Interactive Trail *Draft 4*

The trail begins at the Ela Sanctuary Information Station

Answer all questions in your notebook.

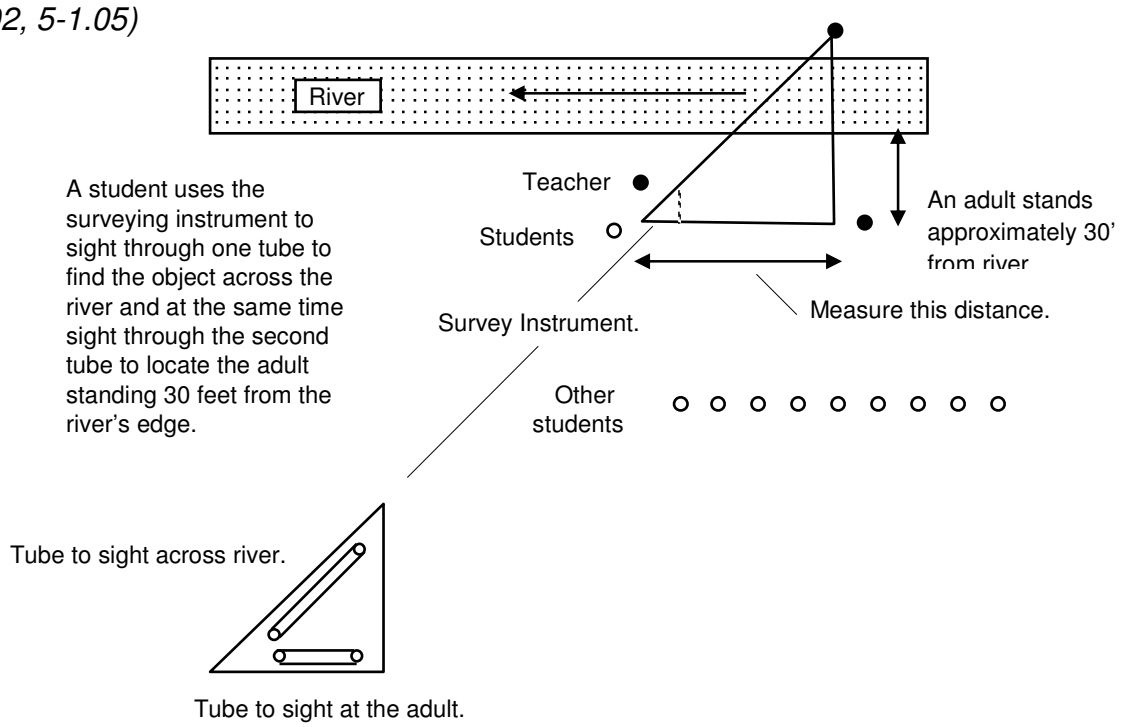
Exercise 8

Station 4

Powerful Triangles

It is possible to measure the distance between two points without actually placing a measuring tape between the two points. One way of doing this is by a method using **triangles and scale drawings** and a simple survey instrument**.**

In this exercise you will use a simple survey instrument to determine the distance across the Colorado River. To get an idea what needs to be done study figure 1. *(4-1.02, 5-1.05)*



1. *Stay at least 30 feet from the river edge.* The teacher will help one student while the rest of the students watch. The student will hold the survey instrument so she can look through the tube at the adult standing on the same side of the river. Next the student will sight through the second tube at the object on the other side of the river.
2. Once both sightings have been made the students will measure the distance between the student who did the sighting and the adult. Because the survey instrument uses 45° angles the distance along the river will equal the distance across the river. Subtract 30 feet from your answer, because that is how far you were from the edge of the river, and you will have determined the width of the river.
3. Repeat the procedure with one or two different students taking measurements.

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4. Determine the average width of the river as measured at this location.
5. How many feet, more or less, were your computed distances from the average? *(4-7.04, 5-7.05)*
6. What could account for the differences? Be specific. *(4-1.04, 5-1.06)*

- If you are working on the weather station, take a second weather observation here.