Grade 7 Standards Parent Resource

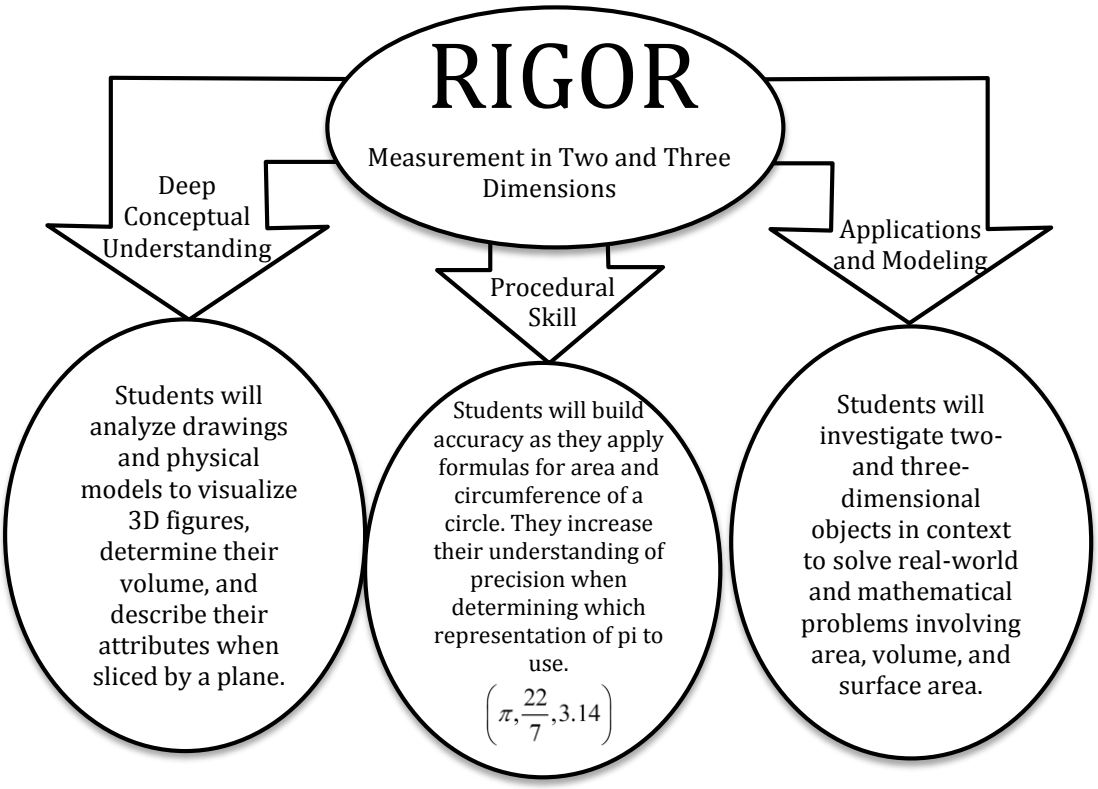
Unit 3: Expressing Geometric Relationships

Unit 3 includes 2 topics of study, listed below. This resource is for Topic 1.

Topic 1	*Topic 2*
Measurement in Two and Three Dimensions	*Angle Relationships*

Topic	**Learning Goals by Common Core State Standard** *Students will be able to...*
Measurement in Two and Three Dimensions	• Draw (freehand, with ruler *and protractor*, and with technology) geometric shapes with given conditions. *Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.* • Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. • Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. • Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. *Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.*

The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.



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Unit 3: Expressing Geometric Relationships Topic 1: Measurement in Two and Three Dimensions

Learning Experiences by Common Core State Standard

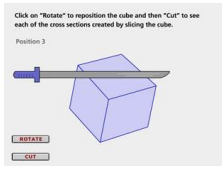
Topic 1: U Measurement in Two and Three Dimensions

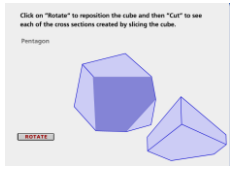
In school, your child will…

- Draw (freehand, with ruler, and with technology) geometric shapes with given conditions.

  Draw a segment AB 1 cm. in length. Draw a circle whose radius is segment AB.

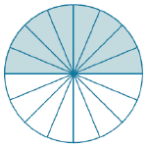
- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.





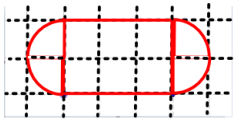
- Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

  Describe how the two illustrations can be used to describe the relationship between the area and circumference of a circle.



- Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

  The diagram represents the area of the placemat. Each square on the grid measures 4 inches in length. Find the area of the entire placemat.



adapted from: engage^ny

At home, your child can…

- Draw (freehand, with ruler, and with technology) geometric shapes with given conditions.

  Investigate automotive brand logos that are composed of polygons and circles. Practice measuring and drawing the logos using everyday tools, such as rulers and string.

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- Solve real-world and mathematical problems involving surface area of two-dimensional objects composed of triangles, quadrilaterals, polygons, and circles.

  For example, examine the shape of a landscaped flowerbed. Determine the shapes that compose the figure. Discuss the strategy that can be used to determine the area of the flowerbed.

Additional Resources

- Circles: calculate area, circumference, radius, and diameter (practice)
- Volume (practice)
- Cross Sections of a Cube (practice)
- Wall of Fire: Cube (investigation)
- Khan Academy: Find the volume of a triangular prism and cube (video tutorials)
- Khan Academy: Find the volume of rectangles inside rectangles (video tutorials)
- Teacher tube: Triangular and Rectangular Prisms and Composite Figures (video tutorial)

Grade 7 Standards Unit 3 Topic 1: Measurement in Two and Three Dimensions (flexbook)

Additional Practice links support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.