

TEACHER GUIDE: Using TimeMarkers With Properly Scaled Map of Your Area

Rather than having your students take the time to calculate the dimensions to use for marking distances on a map of your surrounding area, you could simply prepare a handy **TimeMarker Scale** for each team of two, along with a properly scaled map of your area, so they could find towns and other landmarks that correspond to direct-line distances from your school, and record those "Special Places" (towns / landmarks) on the Scale Events Worksheet. Here's how - (or, if you prefer, send me the address of your school, and I'll make the map to scale for you):

A. Run off sufficient copies of the TimeMarker sheets (with 4 TimeMarker Scales per sheet) for your class, so that there will be one TimeMarker Scale per team of two, plus some extras to cover losses. Carefully cut them apart so that the line with labeled pointers is very close to the edge.

B. Prepare a scaled map of your area to the same scale as the TimeMarker. Here's how you can do this (or have a talented student or parent or other teacher do this for you):

1. Get Google Maps on your computer. Enter the address (or cross streets) of your school.
2. Adjust the zoom slider (left side) down until the scale bar (lower left corner) reads "5 miles/10 km"
3. Perform a screen capture (command-shift-4 on a Mac); click on upper left corner of desired area and drag box to lower right corner. The selected area must include the scale bar and an area roughly 67 miles by 48 miles that includes a roughly linear stretch of towns in one direction that students would likely have traveled from their school or homes.
4. Open the Picture file created in your screen capture into Photoshop Elements or similar photo-handling program, and display the image at 100%. It may be roughly 10.7" wide x 8.7" high. Your goal now is to make adjustments that will print the map as close to 10" x 7.5" on a sheet of standard paper, and also have its scale measure 1.9 cm for the 5 miles dimension. Follow the next steps to accomplish this:
5. Rotate the image 90° to the left (to orient for printing).
6. Click on the Image > Resize > Image, and replace the width (e.g., 8.7") to read 7.3". This should also reduce the height to something less than 10". If not, reduce that height to 10".
7. Print the page and measure the scale. The 5 miles dimension should be very close to 1.9 cm.
8. If it is not, go back to the Image > Resize > Image and re-adjust the longest dimension down slightly (if scale is too long), or up (if scale is too short), probably by 0.1 inch increments, getting a new print for each change, until the scale bar measures 1.9 cm for the 5 mile distance.

REMEMBER, ABSOLUTE PRECISION IS NOT CRITICAL HERE.

WE JUST NEED AN APPROXIMATE SCALED MAP

9. When adjusted to proper size, print on the image in an open area the name of your school (or town), save the file, for future use, and print out a final copy. Use this copy to make multiple copies for use in class (1 map per team of two). Color is nice (and costly), but not necessary.
10. If you like, so they can be used in every class and for future years, you could have them laminated or you could place them in plastic sleeves.

C. Each team of two uses a **scaled map** of your region and a **TimeMarker Scale**. One student aligns the "Now" point with the school mark ("A") on the map so that the different time events coincide with towns or other landmarks at different distances in roughly one direction, and the most distant time (542 mya) aligns with the most distant landmark from school (see **example**). The second student then records on the **Scale Events Worksheet** the name of a familiar town that corresponds most closely to each time event. The TimeMarker may need to be rotated slightly around the school focal point to find towns that fit particular Events in time, but are not perfectly aligned with the others.

D. Answer the Discussion Questions, and discuss these in class.