

## Indicators

### Objective:

**2.01 Determine the effect on perimeter, area or volume when one or more dimensions of two – and three – dimensional figures are changed.**

Vocabulary and Resources		
length	radius	polygon
width	diameter	prism
base	circumference	cube
height	pi, $\pi$	cylinder

**A.** Joy has a 2 gallon tank that houses two goldfish. The base of the tank is 14 inches by 6 inches. The height of the tank is 8 inches. For her birthday she was given a new fish tank that had a base 28 inches by 12 inches and a height of 16 inches. Approximately how many gallons of water would the new tank use?

Joy's brother has a tank that holds  $x$  gallons of water. If each dimension were doubled, how many gallons, in terms of  $x$ , would his larger tank hold ?

**B.** John and Mary each have a garden in the shape of a square. If the area of John's garden is four times the area of Mary's garden, how do the perimeters of the two gardens compare?

**C.** A company manufactures two different cylindrical containers for storage of pool chemicals. If the radius and height of the larger container are twice the radius and height of the smaller container, by what factor does the volume increase?

**D.** A square scarf is folded in half to form a rectangle. If the resulting rectangle has a perimeter of 15 inches, what are the area and perimeter of the square scarf?

**E.** Jenni made a small table for a class project. The top of the table is triangular in shape. Her mother wants her to make a larger table. If she changes the dimensions so that both the base and height of the triangle are tripled, how will the area of the table top change?

**F.** A cube has sides that measure 8 inches. If the length of one of the sides is increased by 25 percent, what is the percentage increase in the volume?

(From SREB publication *Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do*)