

Unit 5: Geometry

Content Area: **Mathematics**
Course(s): **Mathematics - Grade K**
Time Period: **7 weeks**
Length: **April - May**
Status: **Published**

Unit Overview

This unit includes describing objects in the environment using the names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*. Students will also correctly name shapes regardless of orientation, identify shapes as plane (two dimensional) or solid (three dimensional) and analyze or compare them, and also model shapes in the world by building from components or by using smaller shapes. Within the unit there will be a focus on visual tools and problems solving as students touch on cross curricular connections in Chapter 10: animals such as pets, jungle animals, animals in nature and in nursery rhymes, in Chapter 11: observing shapes of everyday objects and in Chapter 12: roles and places that a students imagination may roam.

At the end of Chapter 12, the end of Unit 5 (June), the final benchmark, Benchmark 4, should be administered. This benchmark includes all Chapters and Standards. See attachment in summative assessment.

Transfer

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

- describe positions (*above*, *below*, *beside*, *in front of*, *behind*, and *next to*).
- name and identify two dimensional (plane) shapes and use attributes to identify them.
- name and identify three dimensional (solid) figures.

Apply this in the real world setting as students will use positional words to express desired wants and needs.

Apply this in the real world to model and identify daily life objects as two dimensional shapes and three dimensional figures.

Meaning

Understandings

Students will understand that objects have positions in relation to other objects. Students will also understand that all shapes and solid figures have attributes that can help you compare and identify them, and will understand how to use these attributes to help identify the object.

Essential Questions

Students will keep considering...

- How do I identify positions?
- How can I compare shapes?
- How do I identify and compare three - dimensional shapes?

Application of Knowledge and Skill

Students will know...

- how to describe the position of an object as above, below, beside, next to, in front of, and behind.
- how to name and identify shapes
- how to use attributes to identify a particular shape
- how to use smaller shapes to form larger shapes
- how to identify and compare solid figures: spheres, cubes, cylinders, and cones
- how to identify and describe solid shapes in the real world

Students will be skilled at...

- telling an objects position using positional words

- identifying shapes and saying the name of that shape
- identifying shapes by their attributes
- forming larger shapes from smaller shapes
- using attributes to identify and compare spheres, cubes, cylinders, and cones.
- using attributes of solid shapes to determine the shape of a real world object

Academic Vocabulary

Chapter 10:

- above
- behind
- below
- besides
- in front of
- next to

Chapter 11:

- circle
- hexagon
- rectangle
- round
- side
- straight
- square
- triangle
- vertex

Chapter 12:

- cone
- cube
- cylinder
- roll
- slide
- sphere
- stack

Chapter 10 (L 1, 2, 3) [Level of Difficulty 1]

Daily Target: SWBAT use the words ____*____ to describe or place an object with respect to another object.

*Insert appropriate attribute based on lesson (see below).

- Chapter 10 Lesson 1: above and below
- Chapter 10 Lesson 2: in front of and behind
- Chapter 10 Lesson 3: next to and beside

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-12.6	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.K.G.A	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
MA.K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Chapter 10 (L 4) [Level of Difficulty 2]

Daily Target: SWBAT use the act it out strategy, using concrete objects, to solve problems associated with position.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.K.G.A	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
MA.K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Chapter 11 (L 1, 2, 3, 4) [Level of Difficulty 1]

Daily Target: SWBAT identify, name, and describe ____*____.

*Insert correct name of shape (see below)

- Chapter 11 Lesson 1: squares and rectangles

- Chapter 11 Lesson 2: circles and triangles
- Chapter 11 Lesson 3: squares, rectangles, triangles, and circles
- Chapter 11 Lesson 4: hexagons

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-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
MA.K.G.A.3	Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).
MA.K.G.B	Analyze, compare, create, and compose shapes.
MA.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

Chapter 11 (L 5) [Level of Difficulty 2]

Daily Target: SWBAT compare shapes to understand patterns

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-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.K.G.B	Analyze, compare, create, and compose shapes.
MA.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

Chapter 11 (L 6) [Level of Difficulty 3]

Daily Target: SWBAT describe objects using the names of shapes and their relative position.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
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.K.G.A	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
MA.K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Chapter 11 (L7, 9) [Level of Difficulty 3]

Daily Target: SWBAT identify shapes in objects and put shapes together to form new shapes.

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.G.B	Analyze, compare, create, and compose shapes.
MA.K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
MA.K.G.B.6	Compose simple shapes to form larger shapes.

Chapter 11 (L 8) [Level of Difficulty 3]

Daily Target: SWBAT use logical reasoning to solve problems

MA.K-12.1	Make sense of problems and persevere in solving them.
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.CC.B.5	Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
MA.K-12.7	Look for and make use of structure.

Chapter 12 (L 1, 2) [Level of Difficulty 1]

Daily Target: SWBAT identify, name, and describe ____* ____.

*Insert correct name of shape (see below)

- Chapter 12 Lesson 1: spheres and cubes
- Chapter 12 Lesson 2: cylinders and cones

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.K.G.A	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
MA.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
MA.K.G.A.3	Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Chapter 12 (L 3) [Level of Difficulty 3]

Daily Target: SWBAT analyze and compare solid shapes.

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.G.B	Analyze, compare, create, and compose shapes.
MA.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

Chapter 12 (L 4) [Level of Difficulty 2]

Daily Target: SWBAT use the Act It Out strategy to solve the problem: which blocks will stack on a given structure?

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.4	Model with mathematics.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K.G.B	Analyze, compare, create, and compose shapes.
MA.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
MA.K.G.B.6	Compose simple shapes to form larger shapes.

Chapter 12 (L 5) [Level of Difficulty 1]

Daily Target: SWBAT identify, name, and describe solid shapes in the physical world.

MA.K-12.1	Make sense of problems and persevere in solving them.
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.K.G.A	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
MA.K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
MA.K.G.A.3	Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Formative Assessment and Performance Opportunities

- Check my progress assessment
- Homework
- On My Own LEVELED
- Problem Solving Pages
- Reteach
- Enrich
- Center Work
- Math Meeting

Chapter 11 Performance Task: **Shapes In Our World** DOK 2, DOK 3, DOK4 - SW identify, count the shapes, complete a pattern, and count sides and vertices for two-dimensional shapes (Rubric in TM pg. 682PT2)

Chapter 12 Performance Task: **Shapes and More Shapes** DOK2, DOK3, DOK4 - SW use solid cones, cubes, cylinders, and spheres to describe and classify real world objects (Rubric in TM pg. 728PT2)

Chapter Projects Available in Student Book:

Chapter 11 Project: Shape Chart (pg. 614)

Chapter 12 Project: Shape Museum Display Objects (pg. 684)

Summative Assessment

- Leveled Chapter Assessment

- E-assessment
- Oral 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.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP6.1	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an 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.
CAEP.9.2.4.A	Career Awareness
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.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
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 & Modifications

- preteach and/or reteach
- small group instruction or one-on-one (parent volunteer)
- manipulatives whenever necessary (hands-on approach)
- Keep shapes (3-D and examples of real-life 3-D readily available. (for ex: sphere & tennis ball)
- build with 3-D shapes
- work with a partner; allow to ask & answer questions
- sing songs/dance to reinforce or introduce skills (youtube has songs for 2-D and 3-D shapes)
- When reviewing the names of shapes, have students "choral respond" (for ex: teacher says sentence aloud; students repeat it to a peer)

Unit Resources

McGraw-Hill: My Math Teacher Manual

McGraw-Hill: My Math Student Edition and student resources

McGraw-Hill: My Math Center cards and manipulatives

[McGraw-Hill Website](#)

ST Math Puzzles: Exploring Shapes, Analyzing Shapes, Composing Shapes, Position

Interdisciplinary Connections

Real-World Problem Solving Readers

- *Desert Patterns* (Teacher Edition pages 5, 21-22) - Presents understanding of analyzing, comparing, creating, and composing shapes while looking at nature's patterns in a desert (K.G.5)
- *Playground Shapes* (Teacher Edition pages 10, 31-32) - Presents understanding of identifying and describing shapes while exploring the playground (K.G.1)

K-ESS2-1.4 Analyzing and Interpreting Data

K-LS1-1.1.1 Patterns in the natural and human designed world can be observed and used as evidence.

