

### Activity 3: Scaling the Map Worksheet

Every map tells a story. The General Map tells us a lot about Alabraska’s surface features—information like city locations, transportation, rivers and fault lines. The Geology Map tells us the types of rocks that exist in Alabraska. Let’s learn how to read our maps and gain important information on how and where to build our cavern(s).

- Looking at the General Map, use a ruler to measure the distance in centimeters from city **a** to city **d**. Distance city **a** to **d** = \_\_\_\_\_ cm

The scale on your map helps you determine the distance in kilometers from city a to city d. Measure 1 cm on the General Map scale.

How many kilometers does 1 centimeter equal?  
\_\_\_\_\_ km per cm

Use the formula below to determine the distance in kilometers from city **a** to city **d**.

$$\frac{\text{_____}}{(\# \text{ cm from a - d})} \times \frac{\text{_____}}{(\# \text{ km 1 cm equals on map scale})} = \text{_____ km (distance)}$$

Using the same method, find the distance from city **b** to city **c**.

\_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_ km

- You can also use your scale and grid lines to help you find area. Refer to the General Map as you fill in the chart below. Measure and record the length and width of 1 grid space in cm. Use the scale to record how many kilometers the length and width represents.

	With ruler (cm)	Actual (km)
length		
width		

What is the area in kilometers squared for 1 grid space? \_\_\_\_\_ km<sup>2</sup>

- Since you know the area of 1 grid space, find the area of the military base.  
\_\_\_\_\_ km<sup>2</sup>

- Is the size of your cavern about the same as the military base, smaller than the base, or larger than the base? Remember, you can find the size of your cavern in Activity 2, Question 8!

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- Using the General Map scale, estimate the average length and width of Alabraska. Multiply the average length by the average width to estimate the area of Alabraska. Note: This is just a rough estimate because Alabraska is not a perfect rectangle!

Average Length (km)	Average Width (km)	Average Area (km <sup>2</sup> )

Compare the area of Alabraska to the area needed for your caverns. Is Alabraska large enough to hold the caverns? Explain below.

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