

# Literacy in Geometry

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# Connection to the Common Core State Standards

- Kindergarten: Geometry
  - > Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
  - > Analyze, compare, create, and compose shapes.
- Grade 1: Geometry
  - > Reason with shapes and their attributes.
- Grade 2: Geometry
  - > Reason with shapes and their attributes.
- Grade 3: Geometry & Geometric Measurement
  - > Reason with shapes and their attributes.
  - > Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
- Grade 4: Geometry
  - > Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
- Grade 5: Geometric measurement
  - > Convert like measurement units within a given measurement system.
  - > Understand concepts of volume and relate volume to multiplication and to addition.
- Grade 6: Geometry
  - > Solve real-world and mathematical problems involving area, surface area, and volume.
- Grade 7: Geometry
  - > Draw, construct, and describe geometrical figures and describe the relationships between them.
  - > Solve real-life and mathematical problems involving angle measures, area, surface area, and volume.

# Connection to Mathematical Practices

- MP4: Model with mathematics
  - > “Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.”

# Eye Spy Shapes by Debbie MacKinnon

- Have students identify objects in the classroom
- Bring something from home or picture of object that is one of the shapes discussed
- Kindergarten level

# Cubes, Cones, Cylinders, and Spheres by Tana Hoban

- Like Eye Spy Shapes
- Have students build shapes from materials like paper, blocks, newspaper rods
- K-1 grade level

# The Greedy Triangle by Marilyn Burns

- Use popsicle sticks, pipe cleaners, cardboard/cardstock rectangles to show shapes as you are reading the story
- Have a student help with adding sides to the shape
- Extension: vocabulary for the students
- 1-3 grade level

# The Secret Birthday Message by Eric Carle

- Have students write realistic messages to friends or family using shapes appropriate for words
- Have students make a shape book
- K-3 grade level





# Sir Cumference and the First Round Table by Cindy Neuschwander

- ◉ Different ways to make tables with pattern blocks, patty paper, or grid paper
- ◉ Great play on words in the book
- ◉ 2-4 grade level

# Spaghetti and Meatballs for All – A Mathematical Story by Marilyn Burns

- How to arrange tables in different settings
- Use building cubes to illustrate different arrangements
- Talk about similar shapes, perimeter
- Have worksheet to guide students through story stopping at different places to talk about table arrangements
- 3-4 grade level

# Bridges are to Cross by Philemon Sturges

- From what shapes are bridges made?
- Make own bridge from newspaper dowels in class
- Activity extension for students:
  - > connect to STEM and history of bridges
  - > Have students make own bridge from popsicles sticks or pasta
- 4-5 grade level

# New Biloxi-Ocean Springs Bridge



# Boston



# Golden Gate Bridge



# Golden Gate Bridge





# Nashville





# Nashville



# Charleston, SC



# Monster Movers by George Ancona

- Connections to STEM and bridges
- Finding size of ships, front loaders, buckets for cranes based on volume able to hold
- Using various measurements for load time
- 4-7 grade level

# Shuttle mover



# The Phantom Tollbooth by Norton Juster

- Milo encounters amusing situations that involve numbers, geometry, measurements, and problem solving
- The chapters take Milo on various adventures
- Could assign activities for different chapters, but not necessarily all of them
- Cross-curriculum with history
- 2-8 grade level



# Questions???



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