Unit 3: Domain Geometry

Content Area: **Mathematics**
Course(s): **Mathematics**
Time Period: **Marking Period 3**
Length: **2-3 Weeks**
Status: **Published**

Unit Overview

In this unit, students will recognize and draw shapes having specified attributes, such as a given number of equal faces. They be able to identify triangles, quadrilaterals, pentagons, hexagons and cubes.

Standards

MA.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.
MA.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.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.

Essential Questions

- Which plane figures have four sides?
- What attributes can you use to sort plane figures?
- How can a shape be identified by the number of its sides, vertices or angles?
- How can three-dimensional figures be identified, described, classified and analyzed by their faces, edges and vertices?

Application of Knowledge and Skills...

Students will know that...

- An object's location in space can be described by it's attributes.
- Any number, measure, numerical expression, algebraic expression, or equation can be represented in a number of ways.

- Mathematics content and practices can be applied to solve problems.
- Two- and three-dimensional objects with or without curved surfaces can be described, classified and analyzed by their attributes.

Students will be skilled at...

- determining whether a shape has been divided into equal or unequal parts.
- dividing rectangles into equal shares with different shapes.
- dividing rectangles into equal squares and count how many squares are needed to cover the area.
- identify and draw polygons and list their attributes.
- identifying plane shapes that form the faces of solid figures.
- identifying solid figures by their faces, edges and vertices.

Assessments

- basic facts timed tests
- benchmark tests
- end of year test- administered after completing program.
- Placement Test- administered prior to delivering the program.
- task cards
- topic math projects
- topic quick checks
- topic tests

Activities

Problem of the Day-Present a daily problem that serves as a review from the previous day's lesson.

Vocabulary - Have students create a chart for each new vocabulary word that includes the word's meaning and an example or use vocabulary cards as flash card game

Station activities- Each section has center activities to reinforce skill (leveled)

- Clip and Cover: Students answer questions and try to cover four spaces in a row on a gameboard to win.
- Display the Digits: Students answer the problem and display the tile that rpresents the answer.
- Quick Questions: Toss number cubes and answers questions.
- Teamwork: Students in turn explain the steps in a multi-step process.
- Think Together: Students choose and discuss answers to problems.
- Tic Tac Toe: Students use algebraic rules to compute solutions to problems

- Toss and Talk: Students toss number cubes and explain how to solve resulting problems.

STEM - Certain sections have Going Digital integrating technology and the use of calculators such as:

- Making shapes p. 412

Interactive Learning - Problem-Based Interactive learning activities at the beginning of each topic such as using tools, structure,reasoning, generalizing, assessing reasonableness and modeling.

Topic Opener Projects - There is a math project for each topic (Topic 12). See Cross Disciplinary instruction for project and page numbers.

Practice work - Communicator practice can be done using Independent work and problem- solving practice problems in each section.

Ticket to Leave - Quick Checks on each sections

Activities to Differentiate Instruction

General strategies for modification of this curriculum for students with special needs, ELL, and gifted learners:

- **General strategies:**
  - preferential seating
  - manipulatives
  - modified workbook pages
  - practice or enrich homework pages
- **Center activities** - There are leveled center activities for each section. There is a separate activity for "Intervention", and then "On-Level" and "Advanced" are in spiral book.
- **Leveled practice pages** - There are three leveled (Reteaching, Practice, and Enrichment) sheets that can be used for practice or homework.
- **Math Concept Readers:** These readers allow the student to read the story at different levels- above level, on level, and below level. (also available on line with audio) Complete the Think and Respond and Write Math questions at the conclusion of each book.
- **Assessment**- Using Quick Check Review can determine differentiated instruction levels using sample

answers and using the rubric at the Close/ Assess and Differentiate section in the teacher edition.

Content specific modification for students with special needs, ELL, and gifted learners:

- **Topic**
  - **Below level students:**
    - Geometry is tied closely to objects children are already familiar with. This may offer children who are experiencing difficulty the opportunity to get a firm grasp of the subject. Take advantage of the opportunities the classroom offers for connecting shape names to real-life objects.
  - **Students with special needs:**
    - Ask children for examples of real-life versions of various figures. If children need assistance, hold up various classroom objects, such as a book (rectangle), a piece of chalk (cylinder), and so on and ask them to identify the shape of each.
  - **ELL**
    - Even at Grade 2, the study of geometry requires children to learn numerous specialized terms. Repeated oral language practice of these terms will help English language learners identify various figures, and it will help them learn to differentiate between and find similarities among the figures.
    - **Emerging:** Post the names of solid and plane figures on the board. Hold up each figure and say its name. Have children repeat the name after you.
    - **Expanding:** Hold up the various figures and ask children to tell you their names. You may wish to show the written name of each figure for them to read aloud.
    - **Bridging:** Have children identify each figure as you display it. See if they can relate its shape to that of an object in the classroom.
  - **Advanced/Gifted:**
    - Children who understand shapes and their properties can explore deconstructing shapes or constructing their own shapes in the form of puzzles.
    - They may also wish to see what happens when shapes are rotated or flipped.

Integrated/Cross-Disciplinary Instruction

Reading and Writing: The Worldscapes Readers present math problems to be solved within the context of nonfiction text. Think and Respond and Write Math questions can be found at the conclusion of the books. Language Arts/Science/Social Studies:

- Worldscapes Readers
- Topic Opener Math Projects
- Writing in Math/Math Journals
- Interactive Notebooks

Topic 12: Captain Invinciple and the Space Shapes: Art: Search through different media to find, cut , glue and label shapes to make a shape poster. p. 384

Resources

Topic Category in book form:

Topic 12: Geometry

Master Enrichment pages

Master Reteaching pages

Master Practice pages

Student Edition workbook

On line Resources available at www.pearsonrealize.com

- Teacher Edition (TE) Textbook
- Student Edition (SE) Textbook
- Tests on line
- Concepts videos
- Math Tools

21st Century 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.CRP4.1	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.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.