Unit 4: Reason with Shapes and Represent Data

Content Area:	**Mathematics**
Course(s):	
Time Period:	**Generic Time Period**
Length:	**6 weeks**
Status:	**Published**

Standards

LA.2.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed through self-reflection, revising and editing.
MA.2.2.G.A	Reason with shapes and their attributes.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.
MA.2.2.G.A.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
LA.2.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.2.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
PFL.9.1.4.B.5	Identify ways to earn and save.
MA.2.2.MD.D	Represent and interpret data.
LA.2.L.2.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
MA.2.2.G.A.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
MA.2.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.2.G.A.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
MA.2.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
LA.2.RF.2.4	Read with sufficient accuracy and fluency to support comprehension.
MA.2.2.MD.C.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.
LA.2.RF.2.3	Know and apply grade-level phonics and word analysis skills in decoding words.
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
MA.2.2.MD.D.9	Generate measurement data by measuring lengths of several objects to the

	nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
LA.2.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
MA.2.2.MD.D.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.
LA.2.RI.2.10	Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.
TECH.8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
PFL.9.1.4.B.2	Identify age-appropriate financial goals.
TECH.8.1.2.A.CS1	Understand and use technology systems.
PFL.9.1.4.B.4	Identify common household expense categories and sources of income.
PFL.9.1.4.A.2	Identify potential sources of income.

Essential Questions

Chapter 10 Essential Question: How do tally charts, picture graphs, and bar graphs help you solve problems?

Lesson 10.1 Essential Question: How do you use a tally chart to record data from a survey?

Lesson 10.2 Essential Question: How do you use a picture graph to show data?

Lesson 10.3 Essential Question: How do you make a picture graph to show data in a tally chart?

Lesson 10.4 Essential Question: How is a bar graph used to show data?

Lesson 10.5 Essential Question: How do you make a bar graph to show data?

Lesson 10.6 Essential Question: How does making a bar graph help when solving problems about data?

Chapter 11 Essential Question: What are some two-dimensional shapes and three-dimensional shapes, and how can you show equal parts of shapes?

Lesson 11.1 Essential Question: What objects match three-dimensional shapes?

Lesson 11.2 Essential Question: How would you describe the faces of a rectangular prism and the faces of a cube?

Lesson 11.3 Essential Question: How can you build a rectangular prism?

Lesson 11.4 Essential Question: What shapes can you name just by knowing the number of sides and vertices?

Lesson 11.5 Essential Question: How do you find and count angles in two-dimensional shapes?

Lesson 11.6 Essential Question: How do you use the number of sides and angles to sort two-dimensional shapes?

Lesson 11.7 Essential Question: How do you find the total number of same-size squares that will cover a rectangle?

Lesson 11.8 Essential Question: What are halves, thirds, and fourths of a whole?

Lesson 11.9 Essential Question: How do you know if a shape shows halves, thirds, or fourths?

Lesson 11.10 Essential Question: How do you find a half of, a third of, or a fourth of a whole?

Lesson 11.11 Essential Question: How can drawing a diagram help when solving problems about equal shares?

Student Learning Objectives

Unit Focus:

- Reason with shapes and their attributes

- Work with money

- Represent and interpret data

- Add and subtract within 20

- Use place value understanding and properties of operations to add and subtract

Critical Areas: Using standard units of measure; Describing and analyzing shapes

Chapter 10:

SWBAT collect data in a survey and record that data in a tally chart.

SWBAT interpret data in picture graphs and use that information to solve problems.

SWBAT make picture graphs to represent data.

SWBAT interpret data in bar graphs and use that information to solve problems.

SWBAT make bar graphs to represent data.

SWBAT solve problems involving data by using the strategy make a graph.

Chapter 11:

SWBAT identify three-dimensional shapes.

SWBAT identify and describe three-dimensional shapes according to the number of faces, edges, and vertices.

SWBAT build three-dimensional shapes using cubes and other objects.

SWBAT name 3-, 4-, 5-, and 6-sided shapes according to the number of sides and vertices.

SWBAT identify angles in two-dimensional shapes.

SWBAT sort two-dimensional shapes according to their attributes.

SWBAT partition rectangles into equal-size squares and find the total number of these squares.

SWBAT identify and name equal parts of circles and rectangles as halves, thirds, or fourths

SWBAT partition shapes to show halves, thirds, or fourths.

SWBAT identify and describe one equal part as a half of, a third of, or a fourth of a whole.

SWBAT solve problems involving wholes divided into equal shares by using the strategy draw a diagram.

Materials
Print Resources:

-Student Edition Chapter 10

-Student Edition Chapter 11

-Chapter 10 Resources

-Chapter 11 Resources

-Grab and Go Center Kit

-Practice and Homework in Student Edition

-Reteach and Enrich in the Chapter Resources

-Connecting Cubes, Vocabulary cards

-Set of 3-dimensional shapes, ruler, dot paper

-Pattern blocks, crayons, color tiles

-Math Boards

Technology:

-Interactive Student Edition

-Interactive Teacher Edition

-Personal Math Trainer

-Math on the Spot Videos

-HMH Mega Math

-Digital Management System

-Animated Math Models

-iTools

-Multimedia eGlossary

-Digital Assessments

-Professional Development Videos

Achieve the Core:

http://achievethecore.org/page/2853/go-math-k-5-guidance-documents

Activities

Geometry and Fractions; Data

Unit Project: At the Farm Stand

Vocabulary Reader: A Farmer's Job (Social Studies connection/questions about food, farming, seasons)

Chapter Ten: Data

Game: Making Tens

Vocabulary Game: Picture It

Lesson 1: Collect Data

Lesson 2: Read Picture Graphs

Lesson 3: Make Picture Graphs

Mid-Chapter Checkpoint

Lesson 4: Read Bar Graphs

Lesson 5: Make Bar Graphs

Lesson 6: Display Data

Chapter Eleven: Geometry and Fraction Concepts

Game: Count the Sides

Vocabulary Game: Going to a Balloon Race

Lesson 1: Three-Dimensional Shapes

Lesson 2: Attributes of Three-Dimensional Shapes

Lesson 3: Build Three-Dimensional Shapes

Lesson 4: Two-Dimensional Shapes

Lesson 5: Angles in Two-Dimensional Shapes

Lesson 6: Sort Two-Dimensional Shapes

Lesson 7: Hands On: Partition Rectangles

Mid-Chapter Checkpoint

Lesson 8: Equal Parts

Lesson 9: Show Equal Parts of a Whole

Lesson 10: Describe Equal Parts

Lesson 11: Equal Shares

Other Activities:

2.MD.C.8 Delayed Gratification

2.MD.D.9 Hand Span Measures

2.MD.D.9 The Longest Walk

2.MD.D.10 Favorite Ice Cream Flavor

2.NBT.B.5 Saving Money 1

2.NBT.B.5 Saving Money 2

Assessments

MAP Assessment

-Show What You Know

-Share and Show Activities

-On Your Own Activities

-ThinkSmarter

-Math Journals

-Response to Essential Questions

-Practice and Homework Activities (Lesson Check and Spiral Review for each lesson)

-Diagnostic Interview Task

-Digital Personal Math Trainer

-Lesson Quick Check

-Mid-Point Chapter Checkpoint

-Chapter Review

-Chapter Test

-Performance Assessment Task

Fact Fluency

GO Math! Resources for Fluency:

-Games (Student Eddition)
-Fluency Standard Lessons (Student Edition)
-Fluency Builder (Teacher Edition)
-Strategies and Practice for Skills and Facts Fluency- Primary, GK-3
-Teacher Resource Book
-HMH Mega Math
-Personal Math Trainer: Standards Quizzes
-Animated Math Models

Other Resources for Fluency:
-Fastt Math
-Flash Cards

MA.2.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Accommodations and Modifications

Materials and Resources that provide opportunities to accommodate and modify include:

-Personal Math Trainer (adaptive and intervention system)

-Interactive Student Edition

-Leveled quizzes and tests

-Leveled performance tasks
-Grab & Go Differentiated Centers

-Intensive Intervention Resource

-Strategic Intervention Resource

-Reteach activities

-RTI tiered resources and activities

-Math on the Spot videos

-Fastt Math