LESSON 1

Solve Problems Involving Scale

Dear Family,

This week your student is learning about scale drawings. In a **scale drawing**, the size of an original figure changes, but its shape does not change.

Here are some examples of scale drawings that you may be familiar with.

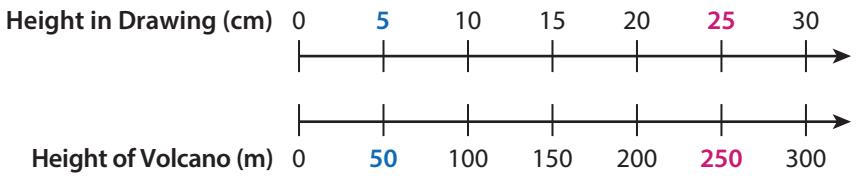
- A floor plan is a scale drawing of the actual layout of space in a building.
- A state road map is a scale drawing of the actual roads in the state.

Scale drawings are typically used when objects are either too small or too large to be shown at their actual sizes. Floor plans and maps are drawn smaller than actual size. Suppose a floor plan is drawn so that 1 inch on the floor plan represents an actual distance of 3 feet. For that floor plan, the **scale** is 1 in. to 3 ft.

Your student will be solving scale drawing problems like the one below.

> The scale from an actual volcano to a drawing of the volcano is 50 m to 5 cm. The height of the drawing of the volcano is 25 cm. How tall is the actual volcano?

➤ **ONE WAY** to find the height is to use a double number line.



➤ **ANOTHER WAY** is to use a **scale factor**.

The scale from the drawing to the actual volcano is 5 cm for every 50 m, so the scale factor from the drawing to the volcano is $\frac{50}{5}$, or **10**.

Multiply the height of the model by the scale factor: $25 \times 10 = 250$.

Using either method, the height of the actual volcano is 250 m.

Use the next page to start a conversation about scale.

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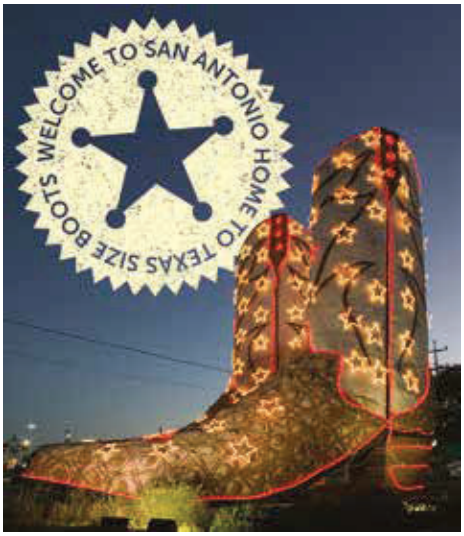
Activity Thinking About Scale Around You



➤ **Do this activity together to investigate scale in the real world.**

Have you ever taken a long road trip and come across some large roadside attractions?

The world's largest cowboy boots are a sculpture in Texas. They are over 35 feet tall! A cowboy boot is normally just 12 inches, or 1 foot, tall.

Gift shops often have models of buildings that fit in the palm of your hand. In Washington, D.C., you can get a Lincoln Memorial model that is 6.5 inches tall. The actual memorial is 80 feet tall! These giant and tiny models are scale copies of real-life objects.

? Where do you see scale drawings and scale copies in the world around you?

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