



# Grade 2 Unit 5

## Understanding Plane and Solid Figures

Volume 1 Issue 5

### References

#### Helpful Links:

Math Playground  
[http://www.mathplayground.com/index\\_geometry.html](http://www.mathplayground.com/index_geometry.html)  
(Geometry and Spatial Reasoning Activities)

Woodlands Resources  
<http://resources.woodlands-junior.kent.sch.uk/maths/shape.htm> (Interactive Geometry Games and Activities)

Shape Invaders Game  
<http://mrnussbaum.com/shapeinvaders1>

Johnnie's Math Page  
(Geometry Practice)  
<http://jmathpage.com/topics/jmpheadgeometry.html>

#### Math Grade 2 Textbook Connection:

Ch. 12, Lessons 12.1-12.2; 12.4-12.7

#### Textbook Online:

<http://connected.mcgraw-hill.com/connected/login.do>

Student User ID:  
ccsd(student ID)  
Password: cobbmath1

### Dear Parents,

Your child's math class is calling for students to be actively engaged in math activities in order to develop conceptual understanding of skills and concepts! In the classroom, students will frequently work on tasks and activities to discover and apply mathematical reasoning and thinking. Students are expected to explain or justify their answers and to write clearly and properly. Your child will receive a consumable My Math textbook and online access from his or her teacher.

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### Concepts Students will Use and Understand

- Further develop understandings of basic geometric figures
- Identify and describe plane figures and solid figures based on geometric properties
- Expand the ability to see geometry in the real world
- Partition shapes into equal shares by cutting, slicing, or dividing
- Represent halves, thirds, and fourths using rectangles and circles to create fraction models
- Compare fractions created through partitioning same-sized rectangular or circular wholes in different ways
- Understand what an array is and how it can be used as a model for repeated addition

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### Vocabulary

**angle:** the amount of turn between two rays that have a common end point (the vertex)

**attribute:** the characteristics of a shape or object

**column:** when numbers, objects, or shapes are arranged one above the other (in a vertical line)

**cube:** a solid figure that has six square faces, six edges, and six vertices

**edge:** a line segment joining two corners

**face:** the surfaces of a solid figure

**fraction:** a number that has a numerator and a denominator

**irregular polygon:** a two-dimensional shape that does not have all equal sides or all equal angles

**partition:** to separate or divide

**polygon:** a two-dimensional shape

**quadrilateral:** a polygon with four sides

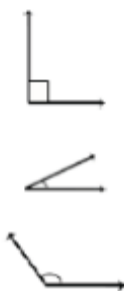
**regular polygon:** a two-dimensional shape that has all sides equal and all angles equal

**row:** when numbers, objects, or shapes are arranged side-by-side (in a horizontal line)

**vertex/vertices:** the point where two or more lines meet; the corner of a shape

## Symbols

Angles



### Example 1

Standard G.1 calls for students to identify, describe, and draw triangles, quadrilaterals, pentagons, and hexagons, including regular and irregular polygons.

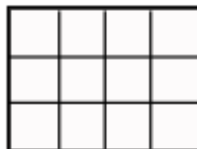
Draw a closed shape that has 5 sides. What is the name of the shape?



### Example 2

Standard G.2 calls for students to partition a rectangle into squares and determine the total number of squares in the shape.

Split the rectangle into 3 rows and 4 columns. How many small squares did you make?

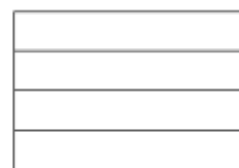


The rectangle was partitioned into 12 squares.

### Example 3

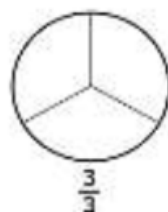
Standard G.3 calls for students to partition circles and rectangles into 2, 3, or 4 equal shares. This standard is a precursor to fractions, which students will explore in third grade.

Divide each rectangle into fourths a different way.



### Example 4

Students will investigate the meaning of equal shares. When a circle is folded or cut into three equal parts, each part is equal to one third of the whole.



## Activities at Home

- Quiz your child with shape riddles! For example, provide your child with the following riddle: I am a quadrilateral; I have four sides of equal length; I have four square angles. What shape am I? (square)
- Look for two-dimensional shapes around your home and at the market. What are some attributes of the shapes? Investigate the number of sides, angles, and vertices in the shapes.
- Look for three-dimensional shapes around your home and at the market. What are some attributes of the shapes? Investigate the number of faces, edges, and vertices of the shapes.
- Give your child some shape cut-outs (such as circles, triangles, rectangles, squares, etc.). Allow your child to fold the paper shapes and partition them into equal parts.
- Have your child draw various regular and irregular shapes and identify the number of sides, angles, and vertices in each shape. Ask your child to justify the meaning of various shapes (example: a rhombus has four sides of equal length).