

## Covering and Surrounding Glossary

**Area** – The measure of the amount of surface enclosed by the sides of a figure.

**Circumference** – The distance around (or perimeter) of a circle. It takes slightly more than three diameters to match the circumference. The circumference of a circle is  $\pi$  ( $\pi$ ) times the diameter of the circle  $\sim = 3.1416$ .

**Diameter** – The maximum distance from one point on a circle to another point on the circle, through the center.

**Linear Dimensions** – Length, width, height.

**Perimeter** – The measure of the distance around a figure. Perimeter is the measure of length

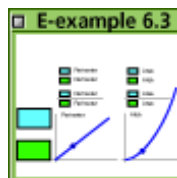
**Perpendicular lines** – Lines that meet at right angles. The length and width of a rectangle are perpendicular to each other.

**Radius** – The distance from the center of the circle to a point on the circle. The plural of radius is radii.

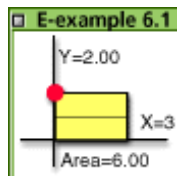
## Web Resources

[www.illustrations.nctm.org](http://www.illustrations.nctm.org)

## Learning about Length and Perimeter



## Sketches of an Area Model



## Connected Mathematics Project

## Everett Public Schools Mathematics Program

## Covering and Surrounding

### *Perimeter and Area* Unit Goals

- ◆ Find areas and perimeters of rectangular shapes and nonrectangular shapes
- ◆ Find relationships between perimeter and area
- ◆ Find the relationship between the area of a triangle and that of a rectangle
- ◆ Find area and perimeter relationships between various polygons

Proposed Time Frame:  
Approximately 6 weeks

## Mathematics in Covering and Surrounding

### Investigation 1 Measuring Perimeter and Area

- \* The area of an object is the number of square units needed to cover it, perimeter is the number of units of length needed to surround it.
- \* Figures with the same area may have different perimeters
- \* Figures with the same perimeter may have different areas

### Investigation 2 Measuring Odd Shapes

- \* Understand the meaning of area and perimeter
- \* Develop techniques for estimating areas and perimeters of nongeometric figures
- \* Use graphs to organize data and make predictions

### Investigation 3 Constant Area, Changing Perimeter

- \* Understand how perimeters of rectangles can vary even when the area is held constant
- \* Explore maximum/minima questions in the context of find the largest and smallest perimeter

### Investigation 4 Constant Perimeter, Changing Area

- \* Learn that areas of rectangles with a fixed perimeter can vary considerably
- \* Find the minimum and maximum areas of rectangles with a fixed perimeter

## Unit Project Dr. Doolittle's Park

After completing *Covering and Surrounding*, students will design a parking, including a scale drawing and a report that gives the dimensions of all the items included in the park.

### Tips for Helping at Home

Good questions and good listening will help children make sense of mathematics and build self-confidence. A good question opens up a problem and supports different ways of thinking about it. Here are some questions you might try, notice that none of them can be answered with a simple "yes" or "no".



### Getting Started

- \* What do you need to find out?
- \* What do you need to know?
- \* What terms do you understand or not understand?

### While Working

- \* How can you organize the information?
- \* Do you see any patterns or relationships that will help solve this?
- \* What would happen if...?

### Reflecting about the Solution

- \* How do you know your answer is reasonable?
- \* Has the question been answered?
- \* Can you explain it another way?

### At Home:

- 1 Talk with your child about what's going on in mathematics class.
- 2 Look for ways to link mathematical learning to daily activities. Encourage your child to figure out the amounts for halving a recipe, estimating gas mileage, or figuring a restaurant tip.
- 3 Encourage your child to schedule a regular time for homework and provide a comfortable place for their study, free from distractions.
- 4 Monitor your child's homework on a regular basis by looking at one problem or asking your child to briefly describe the focus of the homework. When your child asks for help, work with them instead of doing the problem for them.

### At School

- 1 Attend Open House, Back to School Night, and after school events.
- 2 Join the parent-teacher organization

Connected Mathematics Project

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