IM 6–8 MATH™ v.III

Unit 1
Scale Drawings

7

Lesson 8

Scale Drawings and Maps

Illustrative Mathematics®

Kendall Hunt

Learning Goal

Let's use scale drawings to solve problems.

A Train and a Car

Warm-up

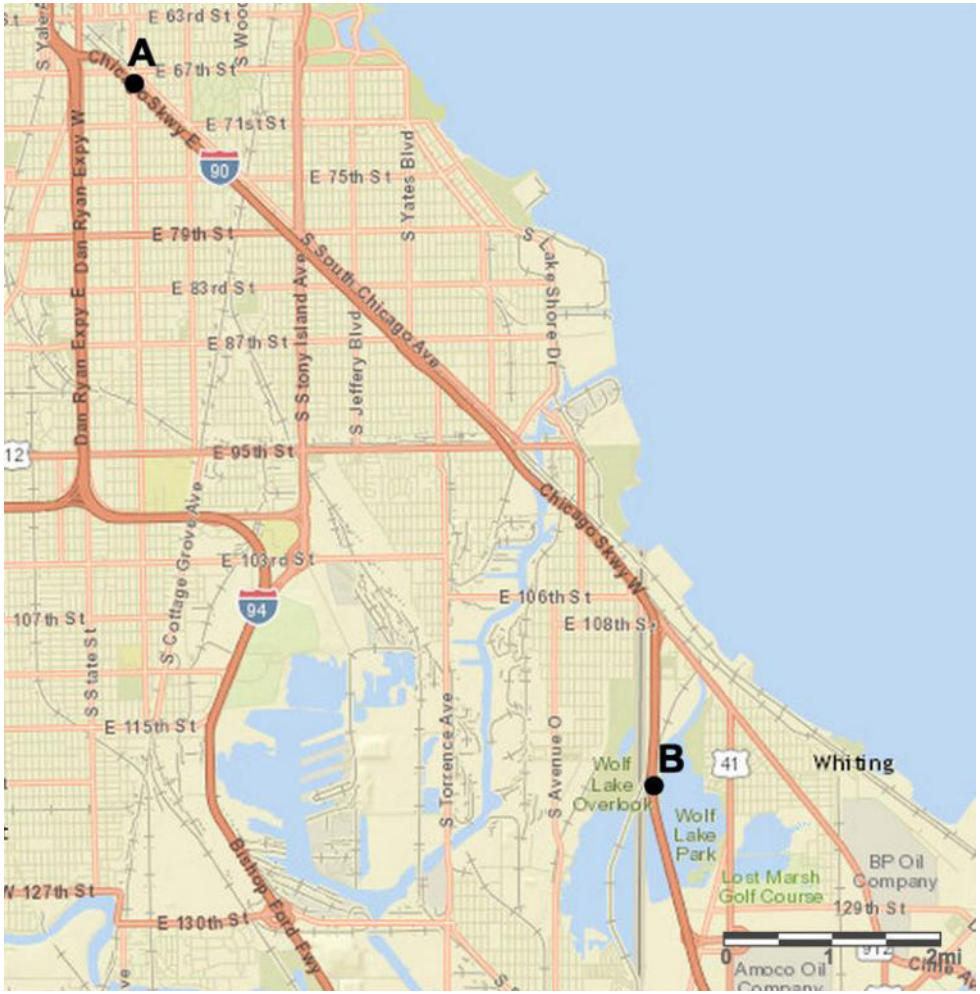
Two cities are 243 miles apart.

- It takes a train 4 hours to travel between the two cities at a constant speed.
- A car travels between the two cities at a constant speed of 65 miles per hour.

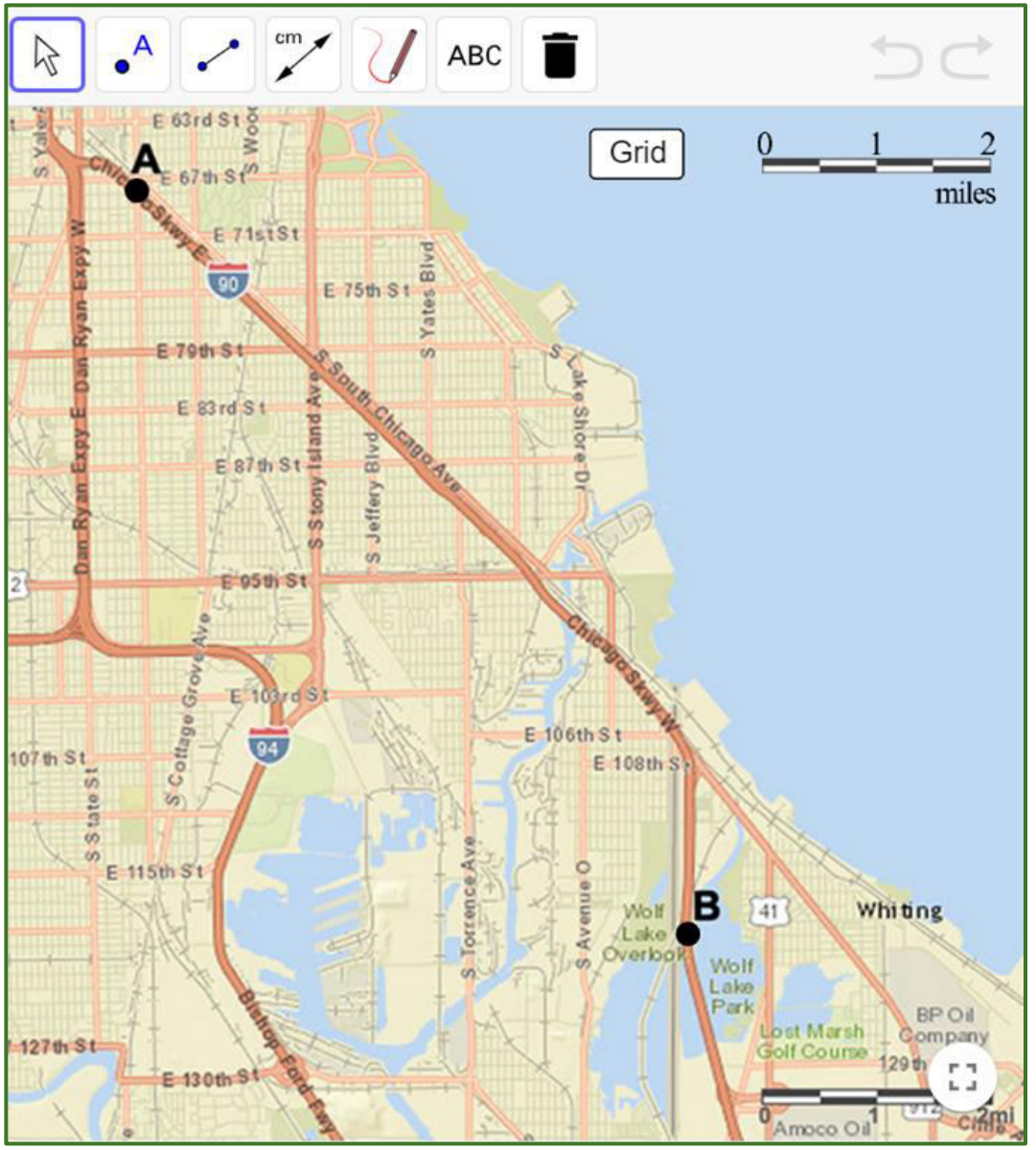
Which is traveling faster, the car or the train? Be prepared to explain your reasoning.

Driving on I-90

1. A driver is traveling at a constant speed on Interstate 90 outside Chicago. If she traveled from Point A to Point B in 8 minutes, did she obey the speed limit of 55 miles per hour? Explain your reasoning.
2. A traffic helicopter flew directly from Point A to Point B in 8 minutes. Did the helicopter travel faster or slower than the driver? Explain or show your reasoning.



Driving on I-90



Biking Through Kansas

A cyclist rides at a constant speed of 15 miles per hour. At this speed, about how long would it take the cyclist to ride from Garden City to Dodge City, Kansas?

Lesson Synthesis

- How does a map with a scale help estimate the distance between two places?
- If we know the approximate distance and how long the trip takes, how we would we find the speed?
- If we know the approximate distance and speed, how would we find how long the trip takes?

Learning Targets

I can use a map and its scale to solve problems about traveling.

Walking Around the Botanical Garden

Cool-down

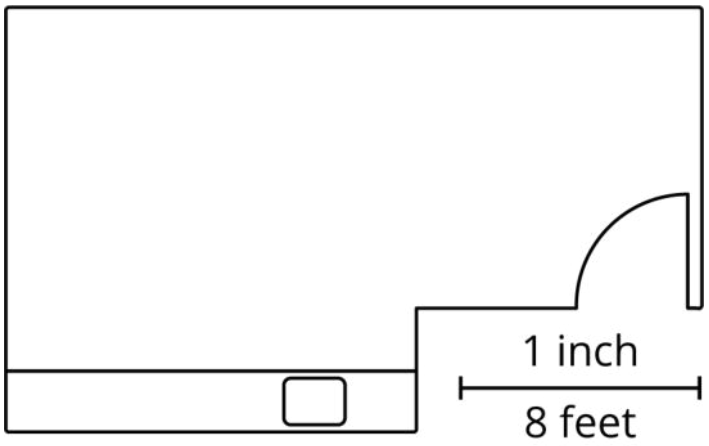
Here is a map of the Missouri Botanical Garden. Clare walked all the way around the garden.

1. What is the actual distance around the garden? Show your reasoning.
2. It took Clare 30 minutes to walk around the garden at a constant speed. At what speed was she walking? Show your reasoning.

scale

A scale tells how the measurements in a scale drawing represent the actual measurements of the object.

For example, the scale on this floor plan tells us that 1 inch on the drawing represents 8 feet in the actual room. This means that 2 inches would represent 16 feet, and $\frac{1}{2}$ inch would represent 4 feet.



scale drawing

A scale drawing represents an actual place or object. All the measurements in the drawing correspond to the measurements of the actual object by the same scale.