

Lesson #3: Drawing to Scale

Objectives

Students will be able to...

- Read a scale drawing.
- Identify where scale factors are used in the real world.
- Find a scaling factor when scaling an object.

Common Core Standards

Problem Solving and Critical Thinking 5.1
Responsibility & Flexibility 7.5
CTE Pathway D3.1, 3.2
Leadership & Teamwork 9.3
RSIT 11-12.2
RLST 11-12.2

Materials

You tube video https://www.youtube.com/watch?v=5HU_LCR5C7s&nohtml5=False
Scale Factor and Scale Worksheet
Exit Ticket: Too Small, Too Big

Lesson Sequence

- Introduce the concept of scaled drawings. Measuring the length of a line on each can be used to define the scaling factor. Show examples (e.g., simple blueprint). (5 minutes) Go over vocabulary (5 minutes):
Scale- the ratio of the size of a model or other representation, to the actual size of the object represented.
Ratio- essentially a comparison between two numbers equal to one divided by the other.
Proportion- 2 ratios that are equal
Scale Factor- the number by which each dimension of the model is multiplied to modeled objects actual size. A scale factor is a number used as a multiplier in scaling.

- Watch *You tube video*
https://www.youtube.com/watch?v=5HU_LCR5C7s&nohtml5=False (16 minutes)
- Work as a class on the *Scale Factor and Scale Worksheet*. Answer any questions as needed. (15 minutes)
- Pass out the *Exit Ticket: Too Small, Too Big*. Have students complete and turn in before leaving class. (5 minutes)

Assessment

Check for understanding during whole class instruction. Call on random students to answer questions.

Use Exit Ticket data results as an assessment of student understanding of the skill.

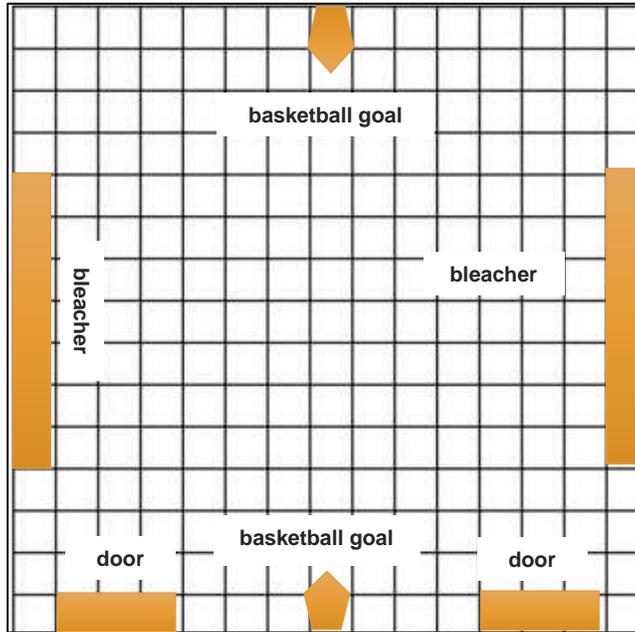
Accommodations/Modifications

Check for Understanding

One-on-One Support

Peer Support

Scale Factor and Scale Worksheet



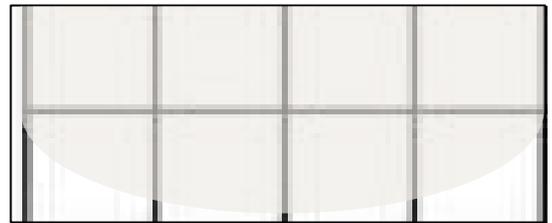
Let 1 unit on the grid paper represent 2 feet. So, 4 units = 8 feet. Convert all your measurements to units.

- A) How long are the actual bleachers?

- B) What are the actual dimensions of the door?

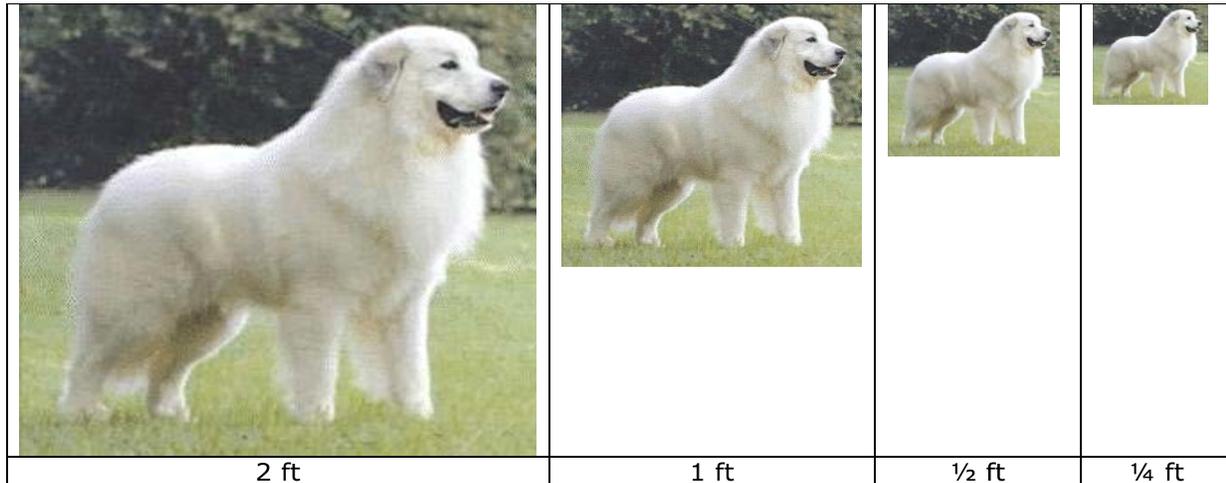
MAP: If the distance on a map is 2 cm represents 50 meters, what is the scale factor?

DECKS: On a blueprint of the deck, each square has a side length of $\frac{1}{2}$ inch. What is the actual width?



Exit Ticket: Too Small, Too Big

A scientist invented a machine that shrinks an object to half its original size. The pictures below show Classy before she was shrunk and after she was shrunk one, two, and three times.



1. How tall would Classy be if she shrunk one more time? Five more times?

2. If you were 6 feet tall and shrunk 10 times by the machine, how tall would you be?

3. Write an expression for Classy's size after she has been shrunk N times.