ES 11 **Maps and Scales WS** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Map scales show the ratio of the distance represented on a map to actual distance in real life. Scales can be shown three different ways:

1. **Numerical Ratio** with no units.

 IF: 1cm on map = 25, 000 cm in real life

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1. **Graphic Scales** can be used to help estimate distances.

*One cm equals four km*

1. **Written Scales**:

Practice Metric Conversion:

K h da m k c m

(king henry died by drinking chocolate milk)

1 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m

Map = 1

Actual scale

2.5 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

1. = \_\_\_\_\_\_\_\_\_\_\_\_\_\_km

**Example Calculation:** If the map scale is 1:1000, and the distance on a map measures 4 cm, what is the actual driving distance in kilometers?

1. Put variables into formula: 4 cm on map = 1 .

 ? cm in real life 1000

1. Cross multiply to solve for ?: (4cm x 1000) then divide by 1.
2. Answer = 4000cm
3. Then convert cm to km: 4 cm = 0.04 km

(you could also convert units first before putting into formula)

**Practice Calculating Map Scale**  (K h da m k c m)

1. The distance between two points on a map is 6.5 cm. The scale of the map is 1:1000. Find the ***actual*** distance in real life in km.
2. The distance between two villages is 6.25km. Find the **actual length in** **cm** between the two villages if the scale on the map is 1:5000.
3. The distance between two villages is 19km. The length between the two villages on a map is 190 cm. What is the **scale** on the map?
4. The length of a wing of a model plane is 8.5 cm. The scale of the model is 1:100. How long is the actual wing?
5. The length of a part on a real car is 0.35m. The scale of the model is 1:10. Find the length in cm of the part on the model.
6. If a model train set car is 3.8 cm. Actual car is 16.9 m. what is the scale? Convert 16.9 m to 1690cm . *Scale is 1:445. No units*
7. Diorama tree is 7cm tall. Scale is 1:300. What would be height of real tree? *21m*
8. Find the scale if 3cm on a map represents 150 km. *Scale is 1:3,000,000*