1 Math Unit 14: Reason with Shapes and their Attributes

Content Area: **Mathematics**
Course(s):
Time Period: **June**
Length: **2 Weeks**
Status: **Published**

Unit Overview

A rigorous curriculum emphasizes conceptual understanding, procedural skill and fluency, and applications.

CONCEPTUAL UNDERSTANDING

- **Defining and Non-Defining Attributes of Shapes** Students informally understand defining attributes of a certain shape as attributes that apply to all shapes with that name. There are also attributes that can vary among all shapes with a certain name. These non-defining attributes include color, size, and orientation.

  Circle the words that are true for the shape.

  

  All rectangles:
  - are yellow
  - are closed figures
  - have 4 sides and 4 vertices
  - have 4 square corners

- **Compose Shapes** Composing shapes to create a larger composite shape is much like composing 10 ones to make 1 ten. Students can see the composite shape as well as the smaller shapes used to create it. Students add more shapes to the composite shape to create a larger composite shape.

  Kerry uses these shapes to make a new shape.

  

  Circle the shape Kerry makes.

  

PROCEDURAL SKILL AND FLUENCY

There are no fluency expectations in Topic 14.

- **Reason with Shapes and Their Attributes** Throughout Topic 14, students should be able to identify and describe common 2-D figures, including circles, triangles, squares, rectangles, and hexagons.

APPLICATIONS

- **Real-World Applications** In Topic 14, students use geometric shapes to make 2-D pictures of real-world objects such as rockets, animals, flowers, machines, and flags. Students also see 3-D shapes represented by real-world objects such as sports equipment, musical instruments, buildings, and food.

  Write the number of each block used to make the microphone.

  How many triangles?
  How many squares?
  How many trapezoids?
  How many rhombuses?

Standards

MA.1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
MA.1.NBT.B.2a	10 can be thought of as a bundle of ten ones — called a “ten.”
MA.1.NBT.B.2c	The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
MA.1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple

	copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
MA.1.G.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
MA.1.G.A.2	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

Materials

Core Materials:

- EnVision Math
- 14.1-Use Attributes to Define Two-dimensional (2-D) shapes
- 14.2-Defining and Non-defining Attributes of 2-D Shapes
- 14.3-Build and Draw 2-D Shapes by Attributes
- 14.4-Compose 2-D Shapes
- 14.5-Compose New 2-D Shapes from 2-D Shapes
- 14.6-Use Attributes to Define Three-Dimensional (3-D) Shapes
- 14.7-Defining and Non-Defining Attributes of 3-D Shapes
- 14.8-Compose with 3-D Shapes
- 14.9 Make Sense and Perservere

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Math Diagnosis and Intervention System
- Online Resources

Technology

Algorithms & Programming

8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.

8.1.2.AP.4: Break down a task into a sequence of steps.

Data & Analysis

8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.

• 8.1.2.DA.3: Identify and describe patterns in data visualizations.

• 8.1.2.DA.4: Make predictions based on data using charts or graphs.

Assessment

Formative Assessment

- Teacher Observation
- Daily Quick Checks
- Quizzes
- Exit Tickets

Summative Assessment

- Topic Tests
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

- Follow IEP Plan which may contain some of the following examples…
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities

- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages

- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

Topic 1 Math and Science Project - Using different presentations tools, students will collect different types of paper. Talk about the uses of paper. Tell how strong each type of paper is. Tell how the paper feels. Tell if the paper can soak up water.

ELA:

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.

Science:

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

21st Century Life Literacies & Key Skills

Critical Thinking and Problem Solving

• 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

• 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Technology Literacy

• 9.4.2.TL.3: Enter information into a spreadsheet and sort the information.

• 9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts

Career Ready Practices

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.

- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.