to ensure understanding.</td><td>Readiness: Practicing Multiplication Facts with Arrays
MM page 190</td><td>Enrichment: Playing Multiplication Baseball
● SRB page 236,
● MM page G19,
● 10 sided dice,
● number cards 1-9 (4 of each)</td><td>Extra Practice: Solving Multiplication Baseball Number Stories
● My multiplication Facts Inventory Book,
● MJ1 pages. 135-140,
● MJ2 page 295-297,
● MM page 191</td></tr>
<tr><td colspan="4">Assessment: Page 548. To inventory students' knowledge of facts 2, 5, 10s, squared facts automatically.</td></tr>
</table>

Lesson 6-3: Taking Inventory of Known Fact Strategies

Objective: SWL to use square products as helper facts to find products of near squares.

Math Masters:	**Activity Card:** 70	**Manipulatives:**
pages 190–192; G17–G19		● Quick Look Cards 139, 146, 152, ● per team: 4 counters, two 10-sided dice

Vocabulary: efficient, appropriate

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

1. Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
● **Mental Math and Fluency:** Practice Quick Looks with equal groups and arrays ● **Quick Look Cards** 139, 146, 152,	● **Math Message:** Think of strategies for solving 6x7. slate ● **Reviewing Multiplication Facts Strategies** Solve less familiar multiplication facts 6x7 arrays, labeled rectangles ● **Analyzing Multiplication Facts Strategies** Children compare strategies ● MJ2 pages 135-140, ● MJ2 Activity Sheet 22, pages 295-297 ● scissors, chart paper, fact strategy wall ● **Generalizing About Facts Strategies** Identify facts and solution strategies ● MJ1 pages 135-140, ● MJ2 pages 194, 295–297, ● Fact Strategy Wall	● **Math Minute**: Practice mental math strategies. ● **Game**: **Multiplication Baseball** Practice multiplication facts STB 234-235, MM G17, counters (4 per team) 10 sided dice-(2 per team) Fact Strategy Wall ● **Math Boxes 6.3** *MJ1:* pages 135–140 *MJ2:* Activity Sheet 22, pages 194, 295–297 (optional) ● **Home Link 6.3:** MM pages 194-195

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Scaffold the term efficient by role-playing with think-aloud statements.	**Identifying Helper Facts** ● MM page TA36 ● fact triangles	**Applying Strategies to Multiplying by 11** MM page 193	**Matching Facts to Strategies** ● Activity Card 70 ● MM pages 182-183 ● scissors

Assessment: Page 554. MJ2 page 194. To inventory students ability to identify the facts for each strategy.

<table>
<tr><td colspan="3">Lesson 6-4: Fact Power and Beat the Calculator</td><td>TE pages: 554- 561</td></tr>
<tr><td colspan="4">Objective: SWL to self-assess their automaticity with multiplication facts.</td></tr>
<tr><td>Math Masters:
pages 196–197;
G20 (optional)</td><td>Activity Card:
72</td><td>Manipulatives:
● Quick Look Cards 139, 146, 152
● per team:
● 4 counters,
● two 10-sided dice</td><td>Other Materials:
● Slate,
● Fact Triangles,
● calculator,
● Fact Strategy Wall (optional),
● Math Journal 2: Activity Sheets 19–20 (Fraction Cards) (optional)
● fraction cards,
● red and blue crayons,
● fact wheel (see Before You Begin in Lesson 6-4),
● marker,
● tape (optional)</td></tr>
<tr><td colspan="4">Vocabulary: fact power</td></tr>
<tr><td colspan="4">3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>1. Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Solve multiplication number stories</td><td colspan="2">● Math Message:
Find square facts to match given products
● Introducing Fact Power
Learn the importance of “fact power”
● Introducing Beat the Calculator
Children play a game to help develop automaticity with multiplication facts
SRB page 237
MM page. G20
Assessment handbook page 136-142
Fact Triangles
calculator</td><td>● Math Minute-
Practice mental math strategies.
● Game-Fraction Memory
Practice recognizing equivalent fractions
MJ2 Activity Sheets 19-20, SRB page 243
fraction cards
● Math Boxes 6.4
Math Journal 2: Activity Sheets 19–20 (optional), pages 196 and 301
● Home Link:
6-4 MM pg. 197</td></tr>
<tr><td>ELL Support:
Use gestures to scaffold the terms Caller, Calculator, and Brain from Beat the Calculator.</td><td>Readiness: Finding Missing Factors with Calculators
calculator</td><td>Enrichment- Finding Rules
● MM pages 195-196
● Red & blue crayons
● calculator</td><td>Extra Practice- Practicing Facts with a Fact Wheel
● slate, marker, tape
● Activity card 72</td></tr>
<tr><td colspan="4">Assessment: Page 559. Assessment Handbook: pages 136–142 (optional). MJ2 page 194: To inventory students’ ability to identify the facts to beat the calculator.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 6-5: Exploration
Exploring Geometry Problems, Measurement Data, and Polygons</td><td>TE pages 562-567</td></tr>
<tr><td colspan="4">Objective: SWL to construct quadrilaterals, measure and plot distances to the nearest 12 inch, and compare perimeter measurements of polygons.</td></tr>
<tr><td>Math Masters:
pp. 198–199</td><td>Activity Cards:
73–75</td><td>Manipulatives:
per child:
● 4 full- and half-length straws,
● yardsticks,
● ruler,
● pattern blocks</td><td>Other Materials:
● Slate,
● twist ties,
● straightedge,
● Two-Dimensional Shapes Poster,
● class line plot (see Before You Begin in Lesson 6-5)
● pennies,
● opaque container such as a paper bag or empty tissue box,
● per partnership: 2 sets of MJ1: Activity Sheets 11–12 (Quadrilateral Cutouts),
● per child: 10 small stickers</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</td></tr>
</table>

<table>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Find perimeters and areas of rectangles</td><td colspan="2">● Math Message:
Sketch polygons on their slates
● Exploring with Straws & Twist Ties
Make straw and twist tie polygons
Straws-full/half length, twists, ties (4 per child)
● Exploration A: Solving Geometry Problems
Create straw and twist-tie quadrilaterals to match written descriptions
Activity Card-73
2 Dimensional Shapes Poster,
twist ties and straws
● Exploration B: Measuring Penny Slides
Record penny slides distances on a line plot
Activity Card 74,
class line plot,
pennies, yardsticks, straightedge
small stickers (10 per child),
● Explorations C: Comparing Polygon Measurements
Activity Card 75,
MJ2 pg. 198,
SRB pg. 174-175,
Ruler and pattern blocks</td><td>● Math Minute-
Practice mental math strategies.
● Multiplication Games
Practice multiplication facts
MJ2 Activity Sheets 19-20,
SRB pages 234-235,
Assessment Book pages 136-142
● Math Boxes- 6.5
● Math Journal 2: pp. 197–199
● Home Link:
● 6-5 MM pg. 199</td></tr>
<tr><td>ELL Support:
Scaffold that a target is something you aim for by showing sports-related pictures, such as a soccer goal, finish line, goal post, or basketball hoop.</td><td>Readiness: Feeling Quadrilaterals
● MJ1 Activity sheets 11/12,
● opaque container (like paper bag /tissue box)</td><td>Enrichment: Finding Perimeters of Rectilinear Figures
● MM page 198</td><td>Extra Practice: Comparing Quadrilaterals
● MM page TA37
● 2 Dimensional Shapes Poster</td></tr>
<tr><td colspan="4">Assessment:</td></tr>
</table>

Lesson 6-6: Multiplication and Division Diagrams			TE pages 568-576
Objective: SWL to use multiplication and division diagrams to make sense of and solve number stories.			
Math Masters: pages 200–201; TA8; TA38	**Activity Card:** 76	**Manipulatives:** fraction circles	**Other Materials:** ● Slate ● Class Data Pad
Vocabulary: equation, multiplication/division diagram			
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.6** Understand division as an unknown-factor problem. **NJSLS 3 OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: Use multiplication facts to solve division facts	● **Math Message:** Write equations to represent a number story-slate ● **Representing Unknowns** Represent unknown quantities in equations- slate ● **Introducing Multiplication/Division Diagrams** Organize information from number stories SRB page 30, MM page TA38, Class Data Pad ● **Representing and Solving Number Stories** Write equations and solve number stories MJ2 pages 200-201, SRB page 30		● **Math Minute-** Practice mental math strategies. ● **Game-Identifying Parts of a Whole** Identification missing fractional parts of a whole Fraction circles ● **Math Boxes 6.6** *MJ 2:* pages 200–202 ● **Home Link 6-2:** ● MM page 201
ELL Support: Introduce the term diagram by referring to parts-and-total diagram, T-chart, and a 4-square Graphic Organizer	**Readiness:** **Draw pictures to solve multiplication stories**	**Enrichment:** **Writing and solving number stories** ● MM page TA8/38 ● Activity Card 76	**Extra Practice:** **Practicing Number Stories** MM page 200
Assessment: Page 574. MJ2 pages 200-201			

Lesson 6-7: Multiplication and Larger Factors			TE pages 577-581
Objective: SWL to play Multiplication Top-It and apply strategies to multiply larger factors			

Math Masters:
pages 202–204
	Activity Card:	**Manipulatives:**
		● number cards 0–10 (4 of each),
		● number cards 11–19 (optional),
		● per partnership:
		  ● pan balance,
		  ● set of standard masses
			Other Materials:
			● slate (optional),
			● benchmark objects,
			● classroom objects,
			● Fact Triangles,
			● Multiplication Facts Strategy Logs,
			● Fact Strategy Wall

Vocabulary:

3.OA.5 Apply properties of operations as strategies to multiply and divide.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Use different strategies to solve multiplication facts	● **Math Message:** Decide which fact in a pair has the greater product ● **Representing Unknowns** Represent unknown quantities in equations ● **Introducing Multiplication Top-It Game** Practice basic facts and strategies SRB pages 260-261, Assessment Book pages 136-142, number cards 0-10 (4 of each) number cards 11-19 (optional) ● **Multiplying with Larger Factors** Use Strategies to multiply with larger factors MJ2 pages 203-204, Fact Strategy Wall	● **Math Minute-** Practice mental math strategies. ● **Estimating and Measuring Mass** Estimate and measure the mass of objects MJ2 page 205, pan balance, classroom objects ● **Math Boxes 6.7** *MJ 2:* pages 203–206 ● **Home Link 6-7** MM page 204

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Support students in understanding the term top as an expression that means “to beat”	**Identifying Helper Facts** ● fact triangles, ● multiplication fact strategy logs, ● fact strategy wall	**Writing and solving number stories** MM page 202	**Applying Strategies to Multiplication Top it** MM pg. 203

Assessment: Page 574. MJ2 pages 200-201. Observe and Identify if students are applying 1 strategy to solve problems 2-4 on MJ2 page 204

Lesson 6-8: Number Sentences with Parentheses	TE pages 582-587
Objective: SWL to use parentheses in number sentences.	

Math Masters: pages 202–204	**Activity Card:**	**Manipulatives:** ● number cards 0–10 (4 of each) ● number cards 11–20 ● ruler	**Other Materials:** ● slate ● shape cards

Vocabulary:

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Complete multi step problems	● **Math Message:** Find more than one meaning for each sentence ● **Introducing Parentheses in Number Sentences** Explore how parentheses affect number sentences- slate ● **Inserting Parentheses into Number Sentences** Insert parentheses to make number sentences true MJ3 page 207 ● **Playing Name That Number** Use Different Operations to name a number SRB pages 249-250, MM page G21, cards 0-10 (4 of each), and 11-20	● **Math Minute-** Practice mental math strategies. ● **Game – What's My Polygon Rule?** Sort polygons into categories SRB page 262, Shape cards, MM pages G13-G14, ruler ● **Math Boxes 6.8** *MJ 2:* pages 203–206 ● **Home Link 6.8** MM page 207

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Scaffold a discussion about sentences and equations with different meanings. Start with examples of words with multiple meanings, selecting terms that can be illustrated or demonstrated concretely such as the word fly (insect or bird in flight)	**Playing Name That Number** Use Different Operations to name a number SRB pages 249-250, MM page G21, cards 0-10,(4 of each), and 11-20	**Describing Dot Patterns with Number Sentences** MM page 205	**Practicing with Parentheses** MM page 206

Assessment: Page 586. MJ2 page 207

<table>
<tr><td colspan="3">Lesson 6-9 (Day 1) Open Response Writing Number Stories</td><td>TE pages 588- 598</td></tr>
<tr><td colspan="4">Objective: SWL to:
Day 1: Write a two-step number story to fit a number sentence.
Day 2: Analyze others' number stories and revise their work.</td></tr>
<tr><td>Math Masters:
pages 208; TA6;
TA42 (optional)</td><td>Activity Cards:</td><td>Manipulatives:</td><td>Other Materials:
● slate
● Guidelines for Discussions Poster
● colored pencils (optional)
● children’s work from Day 1</td></tr>
<tr><td colspan="4">Vocabulary: parentheses</td></tr>
<tr><td colspan="4">3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Use related multiplication facts to solve division problems</td><td colspan="2">● Math Message:
Use a number model with parentheses to solve a number story and explain how the number model fits the story
MJ2 pg. 209
● Connecting a Number Story and a Number Model
Share solutions and discuss connections between the number story and number model with parentheses
MJ2 pg. 209
● Solving the Open Response Problem
Children write a two-step number story to fit a number sentence with parentheses
MM pg. 208</td><td>● Math Minute-
Practice mental math strategies.
● Math Boxes 6.9
Math Journal 2: page 209
● Home Link 6.9:
MM page 209</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment:</td><td>Extra Practice:
Write 2-step number stories that fit the number model by talking with them about each part of the problem. Have students think about what each portion of the number sentence could represent, beginning with what is in the parentheses.</td></tr>
<tr><td colspan="4">Assessment: Page 596. Collect and review children’s revised work. Review to see if students have improved their work based on the class discussions.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 6-10: Order of Operations</td><td>TE pages 599-603</td></tr>
<tr><td colspan="4">Objective: SWL to use the order of operations to solve multistep problems. PEMDAS</td></tr>
<tr><td>Math Masters:
pages 210–212;
TA20 (optional);
G20 (optional)
assessment pages 134-142</td><td>Activity Card:</td><td>Manipulatives:</td><td>Other Materials:
Slate,
Class Data Pad,
Fact Triangles,
per group:
1 scientific
1 four-function calculator</td></tr>
<tr><td colspan="4">Vocabulary: order of operations, PEMDAS</td></tr>
<tr><td colspan="4">NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
NJSLS: 3.NBT.2 Use place value understanding and properties of operations to perform multi-digit arithmetic. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (A range of algorithms may be used.)</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
To solve equations with parentheses</td><td colspan="2">Math Message:
To analyze two solutions to a number story
MJ2 page 209
Introducing Order of Operation
Discuss parentheses in an operation
MJ2 page 211
Practicing Order of Operations
Apply the order of operations to equations
SRB page 69
Class Data Sheet
Exploring Order of Operations
Explore the order of operations using calculators
MJ2 page 212,
MM page TA20,
scientific and four function calculators</td><td>Math Minute-
Practice mental math strategies.
Game – Beat the Calculator
Practice Multiplication Facts
SR page 237,
MM page 20,
Assessment Handbook pages 136-142,
Fact triangles,
calculator
Math Boxes 6.9
MJ 2 pages 211–213
Home Link 6.10
MM page 213</td></tr>
<tr><td>ELL Support:
Scaffold understanding of the term order as meaning activities done in a certain order by role-playing, demonstrating, or showing visuals of everyday or familiar sequences of events.</td><td>Readiness:
Solving Problems with Parentheses
MM page 210</td><td>Enrichment:
Investigating Order of Operations
MJ2 page 212</td><td>Extra Practice:
More Practice of Order of Operations
SRB page 69,
MM page 211,
scientific calculator</td></tr>
<tr><td colspan="4">Assessment: Page 602. MJ2 page 212. Collect and review children’s revised work. Review to see if students have improved their work based on the class discussions.</td></tr>
</table>

Lesson 6-11: Number Models for Two-Step Number Stories			TE pages 604-611
Objective: SWL to solve two step number stories and represent them with equations			
Math Masters: pages 213–217; TA16	**Activity Cards:**	**Manipulatives:**	**Other Materials:** Slate
Vocabulary:			
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **NJSLS: 3.NBT.2** Use place value understanding and properties of operations to perform multi-digit arithmetic. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (A range of algorithms may be used.)			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: To solve equations with parentheses	• **Math Message:** To analyze a number story and a situation diagram MJ2 pg. 214 • **Representing a Number Story** Write a number models to fit number stories MJ2 pg. 214, SRB pg. 30, MM pg. 216 • **Organizing Information from Number Stories** • Organize number stories into situation diagram • MM page TA16, TA38 • **Writing Number Models** • Represent multistep number stories • MJ2 page 215, • SRB pg. 30		• **Math Minute-** Practice mental math strategies. • **Math Boxes 6.9** *MJ 2:* pages 214–216 • **Home Link 6.11:** MM page 217
ELL Support: Scaffold the meaning of represent by using it interchangeable with stand-for, while translating from concrete objects to pictorial and/or symbolic representations.	**Readiness:** **Solving Number Stories** MM pg. 213	**Enrichment:** **Writing 2-Step Number Stories** MJ2 pg. 214	**Extra Practice:** **Solving 2-Step Number Stories** MM pg. 215
Assessment: Page 611. MJ2 page 215. Expect students to solve problems 1 and 2 successfully using any strategy with wish. Students having problems should use picture models to aid their comprehension.			

<table>
<tr><td colspan="3">Lesson 6-12 (Day 1) : Progress Check Unit 6 Progress Check</td><td>TE pages 604-611</td></tr>
<tr><td colspan="4">Objective: SWL to correctly answer Unit Assessment questions</td></tr>
<tr><td>Math Masters:
● pp. 218–221; TA16 (optional)
● Assessment Handbook pages 53–68</td><td>Activity Card:</td><td>Manipulatives:
● 2-Dimensional Shapes Poster (optional)
● fraction cards (optional)</td><td>Other Materials:
Slate</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.6 Understand division as an unknown-factor problem.
NJSLS 3 OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.
3.MD.7 Geometric measurement: understand concepts of area and relate area to multiplication and to addition. Relate area to the operations of multiplication and addition.
NJSLS 3. NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
slate</td><td colspan="2">Day 1 Student Self-Assessment
● Unit 6 Assessment
● Check Differentiation Section for Adjusting Assessment

Day 2- Cumulative Assessment</td><td>● Math Boxes 6.9
● Home Link:
Unit 7 Letter to Parents</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment-</td><td>Extra Practice-</td></tr>
<tr><td colspan="4">Assessment: Unit 6 Assessment rubrics</td></tr>
</table>

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 2* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 6.1-6.12 Teaching Masters, Game Masters, Assessment Masters
Miscellaneous	https://www.youtube.com/watch?v=ClYdw4d4OmA (Introduction and explanation of the Order of Operations) http://www.teachersnotebook.com/product/VintageTeacher/order-of-operation-story-pemdas (Order of Operations story using Purple Elephants May Destroy A School. This is a free PowerPoint download) *Zachary Zormer: Shape Transformer* by Joanne Reisburg

Unit 7 Plan	Fractions
Suggested Time Frame	19 days including "Flex Days"

Stage 1: Desired Results
Overview / Rationale
In this unit, children explore measurement by solving number stories involving mass, volume, and length. Through measurement, students develop an understanding of fractions as parts of a whole and as distances on a number line.

New Jersey Student Learning Standards for Mathematics
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.NBT.2** fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.NF.1** Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.2a** represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.3a** understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.3b** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. **3.NF.3d** compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Technology Integration
__X__ **8.1 Educational Technology:** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.
- Student Websites - Teacher Websites - SMART board
____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	Enduring Understandings
● What is a fraction and how are they applicable to our everyday world? ● What is the importance of creating and understanding rules or patterns for ordering and comparing fractions?	*Students will understand that…* ● A fraction is a representation of parts to the whole. We use fractions in the everyday world, such as in advertisements, on measuring tools, in recipes, and so on. They are used to compare ideas, share items equally, or represent a part of something that is a remainder. ● Finding rules and patterns when comparing and ordering fractions makes use of the relationship between the numerator and denominator. If the numerator is greater than half of the denominator, then the fraction is greater than 12. If the denominator is less than double the numerator, then the fraction is greater than 12. If double the numerator is less than the denominator, then the fraction is less than 12
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• Liquids are measured using liters and milliliters. • The connection between real life applications of arrays and multiplication. • To extend their response using pictures, diagrams and words when solving number stories involving time, mass, volume, and length. • How to use fraction circle pieces, fraction strips, and number lines to represent various fractions • The **whole** is the distance between 0 and 1 • Any number over itself is equivalent to one whole. • The greater the denominator, the more parts of the whole there are. • Rules or patterns for ordering and comparing fractions • The following vocabulary meanings: denominator, displace, equivalent fractions, fraction, liter, liquid volume, milliliter, numerator, unit fraction, volume, whole.	• Measure and estimate liquid volumes. • Solve number stories involving mass, volume, and length. • Partition fraction strips and use them to name and compare fractions. • Develop an understanding of fractions as distances on a number line. • Represent whole numbers as fractions. • Recognize and generate equivalent fractions using fraction circle pieces, fraction strips, and number lines. • Identify and locate fractions greater than, less than, and equal to 1 on a number line. • Use, < , > and = to compare fractions. • Solve number stories involving fractions. • Share collections equally and represent the resulting groups with fractions.

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**			CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		X	CRP2. Apply appropriate academic and technical skills.
X	Money Management			CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management			CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
X	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration			CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:

NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.
NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessment(s) and Evidence of Learning: • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips / Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessment(s) and Performance Task(s):** • End of Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 7.1 (3.MD.2):** Comparing and estimating measurements for liquid volume. Label three containers that measure about 1 liter, 12 liter, and 34liter with A, B, and C respectively for the Math Message. Mark the 1-liter beaker at all the 50-mililiter increments. Students will compare the liquid volumes and then measure as accurately as possible. Encourage students to draw diagrams to complete the Volume Puzzle.
- **Lesson 7.2 (3.OA.1, 3.OA.3, 3.NF.3a):** Estimate number the number of dots in an array using real life applications like that of plants in a garden. Group 1 will discuss estimation strategies, then calculate the actual number of dots in a given array. A second group of students will find the volume of objects by measuring displaced water. Finally, the third group of students sort representations of equal and non-equal shares. This should be done as short centers helping students move into fractional parts by the end of the lesson.
- **Lesson 7.3 (3.OA.2, 3.OA.3, 3.OA.7, 3.NBT.2, 3.NBT.3, 3.MD.1, 3.MD.2):** Review the steps to make sense of and solve number stories. Solve number stories about time, mass, volume and length. Review measurements and respective units to solve number stories.
- **Lesson 7.4 (3.G.1, 3.G2, 3.NF.1):** Creating fraction strips. Students will partition and label unit fractions on fraction strips. Teacher should begin by showing students what half looks like. Teacher will need to have made a set of fraction strips prior to this lesson. This lesson reiterates equal parts and equivalents.
- **Lesson 7.5 (3.NF.2a, 3.NF.3c): Day 1** Using a number line, reinforce that the **whole** is the distance between 0 and 1. Use fraction strips to partition and label number lines. Then analyze and locate fractions on a given number line.
- **Lesson 7.6 (3.NF.1, 3.NF.2a, 3.NF.3c, 3.NF.3d): Day 2** Use fraction strips to compare to one whole on the number line. Identify fractions greater than, less than, and equal to one on a number line. Discuss what happens when a fraction is greater than one. It is important to reiterate that the distance from 0 to 1 is one whole, and the distance from 1 to 2 is another whole.
- **Lesson 7.7 (3.NF.2a, 3.NF.3a, 3.NF.3b, 3.NF.3d):** Ordering and comparing fractions and on a number line using 1/2, 0, 1 as benchmarks. Introduce and model *Fraction Top-It*.

- **Lesson 7.8 (3.NF.3d): Day 1** Generate and justify fraction comparisons. Write a rule to determine whether a fraction is greater than or less then ½, justify the thinking behind a given answer. Using this knowledge, students will write rules for ordering fractions from least to greatest using Math Masters pages 248-249.
- **Lesson 7.8 (3.NF.3d): Day 2** Children analyze their rules and discuss justifications with their partners. Have children discuss with partners before sharing with the whole group. This sharing should look like peer review/ partner talk from Language Arts. Ask students to reflect on their work and revisions. Ask: *How did you improve your rule for ordering fractions with the same numerator?*
- **Lesson 7.9 (3.NF.2a, 3.NF.3a, 3.NF.3c):** Locate and represent fractions on a number line. Begin by partitioning wholes on number lines and locating given fractions. Students record distances and represent unit and non-unit fractions on *Math Masters,* page 252. Discuss what 2/3 might mean on the number line and ask students to defend their ideas with an explanation or evidence.
- **Lesson 7.10 (3.NF.2a):** Generate and justify fraction comparisons using fraction tools. Remind students of yesterday's lesson and review the tools they have to make comparisons as a visual representation. Explain and discuss comparisons of fractions with use of fraction strips, fraction circles, drawings and fraction number lines.
- **Lesson 7.11 (3.NF.1, 3.NF.3c, 3.NF.3d, 3.G.2):** Solve a number story using fraction manipulatives. Review the steps to make sense of and solve number stories. Discuss how previous strategies for solving number stories still apply to solving number stories with fractions in them. Encourage students to draw fraction or use fraction strips to help them solve each problem.
- **Lesson 7.12 (3.OA.2, 3.NF.1):** Naming fractions of collections, begin by using counters to create equal parts as to identify fractions of a collection. Use students as a tangible example of parts of a whole (example: Out of 4 students, one is wearing a red shirt. He is ¼ of the collection). Remind students to think of a collection as the total number or whole and the question being asked as the fractional part.

<table>
<tr><td colspan="3">Lesson 7-1: Liquid Volume</td><td>TE pages 634-639</td></tr>
<tr><td colspan="4">Objective: SWL to estimate and measure liquid volumes.</td></tr>
<tr><td>Math Masters:
pages 222–224</td><td>Activity Card: 77</td><td>● Manipulatives:
benchmark beakers,
● dropper</td><td>Other Materials:
● Slate,
● empty,
● labeled containers,
● water,
● paper towels,
● irregularly shaped containers</td></tr>
<tr><td colspan="4">Vocabulary: liquid volume, liter, milliliter</td></tr>
<tr><td colspan="4">3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
Estimate multi digits sums</td><td colspan="2">● Math Message:
Estimate and compare liquid volumes
Empty labeled containers
● Comparing Liquid Volumes
Compare liquid measures of 2 containers
Empty labeled containers,
beakers
● Measuring Liquid Volumes
Measure liquid volume in liters and milliliters
Empty labeled containers
beakers
● Exploring Liquid Volumes
Estimate liquid volume and solve volume puzzle
MJ2 pages 218-219,
SRB page 182,
Empty labeled containers
dropper</td><td>● Math Minute-
Practice mental math strategies
● Practicing Order of Operations
Practice solving equations by applying the order of operations
MJ2 page 220
● Math Boxes-
MJ 2: pages 218–221
● Home Link:
Unit 7 Letter to Parents</td></tr>
<tr><td>ELL Support:
Scaffold the term hold as it relates to volume.
Demonstrate the different meanings of the term using familiar contexts. Think aloud.</td><td>Readiness: Estimating Liquid Volume
Beakers
Paper towels</td><td>Enrichment: Estimating and measuring Liquid Volumes
Activity Card-77
Irregularly shaped containers
beakers,
paper towels,
water</td><td>Extra Practice: Estimating Liquid Volume
MM pg. 223
Beakers,</td></tr>
<tr><td colspan="4">Assessment: Page 639. MJ 2 page 218.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 7-2 : Exploration Exploring Arrays, Volume, and Equal Shares</td><td>TE pages 640-646</td></tr>
<tr><td colspan="4">Objective: SWL to estimate the number of dots in an array, measure liquid volume, and identify equal shares.</td></tr>
<tr><td>Math Masters:
pages 225–238</td><td>Activity Cards:
78-79</td><td>Manipulatives:
● benchmark beakers,
● counters,
● fraction circles,
● per group: 20 pattern-block squares</td><td>Other Materials:
● Calculator,
● wide-mouth container,
● dish tub,
● water,
● paper towels,
● construction paper
● scissors,
● tape or glue,
● fraction cards,
● per group: 4 different-size objects</td></tr>
<tr><td colspan="4">Vocabulary: volume, displace, equal shares</td></tr>
<tr><td colspan="4">3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.NF.3a understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</td></tr>
</table>

Warm Up 5 minutes	2. Focus 30-40 minutes	3. Practice 15-20 minutes
Mental Math and Fluency: Solve subtraction problems mentally	• **Math Message:** Estimate number of plants in a garden MM page 228 • **Estimating the Number of Plants** Discuss estimation strategies stories, MM page 228 • **Exploration A: Estimating the Number of Dots in an Array** Estimate and then calculate the number of dots in an array MJ2 page 222, pattern block squares (20 of per group) calculator • **Exploration B: Measuring Liquid Volume** Find the volume of objects by measuring displaced water Activity Card 78, MM page 229 different sized objects • **Exploration C: Identifying Equal Shares** Sort representations of equal and unequal shares MM page. 230, Activity Card 79 construction paper, scissors, tape, glue	• **Math Minute-** Practice mental math strategies • **Playing Fraction Memory** Practice recognizing equivalent fractions MJ2 Activity Sheets 16-21 SRB page 243 fraction cards fraction circles • **Math Boxes** • *MJ 2:* pages 222–223 • **Home Link 7.2:** MM page 231

ELL Support:	Readiness:	Enrichment:	Extra Practice:
Think aloud and use visual aids to explain the term submerge. Submerge items in a container of water and use simple sentences to describe the action.	**Finding the Total Number in an Array** counters	**Estimating the number of seats in an Auditorium** MM page 225	**Justifying Equal Parts** MM pages 226-227

Assessment:

<table>
<tr><td colspan="3">Lesson 7-3 : Number Stories with Measures</td><td>TE pages 646-651</td></tr>
<tr><td colspan="4">Objective: SWL to solve number stories involving time, mass, volume, and length.</td></tr>
<tr><td>Math Masters:
pages
232–233;
TA8; TA15</td><td>Activity Card:
80</td><td>Manipulatives:
● toolkit clocks (optional),
● benchmark beakers,
● metric masses,
● ruler,
● tape measure,
● per group: number cards 1–10 (4 of each)</td><td>Other Materials:
● Calculator,
● slate
● classroom items (optional)</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.2 fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.NBT.3 Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. (A range of algorithms may be used.)
3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Skip count on a calculator
● slate</td><td colspan="2">● Math Message:
Solve a number story involving time
● Reviewing the Guide to Solving Number Stories
Make sense of and solve number stories
SRB page 30,
MM page TA15
● Solving Number Stories with Measures</td><td>● Math Minute-
Practice mental math strategies
● Playing Salute!
Find missing factors and products
SRB page 255
number cards 1-10 (4 per group)
● Math Boxes
MJ 2: pages 224–226
● Home Link 7.2:</td></tr>
</table>

<table>
<tr><td></td><td>Solve number stories about time, mass, volume and length
MJ2 pages 224-225
SRB page 30
Toolkit clocks</td><td>MM page 231</td></tr>
<tr><td>ELL Support:
Scaffold the content of the number stories in this lesson by using a variety of visual aids alongside the oral and written accounts.</td><td>Readiness:
Reviewing Metric Units
page 647</td><td>Enrichment:
Writing/Solving Metric Measure Stories
● Activity Card 80
● SRB page 288
● MM page TA8</td><td>Extra Practice:
Solving Problems using a Bar Graph
MM page 232</td></tr>
<tr><td colspan="4">Assessment: Page 650. MJ2 page 224. Check problems 1-3 for strategies and ability to identify unit of measurement and picture representation of given problem.</td></tr>
</table>

Lesson 7-4: Fraction Strips			TE pages 652- 657
Objective: SWL to partition fraction strips and use them to name and compare fractions.			
Math Masters: pages 234–237; TA24; TA39	**Activity Card:** 80	**Manipulatives:** ● Fraction Quick Look Cards 163, 164, 165, ● fraction circles, ● Pattern-Block Template*	**Other Materials:** ● Slate, ● scissors, ● fraction strips, ● Representing Fractions chart (from Lesson 5-2), ● Class Data Pad, ● straightedge
Vocabulary: unit fraction, greater than, less than, equal to, equivalent			

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.2 fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.NBT.3 Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. (A range of algorithms may be used.)
3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Describe what they see in Fraction Quick Looks
● Fraction Quick Look Cards 163, 164, 165,</td>
<td>● Math Message:
Cut out Fraction strips and fold one in half
MM page TA39
scissors
● Making Fraction Strips
Partition and label unit fractions on fraction strips stories
MM page TA39
● Recognizing Non Unit Fractions
Represent non-unit fractions using fraction strips
Compare fractions using fraction strips
MJ2 page 227
Class Data Pad
Fraction circles</td>
<td>● Math Minute-
● Practice mental math strategies
● Creating “What’s My Rule?”
Create and apply rules to numbers
MM p TA24
● Math Boxes-
MJ 2: pages 227–228
● Home Link 7.4:
MM page 231</td>
</tr>
<tr>
<td>ELL Support:
Support students’ understanding of the prefix un- as meaning “the opposite” by demonstrating and thinking aloud. Use visual examples such as fold and unfold a paper</td>
<td>Readiness:
Making Equal Parts
● MM pg. 234
● straightedge
● Pattern Block Template</td>
<td>Enrichment:
Creating More Fraction Strips
MM pg. 235</td>
<td>Extra Practice:
Comparing Fractions Using Fractions Strips
MM pg. 236</td>
</tr>
<tr>
<td colspan="4">Assessment: Page 655. MJ2 page 227. Observe students label fraction strips with parts with unit fractions. Students are expected to know ½, ¼, 1/8,</td>
</tr>
</table>

<table>
<tr><td colspan="3">Lesson 7-5 : Fractions on a Number Line, Part 1</td><td>TE pages 658-663</td></tr>
<tr><td colspan="4">Objective: SWL to represent fractions on number lines.</td></tr>
<tr><td>Math Masters:
pages 238–239;
TA40–TA41</td><td>Activity Card:
81</td><td>Manipulatives:
● Class Number Line,
● pattern-block triangle,
● ruler</td><td>Other Materials:
● fraction cards,
● fraction strips,
● Class Fraction Number-Line Poster
● straightedge,
● small objects,
● pennies</td></tr>
<tr><td colspan="4">Vocabulary: distance, whole, denominator, numerator</td></tr>
<tr><td colspan="4">3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:

Count by unit fractions and note equivalents</td><td colspan="2">● Math Message:
Name numbers between 0and 1 on number line
● Locating Numbers Less Than One
Locate numbers between 0 and 1 on a number line
● Making Number line Posters
Use fraction strips to partition and label number lines.
MJ2 page 229
MM page TA40
fraction strips
pattern blocks triangle
Class Fraction Number line Poster
Class Number line
● Identifying Equivalent Fractions
Identify equivalent fractions on number lines
MJ2 pages 157, 229-230,
Class Fraction Number line Poster,
Class Number line
straightedge</td><td>● Math Minute-
Practice mental math strategies
● Game: Fraction Memory
Practice recognizing equivalent fractions
MJ2 AC sheets 19-21,
SRB page 243-244
fraction cards
● Math Boxes
MJ 2: pages 229–231
● Home Link 7.5
MM page 239</td></tr>
<tr><td>ELL Support:
Use gestures and the everyday terms far and near to demonstrate the meaning of the word distance.</td><td>Readiness:
Measuring Small Objects
● ruler,
● small objects</td><td>Enrichment:
Solving Fraction strips Problems
● MM page 238
● fraction strips</td><td>Extra Practice;
Finding the Hidden Fraction
● MJ2 page 229
● Pennies
● AC 81</td></tr>
<tr><td colspan="4">Assessment: Page 662. Pattern Block triangles Observe students construct fraction number lines and label the appropriate fractions.</td></tr>
</table>

<table>
<tr><td>Lesson 7-6: Fractions on a Number Line, Part 2</td><td>TE pages 664-671</td></tr>
<tr><td colspan="2">Objective: SWL to represent fractions on number lines.</td></tr>
</table>

Math Masters:	**Activity Card:**	**Manipulatives:**	**Other Materials:**

pages 240–244; G17	81	• Fraction Quick Look Cards 167, 168, 175,
		• fraction circles,
		• pattern-block triangle,
		• per group:
		  • 4 counters,
		  • two 10-sided dice
			small stick-on notes cut in half (optional)

Vocabulary: fractions greater than one

3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3.NF.3d compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: • Describe what they see in Fraction Quick Looks • Fraction Quick Look Cards 167, 168, 175,	• **Math Message:** Represent fractions of an apple with fraction circles • **Comparing Fractions to One** Name fractions greater than, less than, and equal to 1 • **Identifying Fractions Less Than One** Identify fractions less than one on a number line MJ2 page 232, MM page 243, pattern block triangle • **Identifying Fractions Greater Than One** Identify fractions greater than one on number lines MJ2 pages 232-233, MM page 243, pattern block triangle	• **Math Minute-** Practice mental math strategies • **Playing Baseball Multiplication** Practice multiplication Facts SRB pages 234-235, page 236 MM page G17, counters (4 per group), 10 sided dice (2 per group) • **Math Boxes-** *MJ 2:* pages 232–234 • **Home Link 7.6** MM page 244

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
To scaffold greater than and less than, use gestures to model the comparison symbols and also use visual models such as beakers filled with different amounts.	**Identifying Missing Fractions on Number Lines** MM page 240	**Solving Fraction strips Problems** MM page 241 Sticky notes	**Recognizing Fractions Greater Than One** MM page 242

Assessment: Page 670. MJ2 page 233.

<table>
<tr><td colspan="3">Lesson 7-7: Comparing Fractions</td><td>TE pages 672-677</td></tr>
<tr><td colspan="4">Objective: SWL to represent fractions on number lines.</td></tr>
<tr><td>Math Masters:
pages 245–247; G22</td><td>Activity Card:
82</td><td>Manipulatives:
● Fraction Quick Look Cards 166, 170, 171,
● fraction circles,
● pattern-block triangle,
● per group:
  ● 4 counters,
  ● two 10-sided dice</td><td>Other Materials:
● Class Fraction Number-Line Poster
● Class Fraction-Benchmarks Poster,
● stickers (optional)
● fraction cards,
● three different-shape,
● 1-liter containers (optional)
● slate,
● index cards,
● paper labeled 0, 12, and 1</td></tr>
<tr><td colspan="4">Vocabulary: benchmark, greater than, less than</td></tr>
<tr><td colspan="4">3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3.NF.3d compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.</td></tr>
</table>

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>

Mental Math and Fluency:
Describe what they see in Fraction Quick Looks
Fraction Quick Look Cards 166, 170, 171

</td>
<td>

Math Message:
Compare shaded portions of shapes to 1/2
Comparing Fractions to ½
Discuss their comparisons
Using Benchmarks to Compare Fractions
Use ½ , 0, 1 as benchmarks to compare fractions
MJ2 pg. 2235,
MM pg. 243,
Class Fraction-Benchmarks Poster,
Introducing Fraction Top It
Compare fractions
AC 19-21,
SRB pg. 246-247,
MM pg. G22,
fractions cards from Lesson 5-2

</td>
<td>

Math Minute-
Practice mental math strategies
Exploring Shape and Volume
Solve a liquid volume problem
MJ2 pg. 236,
Three 1-liter containers of different shapes
Math Boxes
MJ 2: pages 235–237, 229 (optional),
Activity Sheets 19–21 (optional)
Home Link 7.7
MM page 247

</td>
</tr>
<tr>
<td>ELL Support:
Scaffold the terms greater than and less than by restating with the terms more, larger, and smaller. Use a number line for a visual</td>
<td>Readiness: Comparing Fractions
slate</td>
<td>Enrichment: Solving Fraction strips Problems
● Activity Card 82,
● Index cards - labeled ½. 1, and 0
● 10 sided dice</td>
<td>Extra Practice: Comparing Fractional Distances
MM page 245</td>
</tr>
<tr>
<td colspan="4">Assessment: Page 677. MM page G22. Observe students to use same visual representations to compare two fractions with the same denominators or same numerators and to record their comparisons with number sentences using < = ></td>
</tr>
</table>

Lesson 7-8 : Finding Rules for Comparing Fractions **Open Response- 2 DAYS**			TE pages 678-687
Objective: SWL to: **Day 1:** Order fractions with the same numerator and write a rule for ordering similar sets of fractions. **Day 2:** Analyze and discuss others' rules and revise their work.			
Math Masters: pages TA6; TA42 (optional)	**Activity Card:** 82	**Manipulatives:** Fraction circles	**Other Materials:** ● Class Fraction Number-Line Poster, ● fraction strips, ● fraction cards, ● Class Data Pad, ● children's work from Day 1
Vocabulary:			
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.3a** understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.3b** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **3.NF.3d** compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.			

<table>
<tr><th>Warm Up 5 minutes</th><th colspan="2">2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr><td>Mental Math and Fluency:
Count by fractions and clap the number of wholes</td><td colspan="2"><u>Day 1</u>
● Math Message: Day 1
Write a rule to determine whether a fraction is greater than or less than ½
MJ2 pages 229,238
Class fraction Number Line Poster
fraction circles,
fractions strips,
fractions cards
● Comparing Fractions to ½
Discuss their rules
MJ2 page 238,
Class Data Pad
● Solving the Open Response Problem
Write rules for ordering fractions
MJ2 page 223-235,
MM page 243
Class Fraction-Benchmarks Poster,
● Introducing Fraction Top It
Compare fractions
MJ2 page 229,
MM pages 248-249
fractions cards,
Class Fraction-Benchmarks Poster
<u>Day 2- Reengagement</u>
● Setting Expectations
review open response problem
● Reengaging in the Problem
Discuss how they ordered the fractions and analyze others’ rules
● Revise Work from Day 1</td><td>● Math Minute-
Practice mental math strategies
● Exploring Shape and Volume
Solve a liquid volume problem
MJ2 page 236
Three 1-liter containers of different shapes
● Math Boxes
● MJ 2: pages 229, 238
● Home Link
● MM pages 250-251</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment:</td><td>Extra Practice:</td></tr>
<tr><td colspan="4">Assessment: Page 686. Collect and review children’s revised work. Expect improvement of their work based on the class discussion. Fractions in Problems 1 and 2 should be correctly ordered. Use rubric on page 684 to evaluate revised student work.</td></tr>
</table>

Lesson 7-9: Locating Fractions on Number Lines			TE pages 688-694
Objective: SWL to partition distances to locate fractions on number lines.			
Math Masters: pp. 252–257; G22	**Activity Card:** 82	**Manipulatives:** ● Fraction Quick Look Cards 165, 167, 169, ● pattern-block triangles (optional)	**Other Materials:** ● Class Fraction Number-Line Poster, ● number line from 0 to 1, ● fraction strips (optional), ● fraction cards
Vocabulary:			
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.3a** understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Identify unshaded regions of Fraction Quick Looks ● Fraction Quick Look Cards 165, 167, 169	● **Math Message:** Locate 1/2 on a number line MJ2 page 240 ● **Locate 1/2 on a number line** Locate ½ on different number lines MM page 255, MJ2 page 240 ● **Locating fractions on Number Line** Partition wholes on number lines and locate given fractions MJ2 page. 229,, Class Data Pad Class Fraction Number-Line Poster, number line from 0 to 1, fraction strips (optional), fraction cards		● **Math Minute-** Practice mental math strategies ● **Playing Fraction Top It** Compare fractions MJ2 AC sheets 19-21, SRB page 246-247, MM page G22, fraction cards ● **Math Boxes** ● *MJ 2:* pages 229, 240–242 ● **Home Link** MM page 257
ELL Support: Scaffold the term locate by relating it to the words find and where.	**Readiness:** **Locating and Representing Fractions** MM page 252	**Enrichment**: **Partitioning on a Number Line** MM page 253	**Extra Practice:** **Location Equivalent Fractions** ● MM page 254 ● fraction cards
Assessment: Page 692. MJ2 page 241. Children refer to their Fraction Number Line Poster or the class poster to successfully complete Problems 3 and 4.			

Lesson 7-10: Justifying Fraction Comparisons	TE pages 694-699
Objective: SWL to make and justify fraction comparisons.	

Math Masters: pages 258–259; G16	**Activity Cards:** 83-84	**Manipulatives:** ● Fraction Quick Look Cards 164, 165, 174, ● fraction circles	**Other Materials:** ● Class Fraction Number-Line Poster, ● fraction strips, ● straightedge, ● Facts Strategy Logs (optional), ● slate, ● fraction cards, ● comparison-symbol cards, ● paper (optional), ● scissors (optional), ● *The Area and Perimeter Game* Action Deck, Deck B
Vocabulary: equivalent			
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.			

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Identify unshaded regions of Fraction Quick Looks
● Fraction Quick Look Cards 164, 165, 174</td>
<td>● Math Message:
Use fraction circles to solve a number story
● Modeling Fraction Comparisons
Share strategies for comparing fractions using fraction tools (fraction cards)
MJ2 page 229,
Facts Strategy Logs (optional),
● Modeling Fraction Equivalence
Find and justify equivalent fractions using fraction tools (fraction strips)
MJ2 pages 229, 243
MM page 258
circles
straightedge
● Justifying Fraction Comparisons
Generate and justify fraction comparisons using fraction tools
MJ2 pages 229, 244
fraction circles
fraction strips</td>
<td>● Math Minute-
Practice mental math strategies
● Playing The Area and Perimeter Game
Find the areas and perimeters of rectangles
SRB pages 230-231,
MM page G16,
The Area and Perimeter Game Action Deck and Deck B,
Facts Strategy Log
● Math Boxes
MJ 2: pages 229, 243–245
● Home Link:
MM page 259</td>
</tr>
<tr>
<td>ELL Support:
Scaffold the term compare and the process of comparing by using visual aids and “think-aloud” options that include the terms alike, like, same, and different</td>
<td>Readiness:
Playing Fraction Top It
● Compare fractions MJ2 AC sheets 19-21,
● SRB pages 246-247,
● MM page G22,
● fraction cards</td>
<td>Enrichment:
Extending Fraction Comparisons
● Activity card 83
● comparison-symbol cards,
● paper (optional),
● scissors</td>
<td>Extra Practice:
Justifying Fraction Comparisons
● straightedge,
● Facts Strategy Logs (optional),
● fraction cards,
● comparison-symbol cards,
● paper</td>
</tr>
<tr><td colspan="4">Assessment: Page 698. MJ2 page 244. Children use fraction tools to generate a pair of equivalent fractions in problem 1</td></tr>
</table>

Lesson 7-11 : Fractions in Number Stories			TE pages 700-706
Objective: SWL to solve fraction number stories.			
Math Masters: pages 260–262; TA13; TA15 (optional)	**Activity Card:**	**Manipulatives:** ● ruler, ● fraction circles	**Other Materials:** ● Class Fraction Number-Line Poster ● slate, ● fraction strips, ● scissors
Vocabulary:			
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. **3.NF.3d** compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **3.G.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Identify unshaded regions Compare fractions to ½ ● Class Fraction Number-Line Poster	● **Math Message:** Draw and partition a line segment -ruler/slate ● **Making Sense of a Fraction** Make sense of and solve a fraction number story slate ● **Solving Fraction Number Stories** Solve fraction number stories MJ2 pg. 246 Class Fraction Number-Line Poster		● **Math Minute-** Practice mental math strategies ● **Locating Fractions on Number Line** Use partitioning to help locate fractions MJ3 page 247 ● **Math Boxes** *MJ 2:* pages 229, 246–248 ● **Home Link:** MM page 262
ELL Support: Scaffold the content of the number stories by providing a variety of visual aids.	**Readiness:** **Modeling Fraction Stories with Pancakes** MM page TA13	**Enrichment:** **Solving More Fraction Number Stories** ● MJ2 page 229 ● MM page 260 ● Fraction strips ● fraction circles	**Extra Practice- Solving Art Class Fraction stories** ● MJ2 page 229 ● MM page 261 ● Fraction strips ● fraction circles
Assessment: Page 698. MJ2 page 244. Children use fraction tools to generate a pair of equivalent fractions in problem 1			

Lesson 7-12: Fractions of Collections			TE pages 707-711
Objective: SWL to solve fraction number stories.			
Math Masters: ● pages 263–265; ● G20 (optional)	**Activity Card:**	**Manipulatives:** per child: 12 counters	**Other Materials:** ● Slate, ● Fact Triangles,

• *Assessment Handbook* pages 136–142 (optional)			• calculator, • Fact Strategy Wall

Vocabulary:

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: • Solve equal sharing problems • slate	• **Math Message:** Solve a fraction problem counters • **Identifying Fractions of Collections** Identify fractions of collections using counters 12 per student • **Naming Fractions of Collections** Name fractions of collections MJ2 page 249 Counters: 12 per child	• **Math Minute-** Practice mental math strategies • **Game – Beat the Calculator** • **Practice Multiplication Facts** SRB page 237 MM page 20 Assessment Handbook pages 136-142 Fact triangles calculator • **Math Boxes** *MJ 2:* pages 249–250 • **Home Link:** MM page 265

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Scaffold the term collection by showing examples of items grouped together. Think aloud using the terms like and alike to describe the collections.	**Sharing Equally with Groups** counters	**Solving a Fraction Puzzle** • MM page 263 • counters	**Using Fractions to Name Parts of a Set** • MM page 264 • Counters: 25 per child

Assessment: Page 710. MJ2 page 249. Observe how students solve problems 1-4 on journal page 249. Equal Sharing is objective.

Lesson 7-13 (Day 1): Progress Check Unit 6 Progress Check			TE pages 712-719
Objective: SWL to correctly answer Unit Assessment questions			
Math Masters: *Assessment Handbook* pages 69–77	**Activity Card:**	**Manipulatives:** fraction circles	**Other Materials:** • Class Fraction Number-Line Poster • fraction strips

Vocabulary:

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NF.2a represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
3.NF.3a understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3.NF.3d compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency:	**Day 1 Warm Up-** ● Student Self-Assessment ● Complete Unit 6 Assessment ● Check Differentiation Section for Adjusting Assessment **Day 2- Open Response** ● Solve Open Response Problem ● Discuss the Problem	● **Math Boxes-** MJ 2 Page 251 Preview unit 8 ● **Home Link:** Unit 8 Letter to Parents

ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**

Assessment: Unit 7 Assessment

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 2* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 7.1-7.13 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	*Give Me Half!* by Stuart Murphy *The Lion's Share* by Matthew McElligott https://www.youtube.com/watch?v=Jsi2AkmwI6A (Comparing Fractions) https://www.youtube.com/watch?v=5AVjBFP4MRg (Real Life experiences requiring fractions- Connecting application to life skills)

Unit 8 Plan	Multiplication and Division
Suggested Time Frame	14 days including "Flex Days"

Stage 1: Desired Results
Overview / Rationale
In this unit, children develop strategies for solving extended multiplication and division facts while recognizing factor pairs. Children will also examine the attributes and measurements for polyhedrons to reinforcing their knowledge of measuring to the closest fraction on a ruler.

New Jersey Student Learning Standards for Mathematics
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.5** Apply properties of operations as strategies to multiply and divide. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.NBT.1** Use place value understanding to round whole numbers to the nearest 10 or 100. **3.NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.NF.1** Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **3.NF.2a** Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.2b** Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. **3.NF.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **3.NF.3a** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.3b** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Technology Integration

__X__ **8.1 Educational Technology:**
All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.

- Student Websites
- Teacher Websites
- SMART board

____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming**
All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	Enduring Understandings
● Is there an importance to understanding and recognizing 3- dimension and 2-dimensional shapes as compared to real life situations? ● Why are there multiple strategies for understanding and completing multiplication and division problems? What strategies can be used to complete problems? ● What is the appropriate time to use a mathematical conjecture or a mathematical argument?	*Students will understand that…* ● Just as we use fractions in the everyday world, such as in advertisements, on measuring tools, in recipes, we use 3-dimensional and 2 dimensional shapes of varying sizes. These type of shapes often allow us to understand spatiality and measurement. ● Strategies for understanding and completing multiplication and division problems vary per person. What works for one student may not work for the next; however, finding ways to break numbers apart or understanding divisibility rules will aid easier application of multiplication and division. Some rules include using unit and base ten blocks to share out the total number equally, representing multiplication as an array, and even representing division as fractional parts. ● A conjecture is an explanation as a result of using information in the problem and mathematical thinking, where as a mathematical argument is not like a social argument or disagreement, rather mathematical arguments use mathematical reasoning to tell or show whether a conjecture is right or wrong. We start a lesson making conjectures, but by the end of a lesson we are more able to make a mathematical argument based on fact and logic taught throughout our lesson. Once we have an understanding of a concept, you can make an argument for or against a question based on mathematical reasoning.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• That the lines in between the numbers on a ruler represent fractional parts of a whole. • To use the multiplication and division strategies that work best to complete a task. • Money can be broken into smaller parts so that fractions of dollars can still be shared equally. • The difference between a conjecture and an argument in relation to mathematics and language arts.	• Use a ruler to measure lengths to the nearest 1/4 inch. • Develop strategies for solving extended multiplication and division facts. • Recognize and determine factor pairs of counting numbers within 100. • Model equal-sharing situations involving money amounts. • Apply understanding of factors while playing Factor Bingo. • Extend work with fraction comparisons and equivalents. • Examine features of rectangles with given area measurements.

• To identify shapes as 3-dimensional or 2-dimensional referring to the vertices, bases, and sides • The following vocabulary meanings: argument, base of a prism, conjecture, edge, extended fact, face, factor pair, multiple of 10, plot, polyhedron, prism, product, 3-dimensional figure, 2-dimensional figure and vertex	• Explore the attributes of prisms.

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**			CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		X	CRP2. Apply appropriate academic and technical skills.
X	Money Management			CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management			CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
X	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration			CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:

NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

3NJSLS .SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others

Stage 2: Acceptable Evidence

Assessments	
Formative Assessment(s) and Evidence of Learning: • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips / Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessment(s) and Performance Task(s):** • End of Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 8.1 (3.NF.1, 3.NF.3c, 3.MD.4):** Measure line segments and paths to the nearest 1/4 inch. First allow students to explore a ruler marked with whole, half, a fourth, and an eighth, review what these marking represent on the ruler.
- **Lesson 8.2 (3.OA.6, 3.OA.7, 3.NBT.3):** Discuss and develop strategies for solving extended facts. Review solving number stories. Use base 10 blocks to represent division of multiples of ten.
- **Lesson 8.3 (3.OA.4, 3.OA.6, 3.OA.7, 3.NBT.3):** Identify factor pairs for products by relating factors and fact families. Distribute and display the Multiplication/Division Facts Table and review fact families and pairs found on the table. After review, students will rely on their ability to quickly determine the answers to multiplication or division facts, for the rest of the lesson. Remind children that they can use basic facts to help solve extended facts and to find factor pairs of larger products.
- **Lesson 8.4 (3.OA.2, 3.OA.3): Day 1** Creating conjectures and arguments based on a mathematical situation set up in the classroom using chairs. Be sure to distinguishing the meaning of a conjecture and allow students to question its meaning and use each other's ideas to create the meaning of the word.
- **Lesson 8.4 (3.OA.2, 3.OA.3): Day 2** Work in partners to create drawings, words, or numbers to make student arguments and conjectures clear and complete. . Have children discuss with partners before sharing with the whole group. This sharing should look like peer review/ partner talk from Language Arts. Ask students to reflect on their work and revisions.
- **Lesson 8.5 (3.OA.4, 3.OA.6, 3.OA.7):** Play Finding Factors and Factor Bingo to reiterate multiplication and division facts. Be sure to model any mishaps that may take place while playing in small groups or partnerships.
- **Lesson 8.6 (3.OA.2, 3.OA.3, 3.OA.7):** Discuss and solve sharing problems using money. Provide students with a sharing example for money (example: *4 friends have six $10 bills to share equally. How much money will each friend get? Use $10 and $1 bills to act out the problem)*, and ask them what strategies they might use to solve this problem. Compare solutions and strategies for money sharing then ask students to complete Math Journal page 266, number 1, as an informal, and quick, assessment of individual student knowledge.

- **Lesson 8.7 (3.NF.2a, 3.NF.2b, 3.NF.3a, 3.NF.3d):** Build arrays using unit and base ten cubes and apply this concept to create rectangles using given area measures. Complete Math Journal page 269 #1 by displaying fraction circle pieces. Ask students to figure out what fraction of the whole is missing and find equivalents. Fill in the missing parts with student suggestions making sure to model recording an equivalent fractions number sentence.
- **Lesson 8.8 (3.G.1):** Identify shapes as 3-dimensional or 2-dimensional referring to the vertices, bases, and sides. Create 3 dimensional or 2 dimensional shapes using straws and twist ties. Remind students to discuss the attributes of rectangular prisms and look for real-world examples.

Lesson 8-1: Measuring to the Nearest 1/4 Inch			TE pages 732-737
Objective: SWL to use rulers to measure to the nearest 1/4 inch.			
Math Masters: ● pp. 270–275; ● TA20 (optional); ● TA30 (optional); ● TA43 (1 copy for every 4 children)	**Activity Card:** 85	**Manipulatives:** ● Quick Look Cards 172, 173, 176, ● fraction circles (optional), ● Pattern-Block Template* or ● 12-inch ruler (optional)	**Other Materials:** ● Class Fraction Number-Line Poster, ● scissors, ● fraction strips (optional)
Vocabulary:			
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. **3.MD.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Compare images on Fraction Quick Looks to 1/2 ● Quick Look Cards 172, 173, 176	● **Math Message:** Compare a ruler to a number line MM page TA43 Class Fraction Number line Poster ● **Examining a New Ruler** Explore a ruler marked with whole, ½, ¼ and 1/8 inches MM page TA20, Class Fraction Number line Poster ● **Measuring to the nearest ¼ Inch** Measure line segments and paths to the nearest ¼ inch MJ2 page 252, counters, Pattern-Block Template* or 12-inch ruler		● **Math Minute-** Practice mental math strategies ● **Matching Fractions on a Number Line** Match fractions to their location on a number line MJ2 page 253 Class Fraction Number-Line Poster ● **Math Boxes** *MJ 2* pages 252–254 ● **Home Link:** MM page 275
ELL Support: Scaffold the phrases distance from and distance between using gestures, number lines, and think alouds.	**Readiness:** **Comparing Number lines to Rulers** MM pages 270-271	**Enrichment:** **Drawing a Path to Buried Treasure** ● MM page 272 ● Activity Card, page 85 ● pattern blocks	**Extra Practice:** **Using Completing a Story with Measures** ● MM page 273 ● SRB page 288
Assessment: Page 735. MJ2 page 252. Ruler D. Observe students' ability to measure accurately the line segments in Problems 2-3 on page 252.			

Lesson 8-2 : Extended Facts: Multiplication and Division	TE pages 732-743

Objective: SWL to develop strategies for solving extended multiplication and division facts.

Math Masters:	**Activity Card: 85**	**Manipulatives:**	**Other Materials:**
pages 276–278; G7		tape measure or ruler two 6-sided dice per group: 15 cubes 21 longs 15 flats	Slate Books calculator

Vocabulary: multiples of ten, extended facts

3.OA.6 Understand division as an unknown-factor problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.

Warm Up 5 minutes	**2. Focus 30-40 minutes**	**3. Practice 15-20 minutes**
Mental Math and Fluency: Identify related multiplication facts to help solve division facts slate	**Math Message:** Solve a number story involving extended facts - slate **Exploring Larger Factors** Share strategies for solving a number story -slate **Multiplying and Dividing Multiples of 10** Develop strategies for solving extended facts –MJ2 pg 255-256, base 10 blocks	**Math Minute-** Practice mental math strategies **Measuring Book Heights** Plot measurements on a class line plot MJ2 page 257 tape measure ruler books **Math Boxes** *MJ 2* pages 255–258 **Home Link:** MM page 278

ELL Support:	**Readiness:**	**Enrichment:**	**Extra Practice:**
Build on everyday use of the term extended to prepare children for understanding the mathematical use, as in extended numbers and extended facts. Use concrete materials, demonstrations, and teacher think-alouds to introduce the term.	**Using Multiples of 10** MM page 276 base 10 blocks calculator	**Solving a Number Story using Extended Facts** MM pg. 277	**Playing Roll to 1,000 with Multiplication** MM page G7 SRB pages 253-254 Two 6-sided dice

Assessment: Page 743. MJ2 page 256. Check answers for Problems 1a and 2-5 for strategies

Lesson 8-3: Factors of Counting Numbers			TE pages 732-743
Objective: SWL to find factors of counting numbers.			
Math Masters: ● Pages 279–281; TA3; TA9; TA26; G8; G23	**Activity Card:** 86	**Manipulatives:** ● number cards 1–20, ● counters ● 2 different colored counters	**Other Materials:** ● Slate ● Scissors ● glue or tape ● penny ● calculator (optional) ● 2 different colored crayons
Vocabulary: factor pair			
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency: ● Write missing factors for number statement ● slate	● **Math Message:** Discover ways to package 16 bottles without leftovers slate, counters ● **Recognizing Factors** Find factors for basic products MM page TA9/26 ● **Finding Factors** Relate factors and fact families MM page 259 ● **Recognizing Factor Pairs** Identify factor pairs for products MJ2 page 259		● **Math Minute-** Practice mental math strategies ● **Practicing the Break-Apart Strategy** Break apart arrays to show the product of 6 x 7 MJ2 page 280 tape, scissors, glue ● **Math Boxes** *MJ 2* pages 259–260 ● **Home Link:** MM page 278
ELL Support: Left over with concrete demonstrations and think-alouds. Use items such as pattern blocks and an empty box.	**Readiness:** **Playing Array Bingo** ● SRB pages 232-233 ● MM page G8 ● Number cards 1-20	**Enrichment:** **Finding Factor Pairs** ● MM page 279 and TA9 ● Activity Card 86	**Extra Practice:** **Playing Finding Factors** ● MM page G23 ● SRB page 242 ● two different colored crayons or counters
Assessment: Page 748. MJ2 page 259. Check for completion of at least one number sentence per product in Problems 1-5.			

Lesson 8-4: 2-Day Lesson: Setting Up Chairs	TE pages 750-755

Objective: SWL to:
Day 1: Use clues to make conjectures and arguments about the total number of chairs in a room.
Day 2: Discuss some conjectures and arguments, and children revise their work.

Math Masters:	**Activity Card:** 86	**Manipulatives:**	**Other Materials:**
pages 282–283; TA6; TA42 (optional)		per partnership: 35 counters	● Slate ● Standards for Mathematical Practice Poster, ● children's work from Day 1

Vocabulary: conjecture, argument

3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.6 Understand division as an unknown-factor problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.

<table>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td colspan="2">3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Record factor pairs
● slate</td><td colspan="2"><u>Day 1</u>
● Math Message:
Use clues to make mathematical arguments for or against a conjecture
MJ2 page 261
counters
● Checking a Conjecture
Share their mathematical arguments
MM page 261
STB page 12
Standards for Mathematical Practice Poster
● Solving the Open Response Problem
Making conjectures
test and make arguments to justify their claims
MM page 282-283
counters
<u>Day 2- Reengagement</u>
● Setting Expectations-
Discus what it means to make a conjecture and how to use mathematical reasoning to make arguments for or against conjectures
Discussion Poster
● Reengaging in the Problem
Analyze conjectures and arguments
● Revising Work
Revise their arguments
Use Rubric to assess</td><td colspan="2">● Math Minute-
● Practice mental math strategies

● Practicing the Break-Apart Strategy
● Break apart arrays to show the product of 6 x 7
● Mj2 pg. 280, tape, scissors, glue

● Math Boxes- Math Journal 2: pgs. 262
● Home Link: Homework
● MM pg</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment-</td><td colspan="2">Extra Practice- Playing Finding Factors</td></tr>
<tr><td colspan="5">Assessment: Page 758. Rubric page756. Collect and review children’s revised work. Review drawings of arrays, words or numbers to model the number story in their arguments</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 8-5: Playing Factor Bingo</td><td>TE pages 760-765</td></tr>
<tr><td colspan="4">Objective: SWL to learn to play Factor Bingo and discuss how to find products for a given factor.</td></tr>
<tr><td>Math Masters:
pages 285–286;
TA44; G24</td><td>Activity Card: 87</td><td>Manipulatives:
● number cards 2–10 (4 of each),
● per player: 12 counters</td><td>Other Materials:
● slate
● fraction tools</td></tr>
<tr><td colspan="4">Vocabulary: multiples, products, factor</td></tr>
<tr><td colspan="4">3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.6 Understand division as an unknown-factor problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve extended multiplication facts
● slate</td><td colspan="2">● Math Message:
List multiples of 4
● Introducing Factor Bingo
Lean the rules for Factor Bingo
MJ2 page 263
SRB page 240-241
MM G24
number cards 2–10 (4 of each)
per player: 12 counters
● Playing Factor Bingo
Practice finding factors of numbers
MJ2 page 263, 2–10 (4 of each)
per player: 12 counters</td><td>● Math Minute-
Practice mental math strategies
● Reviewing Fractions
Practice comparing fractions
MJ2 page 264
math tools
● Math Boxes
MJ 2 pages 263–265
● Home Link:
MM page 286</td></tr>
<tr><td>ELL Support:
Scaffold the terms factor and product to prepare students to play Factor Bingo. Display a multiplication fact. Circle and label the factors and then underline and label the product. Draw a square around the multiplication symbol and label it groups of, times, and multiplied by. Point to the labels as you explain the direction for the game.</td><td>Readiness:
Finding Factors</td><td>Enrichment:
Playing Speed Bingo
● MM page G24
● Activity Card 87</td><td>Extra Practice:
Identifying Multiples
MM page 285</td></tr>
<tr><td colspan="4">Assessment: Page 764. MJ2 page 263. Check to see if students successfully identify and cover products of basic facts on their game mat for factors 2-10.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 8-6: Sharing Money</td><td>TE pages 766-771</td></tr>
<tr><td colspan="4">Objective: SWL to model equal-sharing situations with $10 and $1 bills.</td></tr>
<tr><td>Math Masters:
pages 287–289; TA45–TA48; G20 (optional)</td><td>Activity Cards:
88-89</td><td>Manipulatives:
number cards 1–9 (4 of each)</td><td>Other Materials:
● Slate
● quarter-sheets of paper (optional)
● Fact Triangles
● Fact Strategy Wall
● Calculator
● per partnership:
  ● eight $10 bills
  ● twenty-four $1 bills (from MM pages TA45–TA48)
  ● 1 half-sheet of paper labeled with “Bank”</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
</table>

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Solve equal sharing number stories
● slate</td>
<td>● Math Message:
Solve a number story about sharing money
See Resources** per partnership: eight $10 bills; twenty-four $1 bills
● Sharing Money
Compare solutions to a sharing situations
per partnership: eight $10 bills; twenty-four $1 bills
● Sharing and Trading Money
Solve Sharing problems
MJ2 page 266
per partnership:
eight $10 bills
twenty-four $1 bills (MM: pages TA45–TA48)
1 half-sheet of paper labeled with “Bank”</td>
<td>● Math Minute-
Practice mental math strategies
● Game – Beat the Calculator
● Practice Multiplication Facts
SRB page 237
MM page 20
Assessment Handbook pages 136-142
Fact triangles
calculator
● Math Boxes
MJ 2 pages 266–267; 298–301
● Home Link:
MM page 289</td>
</tr>
<tr>
<td>ELL Support:
To demonstrate the meaning of sharing with remainders, use think-alouds and concrete objects.</td>
<td>Readiness: Trading Money
MM pages TA45-48,</td>
<td>Enrichment: Buying Tickets
● MM page 288
● number cards 1–9 (4 of each)
● calculator
● per partnership:
● eight $10 bills
● twenty-four $1 bills</td>
<td>Extra Practice: Sharing Money with a Partner
● MM page 287
● Calculator
● per partnership:
● eight $10 bills
● twenty-four $1 bills
● Activity Card 89</td>
</tr>
<tr><td colspan="4">Assessment: Page 770. MJ2 page 266. Check to see if students successfully model and solve Problems 3-4.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 8-7: Exploration - Exploring Number Lines, Fractions, and Area</td><td>TE pgs.: 772-779</td></tr>
<tr><td colspan="4">Objective: SWL to model equal-sharing situations with $10 and $1 bills.</td></tr>
<tr><td>Math Masters:
pages 290; 291–293 (optional); 294; TA49–TA50; G24</td><td>Activity Cards:
90–93</td><td>Manipulatives:
● 1 mL dropper,
● benchmark beakers,
● geoboard
● rubber bands,
● fraction circles,
● number cards 2–10 (4 of each)
● centimeter cubes
● per child: 12 counters</td><td>Other Materials:
● Class Fraction Number-Line Poster (optional)
● painter’s-tape number line (see Lesson 8-7 Before You Begin)
● fraction card
● chart paper (optional),
● scissors
● tape or glue</td></tr>
<tr><td colspan="4">Vocabulary: plot</td></tr>
<tr><td colspan="4">3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
</table>

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Estimate volume to solve one step problems
● 1 mL dropper
● benchmark beakers</td>
<td>● Math Message:
Imagine sixths on a number line
● Locating Fractions on a Number Line
Discuss which fractions are closest to 0 and 1
Class Fraction Number Line Poster
● Exploration A: Plotting Fractions
Plot fractions on a number Line
MJ2 page 229
painter’s-tape number line (see Lesson 8-7 Before You Begin)
fraction card, chart paper (optional), scissors, tape or glue
● Exploration B: Create rectangles using given area measures
MJ2 page 268, 266
MM page 291
Geoboard & rubber bands
● Exploration C: Exploring Equivalent Fractions
● Find equivalent fractions using fraction Circles.
● MJ2 pages 269-270
● MM pages 292-293
● Fraction circles</td>
<td>● Math Minute-
Practice mental math strategies
● Play Factor Bingo
Practice finding factors of numbers
SRB pages 240-241
MM page G24
number cards 2–10 (4 of each)
centimeter cubes
per child: 12 counters
● Math Boxes
MJ 2 pages 229; 268–271
● Home Link:
MM page 294</td>
</tr>
<tr>
<td>ELL Support:
To help students understand the Math Message, restate the term imagine as “to see in your head.” Close your eyes and think aloud to describe a classroom object</td>
<td>Readiness: Building Arrays with Cubes
centimeter cubes</td>
<td>Enrichment: Completing the Whole
● Activity Card 93
● MM page 290
● MJ2 inside back cover</td>
<td>Extra Practice: Playing Fraction Number Line Squeeze
● SRB page 245
● MM page TA50
● Activity Card 89
● scissors, tape or glue
● per child: 12 counters</td>
</tr>
<tr><td colspan="4">Assessment:</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 8-8: Solid Shapes</td><td>TE pages 779-787</td></tr>
<tr><td colspan="4">Objective: SWL to explore the shared attributes of prisms.</td></tr>
<tr><td>Math Masters:
pages 295–296; TA35</td><td>Activity Card:
94</td><td>Manipulatives:
● Rectangular and nonrectangular prisms (see Lesson 8-8 Before You Begin)
● Containers
● Water
● paper towels
● dish tub
● paper,
● scissors, tape or glue,
● per child: 18 twist ties</td><td>Other Materials:
● Class Fraction Number-Line Poster (optional)
● painter’s-tape number line (see Lesson 8-7 Before You Begin)
● fraction card
● chart paper (optional),
● scissors, tape or glue</td></tr>
<tr><td colspan="4">Vocabulary: 2-dimensional, 3-dimensional, polyhedron, faces, prisms, bases, edge, vertex</td></tr>
<tr><td colspan="4">3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</td></tr>
</table>

Warm Up 5 minutes	2. Focus 30-40 minutes	3. Practice 15-20 minutes
Mental Math and Fluency: ● Find fractions of collections ● slate	● **Math Message:** Compare 2-D and 3-D shapes shape pattern blocks ● **Exploring 2-D and 3-D Shapes** Compare a square and a prism. Square pattern blocks ● **Constructing Prisms and Tracing Faces** Build pattern block prisms and trace each face. MJ2 page 272 pattern blocks, tape ● **Describing Faces of Prisms** Identify bases and name prisms MJ2 page 272 ● **Exploring Prisms** Discuss attributes of rectangular prisms and look for real world examples MM page TA35 pattern blocks base-10 thousands cube rectangular and non-rectangular prisms	● **Math Minute-** Practice mental math strategies ● **Estimating and Measuring Liquid Volume** Estimate and measure liquid volume of containers. Benchmark beakers, Containers Water paper towels dish tub ● **Math Boxes** *MJ 2* pages 272–273 ● **Home Link:** MM page 296

ELL Support:	Readiness:	Enrichment:	Extra Practice:
To help students describe attributes of prisms, prepare an Anchor chart with these terms: edge, side, face, vertex (vertices), base, and parallel. Add corresponding illustrations.	**Constructing Polygons with Straws and Twist Ties** ● AC – 57, ● number cards 4-8 (4 of each), ● straws ● twist ties	**Creating a Net** ● Activity Card 94, ● pattern blocks, ● prisms, ● scissors ● tape	**Constructing a Pentagonal Prism** ● MM pg. 295 ● scissors, ● tape or glue

Assessment: Page 282. MJ2 page 272. Pattern blocks –Identification of polygons that form the faces of prisms using their drawings

Lesson 8-9 Two-Day Objective: Unit 8 Progress Check			TE pages 788-793
Objective: SWL to correctly answer Unit Assessment questions			
Math Masters: *Assessment Handbook:* pages 79–84	**Activity Card:**	**Manipulatives:**	**Other Materials:**
Vocabulary:			
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.8** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).) **3.OA.9** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. **3.NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.MD.7c** Use tiling to show in a concrete case that the area of a rectangle wit whole-number side lengths a and b +c is the sum of a x b and a x c. Use area models to represent the distributive property in a mathematical reasoning.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
Mental Math and Fluency:	**Day 1 - Warm Up** **Student Self-Assessment** Complete Unit 6 Assessment Check Differentiation Section for Adjusting Assessment **Day 2 - Cumulative Assessment** Complete Cumulative Assessment		**Math Boxes: 6.9** **Home Link:** Unit 7 Letter to Parents
ELL Support:	**Readiness:**	**Enrichment-**	**Extra Practice-**
Assessment: Unit 8 Assessment			

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 2* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 8.1-8.9 Teaching Masters, Game Masters, Assessment Masters
Literacy and Video Connections	https://www.teachingchannel.org/videos/common-core-teaching-division (Strategies for Division) *My Half Day* by Doris Fisher and Dani Sneed

Unit 9 Plan	Multi-digit Operations
Suggested Time Frame	14 days including "Flex Days"

Stage 1: Desired Results
Overview / Rationale
In this unit, children further develop their understanding of multiplication and division as they apply basic fact knowledge to mentally solve number stories and multiply larger factors. They also interpret length-of-day data and work to calculate elapsed time more efficiently.

New Jersey Student Learning Standards for Mathematics
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. **3.OA.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. **3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.5** Apply properties of operations as strategies to multiply and divide. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.NBT.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.NF.1** Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **3.NF.2a** Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. **3.NF.3d** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **3.MD.1** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.

3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg) and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. e.g. by using drawings to represent the problem.
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
3.MD.7c Use tiling to show in a concrete case that the area of a rectangle wit whole-number side lengths a and b +c is the sum of a x b and a x c. Use area models to represent the distributive property in a mathematical reasoning.
3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Technology Integration

__X__ **8.1 Educational Technology:**
All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.

- Student Websites
- Teacher Websites
- SMART board

____ **8.2 Technology Integration, Engineering, Design and Computational Thinking - Programming**
All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

INTEGRATED SOCIAL AND EMOTIONAL LEARNING COMPETENCIES
The following social and emotional competencies are integrated in this curriculum document:

Self-Awareness
_____Recognize one's own feelings and thoughts
_____Recognize the impact of one's feelings and thoughts on one's own behavior
_____Recognize one's personal traits, strengths and limitations
_____Recognize the importance of self-confidence in handling daily tasks and challenges

Self-Management
__x__Understand and practice strategies for managing one's own emotions, thoughts and behaviors
__x__Recognize the skills needed to establish and achieve personal and educational goals
__x__Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals

Social Awareness
__x__Recognize and identify the thoughts, feelings, and perspectives of others
_____Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds
_____Demonstrate an understanding of the need for mutual respect when viewpoints differ
_____Demonstrate an awareness of the expectations for social interactions in a variety of setting

Responsible Decision Making
__x__Develop, implement and model effective problem solving and critical thinking skills
_____Identify the consequences associated with one's action in order to make constructive choices
_____Evaluate personal, ethical, safety and civic impact of decisions

Relationship Skills
_____Establish and maintain healthy relationships
__x___Utilize positive communication and social skills to interact effectively with others
_____Identify ways to resist inappropriate social pressure
_____Demonstrate the ability to present and resolve interpersonal conflicts in constructive ways
_____Identify who, when, where, or how to seek help for oneself or others when needed

Essential Questions	Enduring Understandings
● Is there more than one way to approach a number story requiring mental math? ● Why is it important to understand time? ● What is the break-apart strategy for multiplication? ● Why is it crucial to be able to develop a mathematical answer through writing?	*Students will understand that…* ● There is more than one way to complete a number story requiring multiple steps; however, it is important to follow the order of operations to arrive at your final answer. ● During their explorations with time, it can be noted that there can be many conflicts that will arise when planning real world situations (examples- trips, field days, sporting events). Understanding how long a particular event might take and representing it across a period of time will allow students to appreciate time management and problem solving. ● Multi-digit multiplication can be broken apart according to place value and represented as an area model, thus serving as the break- apart strategy for multiplication. For example, 8x57 can be represented as 8x50 and 8x7. ● Although mathematics is number based, students need to be able to explain their concepts, motivations, and explorations of math through written word. Being able to write down their steps alleviates the possibility of skipping a crucial step, provides others with another way of completing a problem, and reinforces cross curricular focus.
Student Learning Targets / Objectives	
Students will know...	***Students will be able to…***
• To use drawings and equations with a symbol for the unknown number to represent the problem to solve multiplication and division problems. • Standard units of grams (g), kilograms (kg), and liters (l). • Properties of operations that require a certain order for the completion of mathematical equations and word problems. • How to use area models to represent the distributive property in mathematical reasoning. • That division is the process of equally sharing objects.	• Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. • Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. • Determine the unknown whole number in a multiplication or division equation relating three whole numbers. • Understand division as an unknown-factor problem. • Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

• That to solve word problems involving addition and subtraction of time intervals in minutes, they may represent the problem on a number line diagram. • Model real-world situations using graphs, drawings, tables, symbols, numbers, diagrams, and other representations. • Use structures to solve problems and answer questions.	• Measure and estimate liquid volumes and masses of objects. • Apply properties of operations as strategies to multiply and divide. • Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. • Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations. • Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. • Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. • Tell and write time to the nearest minute and measure time intervals in minutes.

In this unit plan, the following 21st Century Life and Careers skills are addressed:				
Check ALL that apply – **21st Century Themes**			**Indicate whether these skills are:** ● **E – encouraged** ● **T – taught** ● **A – assessed** **Career Ready Practices**	
9.1	**Personal Financial Literacy**			CRP1. Act as a responsible and contributing citizen and employee.
	Income and Careers		X	CRP2. Apply appropriate academic and technical skills.
X	Money Management			CRP3. Attend to personal health and financial well-being.
	Credit and Debt Management			CRP4. Communicate clearly and effectively and with reason.
	Planning, Saving, and Investing			CRP5. Consider the environmental, social and economic impacts of decisions.
	Becoming a Critical Consumer			CRP6. Demonstrate creativity and innovation.
X	Civic Financial Responsibility			CRP7. Employ valid and reliable research strategies.
	Insuring and Protecting		X	CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
9.2	**Career Awareness, Exploration, and Preparation**			CRP9. Model integrity, ethical leadership and effective management.
X	Career Awareness			CRP10. Plan education and career paths aligned to personal goals.
	Career Exploration			CRP11. Use technology to enhance productivity.
	Career Preparation			CRP12. Work productively in teams while using cultural global competence.

Interdisciplinary Connections

Other standards covered:

NJSLS 3.SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.
NJSLS 3.SL.1.c Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Stage 2: Acceptable Evidence

Assessments	
Formative Assessments • Assessment Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Home Links • Exit Slips/Slates Assessments • Self-Assessments • Games • Questioning	**Summative Assessments** • End of the Unit Assessments • Benchmark Assessments • Tests • Quizzes • Student Work Products

Stage 3: Learning Plan

- **Lesson 9.1 (3.OA.1, 3.OA.7):** Discuss strategies for comparing products of basic facts. Learn the rules and play *Product Pile-Up.* Model any problems that may arise as students play *Product Pile-Up.*
- **Lesson 9.2 (3.OA.3, 3.OA.4, 3.OA.6, 3.OA.7, 3.NBT.3, 3.MD.2):** Revisit the guide for solving number stories. Solve number stories with multiplies of 10. This lesson has a Social Studies/Science link as the number stories are about birds that are native to North America. Discuss with students the strategies that worked best for solving the number stories.
- **Lesson 9.3 (3.OA.3, 3.OA.5, 3.OA.7, 3.NBT.3, 3.MD.2):** Explore strategies for mental multiplication and apply such strategies to complete mental multiplication with larger factors. Emphasize breaking apart factors into numbers that can be multiplied mentally, such as 8×10 or 8×8. Ask: *Why would it be less efficient to break 8×16 into $8 \times 12 + 8 \times 4$?*
- **Lesson 9.4 (3.G.1, 3.G.2, 3.MD.1, 3.MD.2):** Assess elapsed time by planning a class field trip. Compare the physical mass of a bridge to discuss how the mass of an object can effect real life. Take apart and put together squares, emphasizing the importance of reading all the directions on Activity Card 99 and making a plan prior to cutting. Create small groups for students so that they can visit each exploration for this lesson.
- **Lesson 9.5 (3.OA.5, 3.OA.7, 3.OA.9, 3.NBT.3, 3.MD.7c):** Solve multiplication using an area model. Review the Break-Apart method for multiplication. Apply this method to a real life situation like finding the area of a garden. Encourage partnerships so that students work through the problems verbally to justify their findings.
- **Lesson 9.6 (3.OA.2, 3.OA.7): Day 1** Packing Apples Open Response. Create written responses to open ended questions requiring application of mathematical skills for division. The main idea of this open ended question is to use multiplication to solve division problems by telling students that they will solve a problem on a calculator that has a broken division key. Review the open ended question with students before they begin to answer or discuss any questions they may have.
- **Lesson 9.6 (3.OA.2, 3.OA.7): Day 2** Packing Apples Open Response. Analyze and discuss partnership learning and revise open ended responses with a partner. This partnership should look like peer review/partner talk practiced in Language Arts.

- **Lesson 9.7 (3.MD.1, 3.MD.3):** The Length of Day Project is being revisited in this less. Students should begin by sharing strategies for representing elapsed time and solving a few problems using the given Length of Day Data. Then, calculate lengths of days in world locations. Remind students they can draw a picture or graph to help organize their data from their Student Reference Book page 218. When discussing the answers, ask students to share the strategies and drawings that they used.

<table>
<tr><td colspan="3">Lesson 9-1: Playing Product Pile-Up</td><td>TE pages 806-811</td></tr>
<tr><td colspan="4">Objective: SWL to play a game to practice multiplication facts.</td></tr>
<tr><td>Math Masters:
pages 301–302</td><td>Activity Cards:
95–96</td><td>Manipulatives:
● number cards 1–10 (4 of each),
● counters (optional)</td><td>Other Materials:
● Slate,
● Fact Strategy Wall or My Multiplication Facts Strategy Logs 1–6 (optional),
● stapler, tape</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Record factor pairs of numbers
● slate</td><td colspan="2">● Math Message:
Find and compare products of basic facts
● Recognizing Greater Products
Compare a square and a prism.
Square pattern blocks
● Constructing Prisms and Tracing Faces
Discuss strategies for comparing products of basic facts
● Game: Introduce Product Pile Up
SRB page 252
number cards 1–10 (4 of each),
counters
Fact Strategy Wall or My Multiplication Facts Strategy Logs
Discuss effective strategies to play Product Pile Up</td><td>● Math Minute-
Practice mental math strategies
● Reviewing Area and Perimeter
Find the areas and perimeters of garden plots
MJ2 page 275
● Math Boxes
Math Journal 2:
pages 275–276, 298–301
● Home Link:
MM page 302</td></tr>
<tr><td>ELL Support:
Within the context of Product Pile-Up. Roleplay a round and think aloud, including the terms larger and smaller.</td><td>Readiness: Comparing Products Using Comparison Symbols
number cards 1–10 (4 of each),</td><td>Enrichment- Writing A Guide to Playing Math Games
● Activity Card 95
● MM page 301
● stapler
● tape</td><td>Extra Practice: Updating “My Multiplication Facts Inventory”
● Activity Card 96
● MJ2 page 298-301</td></tr>
<tr><td colspan="4">Assessment: Page 303. Observe if children can recognize factor pairs that result in greater products and fluently solve for products.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 9-2: Multiply and Divide with Multiples of 10</td><td>TE pages 812-817</td></tr>
<tr><td colspan="4">Objective: SWL to solve number stories by multiplying and dividing with multiples of 10.</td></tr>
<tr><td>Math Masters:
pages 303–304; 305 (optional); 306; TA8; G20 (optional)
Assessment Handbook:
pages 136–142</td><td>Activity Card:
97</td><td>Manipulatives:
base-10 blocks</td><td>Other Materials:
● Slate,
● objects with a mass of 10 kg and 10 g (optional)
● Fact Triangles
● calculator</td></tr>
<tr><td colspan="4">Vocabulary: extended multiplication facts, multiplication/division diagram</td></tr>
<tr><td colspan="4">3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.6 Understand division as an unknown-factor problem.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg) and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.</td></tr>
</table>

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Solve extended facts
● slate</td>
<td>● Math Message:
Identify birds that have masses of 10 kg and 10g.
MJ2 pages 277-278
● Exploring Masses of North American Birds
Examine a map and solve a multiplication problem about North American birds
MJ2 pages 277-278
MM page 305
objects with mass of 10 kg and 10g
● Making Sense of Number Stories
Guide to Solving Number Stories
MJ 2 pages 277-278
SRB page 30
● Solving Number Stories
Solve stories with multiples of 10
MJ2 page 279
SRB pages 273-276</td>
<td>● Math Minute-
Practice mental math strategies
● Game: Beat the Calculator
● Practice Multiplication Facts
SRB page 237
MM page 20
Assessment Handbook pages 136-142
Fact triangles
calculator
● Math Boxes
Math Journal 2: pages 277–280, 298–301
● Home Link:
MM page 306</td>
</tr>
<tr>
<td>ELL Support:
Scaffold the number-story contexts in this lesson by accompanying the oral and written stories with visual aids, such as the pan balances on Math Masters, page 305. This will help students attend to the mathematical content. Maintain a labeled display of terms mentioned in the stories for children to reference</td>
<td>Readiness:
Modeling Extended Multiplication Facts
● MM page 303
● base 10 blocks</td>
<td>Enrichment:
Solving Multistep Number Stories
MM page 304</td>
<td>Extra Practice:
Writing Number Stories with Multiples of 10
● Activity Card 97
● MJ2 pages 277-278
● MM page TA8</td>
</tr>
<tr><td colspan="4">Assessment: Page 816. MJ2 page 279. Observe if children can make sense of and solve Problems 1 and 2 on journal page.</td></tr>
</table>

Lesson 9-3: Using Mental Math to Multiply			TE pages 818-823
Objective: SWL to use mental steps to multiply problems involving larger factors			
Math Masters: ● Pages 307–308; ● TA35 ● *Assessment Handbook:* pages 136–142 (optional)	**Activity Card:** 97	**Manipulatives:** ● number cards 0–10 (4 of each) ● number cards 11–19 (optional)	**Other Materials:** ● slate ● Literature Link: *One Grain of Rice* by Demi (optional)
Vocabulary: Efficient, break-apart strategy, doubling			
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **3.OA.6** Understand division as an unknown-factor problem. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.MD.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg) and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.			

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>● Mental Math and Fluency:
● Solve multiplication fact extensions
● slate</td>
<td>● Math Message:
Solve comparison problems involving bird masses
MJ2 pages 277-278
● Comparing Bird Masses
Share strategies for solving comparison problems
MJ2 pages 277-278
slate
● Strategies for Mental Multiplication
Explore strategies for mental multiplication
MJ 2 pages 277-278
slate
● Practicing Mental Strategies
Practice mental multiplication with larger factors
MJ2 pages 277-278 and 281</td>
<td>● Math Minute-
Practice mental math strategies
● Game – Playing Multiplication Top It with Extended Facts
Practice extended facts
SRB pages 260-261
MM page TA35
Assessment Handbook pages 136-142
Fact triangles
calculator
number cards 0–10 (4 of each),
number cards 11–19 (optional)
● Math Boxes:
Math Journal 2: pages 277–278 and 281–282
● Home Link:
MM page 308</td>
</tr>
<tr>
<td>ELL Support:
To scaffold the term break apart, show various item that can be broken apart, but easily put back together such as cubes</td>
<td>Readiness:
Applying Fact Strategies</td>
<td>Enrichment:
Using Mental Math to Multiply in Literature
One Grain of Rice by Demi</td>
<td>Extra Practice:
Using Mental Multiplication
MM page 307</td>
</tr>
<tr><td colspan="4">Assessment: Page 822. MJ2 page 281. Observe if children can solve Problems 2 on journal page.</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 9-4: – Exploring Elapsed Time, Squares and Bridges</td><td>TE pages 824-831</td></tr>
<tr><td colspan="4">Objective: SWL to work with elapsed time, explore polygon relationships, and find the masses of objects.</td></tr>
<tr><td>Math Masters:
Pages 309–313; TA45–TA46; G23</td><td>Activity Card:
86</td><td>Manipulatives:
● per toolkit clock
● pan balance and standard masses,
● triangle and square made from straws and twist ties (optional),
● number cards 1–10 (4 of each),
● counters</td><td>Other Materials:
● demonstration clock,
● glue or tape,
● scissors,
● paper,
● small classroom objects (see Lesson 9-4 Before You Begin),
● 2 equal-size books,
● twist ties (optional),
● crayons
● A Guide to Playing Math Games booklets from Lesson 9-1 (optional)</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg) and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2 Reason with shapes and their attributes. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area; describe the area of each part is 1/4 of the area of the shape.</td></tr>
</table>

<table>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve Elapsed Time problems
● slate</td><td colspan="2">● Math Message:
Determine what time Field Day will end.
MM page 310
● Using an Open Number Line
Compare strategies for finding elapsed time
MM page 310
● Exploration A: Planning a Field Trip
MM page 310
● Exploration B: Taking Apart and Putting Together Squares
Activity Card page 99
MM page 312
glue or tape, scissors
● Exploration C: Building Bridges
Compare the masses that paper bridges can hold
Activity Card 100
MJ2 page 284
small objects
2 equal sized books
pan balance
standard masses
straw and twist tie
triangle and square</td><td>● Math Minute
Practice mental math strategies
● Introducing Product Pile Up
Learn the rules and play Product Pile Up
SRB page 252
number cards 1–10 (4 of each)
counters
Fact Strategy Wall or My Multiplication Facts Strategy Logs
● Math Boxes
MJ 2: pages 283–285
● Home Link:
MM page 313</td></tr>
<tr><td>ELL Support:
Scaffold the term schedule by discussing familiar schedules such as class times or routines</td><td>Readiness:
Finding Masses of Objects
● pan balance,
● standard masses,
● small classroom objects</td><td>Enrichment:
Writing a Daily Schedule
SRB page 189</td><td>Extra Practice:
Solving Number Stories about Time and Mass
MM page 309</td></tr>
<tr><td colspan="4">Assessment:</td></tr>
</table>

Lesson 9-5: Multi digit Multiplication			TE pages 832-837
Objective: SWL to partition rectangles to solve multi digit multiplication problems.			
Math Masters: ● Pages 314–315; ● TA20 (optional); ● TA50 (optional); ● G22 (optional)	**Activity Card:** 101	**Manipulatives:** ● Counters,\ ● number cards 0–10 (4 of each)	**Other Materials:** ● Slate ● fraction cards, ● scissors ● tape
Vocabulary: Partition, decompose. extended fact, basic fact			
3.OA.5 Apply properties of operations as strategies to multiply and divide. **3.OA.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.9** Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. **3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.MD.7c** Use tiling to show in a concrete case that the area of a rectangle wit whole-number side lengths a and b +c is the sum of a x b and a x c. Use area models to represent the distributive property in a mathematical reasoning.			
Warm Up 5 minutes	**2. Focus 30-40 minutes**		**3. Practice 15-20 minutes**
● **Mental Math and Fluency:** ● Break apart numbers into two or more addends ● slate	● **Math Message:** Partition a rectangular garden MJ2 page 286 ● **Partitioning a Rectangle** Solve a multiplication problem MJ2 page 286 ● **Decomposing and Partitioning to Multiply** Decompose large factors by partitioning rectangles -slate ● **Practicing the Break Apart Strategy** Solve multiplication problems using an area model MJ2 page 287		● **Math Minute-** Practice mental math strategies ● **Game: Fraction Top-It** Compare fractions MJ2 Activity Cards 19-21 SRB page 246-247 MM page G22 fraction cards ● **Math Boxes** *MJ 2:* pages 286–288 ● **Home Link:** MM page 315
ELL Support: Scaffold the term decompose by modeling with sets of counters and using the term break-apart.	**Readiness:** **Play Multiplication Top It with Extended facts** page 833	**Enrichment:** **Breaking Apart Two Factors** MM pgs. 314	**Extra Practice:** **Using the Break Apart Strategy to Multiply** ● number cards 0–10 (4 of each) ● Activity Card- 101
Assessment: Page 836. MJ2 page 287. Observe if children can decompose the larger factor into easier to multiply numbers and to show their work with rectangles and number sentences.			

<table>
<tr><td colspan="3">Lesson 9.6: 2 Day Lesson – Packing Apples</td><td>TE pages 838-847</td></tr>
<tr><td colspan="4">Objective: SWL to:
Day 1: Develop strategies for using a calculator with a broken division key to solve a problem.
Day 2: Compare and discuss their strategies and revise their work.</td></tr>
<tr><td>Math Masters:
● Page 316;
● TA6;
● TA42 (optional)</td><td>Activity Card:</td><td>Manipulatives:</td><td>Other Materials:
● Slate
● Standards for Mathematical Practice Poster
● children’s work from Day 1</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</td></tr>
</table>

<table>
<tr><th>Warm Up 5 minutes</th><th>2. Focus 30-40 minutes</th><th>3. Practice 15-20 minutes</th></tr>
<tr>
<td>Mental Math and Fluency:
● Skip count with calculators
● calculators</td>
<td><u>Day 1:</u>
● Math Message:
Use calculator to make the number 18 without using the 8 or + keys
MJ2 page 289
calculator
● Make a Name Collection Box for 18
Share solutions for using a calculator to make the number 18 without using the 8 and + keys
MJ2 page 289
● Solving the Open Response Problem
Develop strategies for using a calculator with a broken division key to solve a problem
MM page 316
SRB page 294-295
<u>Day 2: Reengagement</u>
● Setting Expectations
Discuss what would make a good answer to the open response problem and review how to respectfully discuss others' work.
Use Discussion Poster
● Reengaging in the Problem
Analyze other student's work and discuss strategies
● Revising Work
Revise arguments & use rubric</td>
<td>● Math Minute-
● Practice mental math strategies

● Practicing the Break-Apart Strategy
● Break apart arrays to show the product of 6 x 7
● Mj2 pg. 280, tape, scissors, glue

● Math Boxes- Math Journal 2: pgs. 262
● Home Link: Homework
● MM pg.</td>
</tr>
<tr>
<td>ELL Support:</td>
<td>Readiness:</td>
<td>Enrichment-</td>
<td>Extra Practice:
Playing Finding Factors</td>
</tr>
<tr>
<td colspan="4">Assessment: Page 844. Rubric page 844. Collect and review children's revised work. Review drawings of arrays, words or numbers to model the number story in their arguments</td>
</tr>
</table>

<table>
<tr><td colspan="3">Lesson 9.7: The Length-of-Day Project, Revisited</td><td>TE pages 848- 857</td></tr>
<tr><td colspan="4">Objective: SWL to analyze the Length-of-Day Graph.</td></tr>
<tr><td>Math Masters:
● Pages 318–320;
● 321 (optional); 322;
● G21</td><td>Activity Card:</td><td>Manipulatives:
● toolkit clock
● number cards 0–10 (4 of each)
● number cards 11–20</td><td>Other Materials:
● demonstration clock
● class Length-of-Day Graph
● globe (optional)
● Literature Link: Sunshine Makes the Seasons by Franklyn M. Branley (optional)</td></tr>
<tr><td colspan="4">Vocabulary: elapsed time, length of day</td></tr>
<tr><td colspan="4">3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:
● Solve elapsed time problems and show end times
● Demonstration clock, toolkit clock</td><td colspan="2">● Math Message:
Find the sunset time using sunrise data and length of day graph
MM page 321
class length of day graph
toolkit clock
● Reviewing Elapsed Time
Share solutions for using a calculator to make the number 18 without using the 8 and + keys
MJ2 page 289
● Solving the Open Response Problem
Develop strategies for sharing strategies for representing elapsed time
MM page 321
SRB pages 279-280
Globe
Literature: Sunshine Makes the Season by Franklyn Branley
● Calculating Length of Day Around the World
MJ2 page 291
SRB page 281</td><td>● Math Minute-
Practice mental math strategies
● Game-Playing Name that Number
Use different operations to name a number and record a turn using parentheses
SRB pages 249-250
MM page G21
number cards 0–10 (4 of each)
number cards 11–20
● Math Boxes
● MJ 2: page. 291–292
● Home Link:
MM page 322</td></tr>
<tr><td>ELL Support:
Use visual aids and think-alouds to help students understand how the terms long/longest and short/shortest also refer to measuring lengths of time</td><td>Readiness:
Measuring Time with an Open Number Line
MM pg. 318,
MJ2 pg. 283</td><td>Enrichment:
Finding Length of Day Trends
MM pg. 319-320
SRB pg. 281</td><td>Extra Practice:
Finding Length of Day
SRB pg. 281</td></tr>
<tr><td colspan="4">Assessment: Page 853. MJ2 page 291. Check to observe students calculate the correct length of day for Problem 1</td></tr>
</table>

<table>
<tr><td colspan="3">Lesson 9-8 (Day 1): Unit 6 Progress Check</td><td>TE pages 854-861</td></tr>
<tr><td colspan="4">Objective: SWL to correctly answer Unit Assessment questions</td></tr>
<tr><td>Math Masters:
Assessment Handbook: Pages 96–103</td><td>Activity Card:</td><td>Manipulatives:
fraction cards</td><td>Other Materials:</td></tr>
<tr><td colspan="4">Vocabulary:</td></tr>
<tr><td colspan="4">3.OA.5 Apply properties of operations as strategies to multiply and divide.
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.9 Solve problems involving the four operations, and identify and explain patterns in arithmetic. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
3.MD.1 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</td></tr>
<tr><td>Warm Up 5 minutes</td><td colspan="2">2. Focus 30-40 minutes</td><td>3. Practice 15-20 minutes</td></tr>
<tr><td>Mental Math and Fluency:</td><td colspan="2">Day 1 Warm Up-
● Student Self-Assessment
● Complete Unit 6 Assessment
● Check Differentiation Section for Adjusting Assessment

Day 2- Open Response
● Solve Open Response Problem
● Discuss the Problem</td><td>Math Boxes
MJ 2 page 251</td></tr>
<tr><td>ELL Support:</td><td>Readiness:</td><td>Enrichment-</td><td>Extra Practice-</td></tr>
<tr><td colspan="4">Assessment: Unit 9 Assessment</td></tr>
</table>

Curriculum Resources	
Websites	www.everydaymath.uchicago.edu http://connected.mcgraw-hill.com www.yateslab.com www.brainpop.com www.superteacherworksheets.com www.freeworksheets.com www.coolmath4kids.com www.khanacademy.com http://www.kidzone.ws/grade3.htm
Books	*Teacher's Lesson Guide, Volume 2* *Teachers Reference Manual* *Home Connections Handbook* *Assessment Handbook*
Handouts	Home Links 9.1-9.9 Teaching Masters, Game Masters, Assessment Masters

Literacy and Video Connections	https://www.youtube.com/watch?v=bMCXpt8kEmY (Break Apart Method for Multiplication- steps described by a 3rd grade student) https://www.youtube.com/watch?v=zXFZUMjehDU (Elapsed Time Third Grade- great review prior to lesson 9.7. This video not only reminds students how to find elapsed time, but also asks them to complete the problem in the video.) *What Time Is It? A Book of Math Riddles* by Sheila Keenan

ACCOMMODATIONS AND MODIFICATIONS
Below please find a list of suggestions for accommodations and modifications to meet the diverse needs of our students. Teachers should consider this a resource and understand that they are not limited to the recommendations included below.

An **accommodation** *changes* HOW *a student learns*; the change needed does not alter the grade-level standard. A **modification** *changes* WHAT *a student learns*; the change alters the grade-level expectation.

Special Education and 504 Plans
All modifications and accommodations must be specific to each individual child's IEP (Individualized Educational Plan) or 504 Plan.

- Pre-teach or preview vocabulary
- Repeat or reword directions
- Have students repeat directions
- Use of small group instruction
- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments
- Repetition and time for additional practice
- Model skills/techniques to be mastered
- Extended time to complete task/assignment/work
- Provide a copy of class notes
- Strategic seating (with a purpose - eg. less distraction)
- Flexible seating
- Repetition and additional practice
- Use of manipulatives
- Use of assistive technology (as appropriate)
- Assign a peer buddy
- Emphasize key words or critical information by highlighting
- Use of graphic organizers
- Scaffold with prompts for sentence starters
- Check for understanding with more frequency
- Provide oral reminders and check student work during independent practice
- Chunk the assignment - broken up into smaller units, work submitted in phases
- Encourage student to proofread assignments and tests
- Provide regular home/school communication
- Teacher checks student planner
- Provide student with clear expectations in writing and grading criteria for assignments (rubrics)

Testing Accommodations:
Students should receive all testing accommodations for Benchmark assessments that they receive for State testing.

- Setting: Alternate setting for assessments, small groups, screens to block distractions
- Presentation: large print, test readers, use of audio, fewer questions on each page
- Response: answer verbally, use large block answer sheet, speech-to-text dictation, accept short answers
- Allow for retakes
- Provide study guides
- Use of reference aids such as glossary, multiplication tables, calculator
- Choice of test format (multiple-choice, essay, true-false)
- Alternate ways to evaluate (projects or oral presentations instead of written tests)
- Open-book or open-note tests

English Language Learners:
All modifications and accommodations should be specific to each individual child's LEP level as determined by the WIDA screening or ACCESS, utilizing the WIDA Can Do Descriptors.

- Pre-teach or preview vocabulary
- Repeat or reword directions
- Have students repeat directions
- Use of small group instruction
- Scaffold language based on their Can Do Descriptors
- Alter materials and requirements according to Can Do Descriptors
- Adjust number of paragraphs or length of writing according to their Can Do Descriptor
- TPR (Total Physical Response-Sheltered Instruction strategy) Demonstrate concepts through multi sensory forms such as with body language, intonation
- Pair visual prompts with verbal presentations
- Repetition and additional practice
- Model skills and techniques to be mastered
- Native Language translation (peer, assistive technology, bilingual dictionary)
- Emphasize key words or critical information by highlighting
- Use of graphic organizers
- Scaffold with prompts for sentence starters
- Check for understanding with more frequency
- Use of self-assessment rubrics
- Increase one-on-one conferencing; frequent check ins
- Use study guide to organize materials
- Make vocabulary words available in a student created vocabulary notebook, vocabulary bank, Word Wall, or vocabulary ring
- Extended time
- Select text complexity and tiered vocabulary according to Can Do Descriptors
- Projects completed individually or with partners
- Use online dictionary that includes images for words: http://visual.merriamwebster.com/.

- Use online translator to assist students with pronunciation: http://www.reverso.net/text_translation.aspx?lang=EN.

Students at Risk of Failure:

- Use of self-assessment rubrics for check-in
- Pair visual prompts with verbal presentations
- Ask students to restate information and/or directions
- Opportunity for repetition and additional practice
- Model skills/techniques to be mastered
- Extended time
- Provide copy of class notes
- Strategic seating with a purpose
- Provide students opportunity to make corrections and/or explain their answers
- Support organizational skills
- Check daily planner
- Encourage student to proofread work
- Assign a peer buddy
- Build on students' strengths based on Multiple Intelligences: Linguistic (verbal); Logical (reasoning); Musical/Rhythmic; Intrapersonal Intelligence (understanding of self); Visual Spatial Intelligence; Interpersonal Intelligence (the ability to interact with others effectively); Kinesthetic (bodily); Naturalist Intelligence; and Learning Styles: Visual; Auditory; Tactile; Kinesthetic; Verbal

High Achieving:

Extension Activities

- Allow for student choice from a menu of differentiated outcomes; choices grouped by complexity of thinking skills; variety of options enable students to work in the mode that most interests them
- Allow students to pursue independent projects based on their individual interests
- Provide enrichment activities that include more complex material
- Allow opportunities for peer collaboration and team-teaching
- Set individual goals
- Conduct research and provide presentation of appropriate topics
- Provide students opportunity to design surveys to generate and analyze data to be used in discussion
- Allow students to move through the assignment at their own pace (as appropriate)

Strategies to Differentiate to Meet the Needs of a Diverse Learning Population

- Vocabulary Sorts-students engage with the vocabulary word by sorting into groups of similar/different rather than memorizing definitions
- Provide "Realia" (real life objects to relate to the five senses) and ask questions relating to the senses
- Role Play-students create or participate in role playing situations or Reader's Theater

- Moving Circle-an inside and outside circle partner and discuss, circles moves to new partner (Refer to Kagan Differentiated Strategies)
- Brainstorm Carousel-Large Post Its around the room, group moves in a carousel to music. Group discusses topic and responses on paper. Groups rotate twice to see comments of others. (Refer to Kagan Differentiated Strategies)
- Gallery Walk-Objects, books, or student work is displayed. Students examine artifacts and rotate.
- Chunking-chunk reading, tests, questions, homework, etc to focus on particular elements.
- Think Pair Share Write
- Think Talk Write
- Think Pair Share
- Note-taking -can be done through words, pictures, phrases, and sentences depending on level
- KWL (Know, Want to Know, Learned)/KWHL(Know, What to Know, How Will I Learn, learned)/KWLS (Know, Want to Know, Learned, Still Want to Know) /KWLQ (Know, What to Know, Learned, Questions I Still Have) Charts
- Corners Cooperative Learning Strategy: http://cooperativelearningstrategies.pbworks.com/w/page/28234420/Corners.
- Circle Map strategy- place the main topic in a small circle and add student ideas in a bigger circle around the topic. Students may use their native language with peers to brainstorm.
- Flexible grouping -as a whole class, a small group, or with a partner, temporary groups are created: http://www.teachhub.com/flexible-grouping-differentiated-instruction-strategy.
- Jigsaw Activities -cooperative learning in a group, each group member is responsible for becoming an "expert" on one section of the assigned material and then "teaching" it to the other members of the team: http://www.adlit.org/strategies/22371/.

NEPTUNE CITY SCHOOL DISTRICT
Office of the Chief School Administrator, Principal
210 West Sylvania Avenue
Neptune City, NJ 07753

An Affirmative Action Equal Opportunity Employer

2022