

Unit 5: Title of Unit: Geometry

Content Area: **Mathematics**
Course(s): **Mathematics - Grade 3**
Time Period: **May**
Length: **3 Weeks**
Status: **Published**

Unit Overview

In this unit, students will learn the attributes and be able to compare and distinguish between types of angles, polygons, triangles, and quadrilaterals.

By the end of the year, administer the Link It! G3 Math NJSL Form C online.

Transfer

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

solve real-world problems using geometric shapes.

For more information, read the following article by Grant Wiggins.

http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=60

Meaning

Understandings

Students will understand that...

- a polygon is a closed two-dimensional figure made up of three or more sides
- polygons can be classified by the number of sides and angles
- a triangle may have one right angle, one angle that is greater than a right angle, or two or three angles

less than a right angle

- a triangle may have 0, 2, or 3 sides of equal length
- they can determine if opposite angles are the same or if there are any right angles in a quadrilateral
- they can determine if opposite sides are parallel or of equal length in a quadrilateral
- different quadrilaterals share attributes
- quadrilaterals can be placed in categories based on their attributes
- there are different ways to partition shapes into equal parts
- the area of each part can be expressed as a unit fraction of the whole

Essential Questions

Students will keep considering...

- How can geometric shapes help me solve real-world problems?

Application of Knowledge and Skill

Students will know...

Students will know...

- How to classify polygons
- How to describe a triangle using its angles and sides
- How to classify quadrilaterals
- How to categorize quadrilaterals according to their attributes
- How to separate a shape into parts with equal areas

Students will be skilled at...

Students will be skilled at...

- using the number of sides and the number of angles to identify polygons
- describing triangles using their angles
- classifying quadrilaterals
- describing attributes that quadrilaterals share
- partitioning shapes into parts with equal areas

Academic Vocabulary

Review Terms

- rectangle
- square
- triangle

New Vocabulary Terms

Chapter 14

- angle
- vertex
- right angle
- ray
- endpoint
- polygon
- pentagon
- hexagon
- octagon
- triangle
- attribute
- quadrilateral
- right triangle
- parallelogram
- parallel
- square
- rectangle
- rhombus
- trapezoid

Learning Goal 1

The student will be able classify quadrilaterals into categories based on their attributes.

Daily Targets

SWBAT:

- Explore angles of two-dimensional figures (**Ch. 14, Les 1 DOK 3**)
- Describe and classify polygons by their attributes (**Ch. 14, Les 2 DOK 2**)
- Describe and classify triangles by their attributes (**Ch. 14, Les 3 DOK 2**)
- Identify, describe, and classify quadrilaterals by their attributes (**Ch. 14, Les 4 DOK 2**)
- Describe the shared attributes of quadrilaterals (**Ch. 14, Les 5 DOK 2**)
- Use the guess, check, and revise strategy to solve problems (**Ch. 14, Les 6 DOK 3**)
- Partition shapes into equal sections and write unit fractions to represent each area (**Ch. 14, Les 7 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.3.G.A	Reason with shapes and their attributes.
MA.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.
MA.3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Formative Assessment and Performance Opportunities

Performance Task:

Chapter 14 Performance Task: **Derek's Designs** DOK 2, DOK 3: Use the classification of quadrilaterals, triangles, and angles as well as the partition of a polygon in the setting of fabric design (TM pg. 880PT1-PT2)

Chapter Projects Available in Student Book:

Chapter 14 Room Planning (pg. 821-822)

- Am I Ready Assessments
- Chapter quizzes
- Chapter tests
- Check My Progress
- Graded Classwork

- Homework
- Link It
- Projects
- Student interviews
- Teacher Observation

Summative Assessment

- Projects
- Unit Tests
- Link It

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.
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.8.1.5.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.5.B.CS2	Create original works as a means of personal or group expression.

Accommodations and Modifications

- preteach and/or reteach
- small group instruction or one-on-one (parent volunteer)
- manipulatives whenever necessary (hands-on approach)
- extra brain breaks
- use noise buffers whenever appropriate (headphones or earbuds)
- sensory tools- ex: rubber band around chair to allow for movement
- "act it out" approach
- work with a partner; allow to ask & answer questions
- use a highlighter so students can trace easier
- allow a student to use a highlighter to trace larger numbers
- allow for physical activity to practice skills (ex: jump 5 times; have a large number line and have student hop to each number while counting aloud)
- sing songs/dance to reinforce or introduce skills
- have students "choral respond" (for ex: teacher says sentence aloud; students repeat it to a peer)
- small group instruction
- performance tasks
- English Language Support Interactive Guide
- Beyond Level Enrichment Resources
- clickers
- challenge problems
- StMath
- Real-World Problem Solving Readers (approaching level, on level, beyond level, and Spanish)

Unit Resources

- AAAMath <http://www.aaamath.com/>
- Aleks online supplement
- Brainpop <http://www.brainpop.com/>

- Cool math 4 kids <http://www.coolmath4kids.com/>
- English Language Learner Support in My Math
- FactDash in connect ed
- Funbrain <http://www.funbrain.com/>
- Link It <https://www.linkit.com/testtaker/testtaker/testtaker.html>
- Math Fact Café <http://www.mathfactcafe.com/>
- Math playground <http://www.mathplayground.com/>
- McGraw-Hill My Math Chapter 14
- Multilingual glossary in connect ed
- NCTM illuminations <http://illuminations.nctm.org/>
- Power Up for PARCC in connect ed
- Project Based Learning associated with chapter
- Reteach/Enrich lessons in My Math
- RTI guide in My Math
- Spanish resources in Connect Ed

Interdisciplinary connections

Real-World Problem Solving Readers

- The Places We Live (Real-World Problem Solving Teacher Guide p.12) (3.MD.5.a Students will use geometric measurement: understand concepts of area and relate area to multiplication and to addition.) - Represents a variety of regions in the United States and shows how people adapt to and use the land. Students will also have opportunities to use measurement skills and charts and graphs

SOC.6.1.4.B.4	Describe how landforms, climate and weather, and availability of resources have impacted where and how people live and work in different regions of New Jersey and the United States.
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
3-ESS2-1.ESS2.D	Weather and Climate