Unit 4: Geometry

Content Area: **Mathematics**
Course(s): **Mathematics - Grade 1**
Time Period: **3rd Marking Period**
Length: **9 weeks**
Status: **Published**

Unit Overview

Reason with shapes and their attributes.

In the beginning of June, you should administer Benchmark 4, which covers Chapters 1-10.

Transfer

Students will be able to independently use their learning to...

reason with shapes and their attributes.

Meaning

Understandings

Students will understand that:

- squares have four sides, four vertices, and all of the sides are the same length
- rectangles have four sides, four vertices, and opposite sides are the same length
- trapezoids have four sides, four vertices, and two opposite sides are the same space apart
- triangles have three sides and three vertices
- circles have no sides, no vertices, and are curved
- put shapes together to make a composite shape
- create a composite shape and compose new shapes from the composite shape
- divide shapes into two equal parts or halves
- divide shapes into four equal parts or fourths

- equal parts are made when all parts put together equally make a whole
- a defining attribute of a cube is it has 6 square faces
- a defining attribute of a cube is it has 8 vertices
- a defining attribute of a rectangular prism is it has 6 rectangular faces
- a defining attribute of a rectangular prism is it has 8 vertices
- defining attributes of a cylinder are 2 faces and 0 vertices
- defining attributes of a cone are it has 1 face and 1 vertex
- vertices
- faces

Essential Questions

Students will keep considering...

Chapter 9: How can I recognize two-dimensional shapes and equal shares?
Chapter 10: How can i identify three-dimensional shapes ?

Application of Knowledge and Skill

Students will know:

- How to recognize two-dimensional shapes by defining attributes
- How to make a new shape by putting other shapes together
- How to partition shapes into equal parts
- Distinguish between defining attributes and nondefining attributes to identify a cube
- Distinguish between defining attributes and nondefining attributes to identify a rectangular prism
- Distinguish between defining attributes and nondefining attributes to identify a cylinder
- Distinguish between defining attributes and nondefining attributes to identify a cone
- How to combine three-dimensional shapes to make a composite shape

Students will be skilled at:

- Use defining attributes to determine the correct shape

- Put pattern blocks together to make a composite shape
- Divide two-dimensional shapes equally into halves or fourths
- Use defining attributes to identify a cube
- Use defining attributes to identify a rectangular prism
- Use defining attributes to identify a cylinder
- Use defining attributes to identify a cone
- Use three-dimensional shapes to make a composite shape

See picture examples in My Math Teacher Manual: What's the Math in this Chapter? Section (Chapters 9-10)

Academic Vocabulary

Stronger emphasis on the understanding of vocabulary to be able to retain and recall the meaning of the words.

- whole
- equal part
- halves
- fourths
- two-dimensional shapes
- side
- vertex
- square
- rectangle
- triangle
- trapezoid
- circle
- composite shape
- three-dimensional shape
- cube
- rectangular prism
- face
- cone

cylinder

Learning Goal 1

- Distinguish between the defining and nondefining attributes of a variety of shapes (for example, defining attributes of triangles: closed, three-sided; nondefining attributes include color, orientation, and overall size

Daily Targets

SWBAT:

- Compare two-dimensional shapes (Ch 9 Lesson 4; Analysis(matching); DOK:3)
- Examine cones and cylinders to discriminate their attributes (Ch 10 Lesson 2; Retrieval(recognizing); DOK:1)
- Examine cubes and rectangular prisms to discriminate their attributes (Ch 10 Lesson 1; Retrieval(recognizing); DOK:1)
- Look for a pattern to solve problems (Ch 10 Lesson 3; Analysis; DOK:2)
- Use defining attributes to identify and describe circles (Ch 9 Lesson 3; Retrieval(recognizing); DOK:2)
- Use defining attributes to identify and describe squares and rectangles (Ch 9 Lesson 1; Retrieval(recognizing); DOK:2)
- Use defining attributes to identify and describe trapezoids and triangles (Ch 9 Lesson 2; Retrieval(recognizing); DOK:2)

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.1.G.A	Reason with shapes and their attributes.
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.

Learning Goal 2

- Create composite shapes by composing three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders.
- Describe the shares of partitioned circles and rectangles using the words halves, fourths,

and quarters

Daily Targets

SWBAT:

- Combine three-dimensional shapes to make a composite shape (Ch. 10 Lesson 4; Analysis; DOK:3)
- Partition shapes into four equal parts (Ch. 9 Lesson 10; Comprehension; DOK:2)
- Partition shapes into two equal parts (Ch. 9 Lesson 9; Comprehension; DOK:2)
- Partition shapes into two or four equal shares and identify how many parts there are in the whole (Ch. 9 Lesson 8; Comprehension; DOK:2)
- Use logical reasoning to solve problems (Ch. 9 Lesson 7; Analysis(specifying); DOK:3)
- Use two-dimensional shapes to make a composite shape (Ch. 9 Lesson 5; Analysis; DOK:3)
- Use two-dimensional shapes to make a composite shape and compose new shapes from the composite shape (Ch. 9 Lesson 6; Analysis; DOK:3)

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MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.1.G.A	Reason with shapes and their 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.
MA.1.G.A.3	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Formative Assessment and Performance Opportunities

Chapter 9 Performance Task: **The Toy Factory** DOK 2; DOK 3; DOK4- SW identify and use triangles, squares, rectangles, trapezoids, and circles during a day at a toy factory (Rubric in TM pg. 702PT2)

Chapter 10 Performance Task: **Making A Fence** DOK 2; DOK 3- SW identify and use triangles, squares, and hexagons to show various areas of a playground (Rubric in TM pg. 740PT2)

- Chapter quizzes
- Check My Progress
- Common Core Quick Check
- Concept Check
- Fluency
- Graded Classwork
- Homework
- Link It
- Teacher Observation

Summative Assessment

Chapter Tests

Benchmark Assessment

21st Century Life and Careers and Technology

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.

CRP.K-12.CRP5.1	Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.
CRP.K-12.CRP12.1	Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.
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.
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.
TECH.8.1.2.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.2.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.2.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.2.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.

Accommodations and Modifications

See Common Error! notice in My Math Teacher Manual (Practice and Apply) for tips on differentiation for Chapters 1-4.

Computer Resources

StMath

Math Playground

Spalsh Math

Math Game Time

- Be given an outline of shapes to trace
- Centers
- Coherence Map: achievethecore.org/coherence-map
- Computer Resources: see above for hyperlinks

- Have curriculum translated into native language
- If students cannot identify a triangle that is not equilateral, show some examples and count the number of sides and vertices with the students
- Lesson Extensions
- Make sure students understand that composite shapes do not always make a familiar shape
- Manipulatives
- Mark text and parts of shapes using a highlighter
- Modifications as per IEP/504
- Review and practice
- RTI section of the My Math Book specific to the chapter
- Small group instruction
- Students may not realize that objects can be the same shape but different sizes. Show them a variety of objects of one shape in different sizes.
- Use lots of higher-level questions in justification and discussion of problems. Ask "why" and "what if" questions for higher learners

Unit Resources

- AAAmath http://www.aaamath.com/
- ABCYA: http://www.abcya.com
- Brainpop http://www.brainpop.com/
- Coherence Map: achievethecore.org/coherence-map
- Cool math 4 kids http://www.coolmath4kids.com/
- Funbrain http://www.funbrain.com/
- https://www.illustrativemathematics.org
- Math Fact Café http://www.mathfactcafe.com/
- Math playground http://www.mathplayground.com/
- My Math Chapters 9-10
- My Math: Foldables
- My Math: Learning Stations
- My Math: Model the Math
- My Math: Trade Books use for interdisciplinary connections
- My Math: Vocabulary Cards
- ST MATH (Equal Areas & Find the Pair)

Interdisciplinary Connections

Shapes in Nature (Teacher Guide page 14) students look for shapes in nature. They also learned how animals bodies are adapted to the environments in which they live. (1.G.1)

Maps and Mail (Teacher Guide page 11) follows a mail carrier through a daily route. The book incorporates numbers, patterns, and counting to reinforce map skills and map reading, including cardinal directions and

map symbols to support Social Studies skills. (1.OA.2)

SCI.1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
SOC.6.1.4.B.1	Compare and contrast information that can be found on different types of maps and determine how the information may be useful.