

Scaling Away

Number of Students: 2

Objectives:

- Measure the dimensions of a rectangular prism or cylinder, and determine the dimensions of an enlarged model using a scale factor of 3, 4, 5, 6, 7, or 8
- Compute surface area and volume and determine the ratio of surface areas and volumes between the object and the model
- Learn that if the dimensions of an object are multiplied by a scale factor n , then the surface area is multiplied by n^2 and the volume is multiplied by n^3

Materials

- Common rectangular or cylindrical objects (cereal box, soda can, pack of gum)
- Rulers or tape measures
- Calculators
- Scaling Away Activity Sheet
- Scaling Overhead
- Scaling Ratios Overhead

Procedures

- For Question 1, predict what you think will happen to the surface area and volume of an object when each dimension is increased. Discuss this with your partner then write a conjecture that you will test during this lesson.
- Questions 2-4 you will be measuring and computing with your object. Your partner will choose a different object.
- Questions 5-9 you will be computing using the scale factor that you chose. Make sure your partner chooses a different object and scale factor. Discuss your findings.
- Questions 10-11 you and your partner will answer together.