Interactive Trail *Draft 4*

The trail begins at the Ela Sanctuary Information Station

Answer all questions in your notebook.

Exercise 5

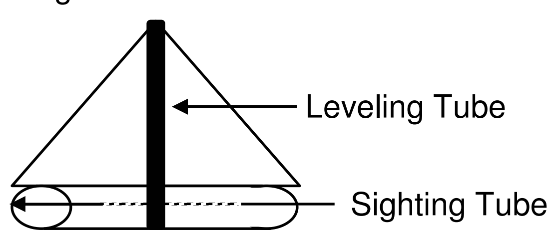
Station 2

Slippery Slopes

At Station 2 you will measure how far the pond is below the trail. Three people will need to work together to determine the measurements. You will need the **triangular survey instrument** and a tape measure to make your measurements. Use the diagram on the next page to help understand these directions. *(Questions 1-5, 4-1.02, 5-1.05_*

1. Student 1 will stand near the trail and student 2 will carefully walk down the slope.
2. Student 2 will sight through the tube of the survey instrument to find the feet of student 1. Holding the survey instrument, and walking slowly down the slope, stop when you see the feet of student 1 through the tube on the survey instrument.
3. Student 3 will watch the survey instrument to make certain the bubble on the level is centered. Student 3 will measure the horizontal distance between the eye of student 2 and the feet of student 1. Student 3 will measure the distance between the eye of student 2 and the ground. And, Student 3 will record these numbers on the table at the bottom of this page.
4. Student 2 stands still and student 1 repeats the same process as described in part 2 except student 1 becomes student 2 in the directions. Student 3 will take two measurements when student 1 has sighted the feet of student 2.
5. Continue this process until you reach the edge of the pond. *Be careful not to back into the pond.* You may need to bend close to the ground to sight through the tube of the survey instrument as you near the pond. Record the distance between the tube and the ground.

survey Instrument



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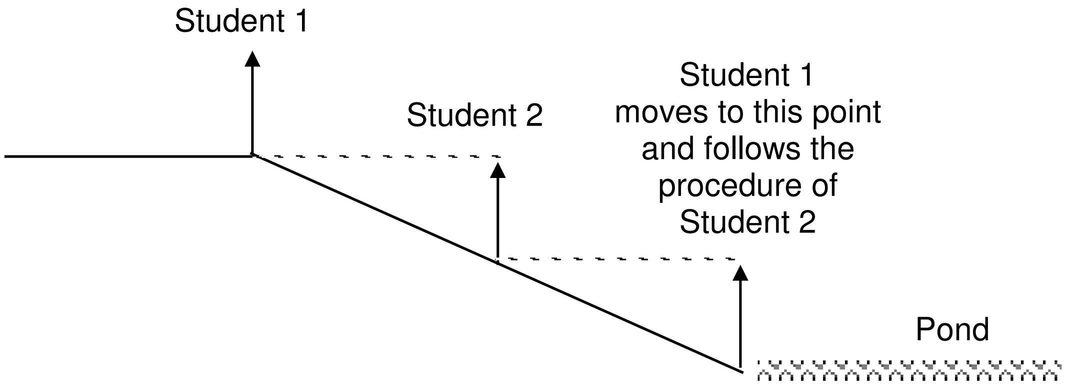

Now do the following: (Show all of your work and record your answers in your notebook.)

1. Record the total distance measurement and the total height measurement.
2. Change the totals of the measurements you made into feet.
3. How far below the trail is the pond?
4. How far is the pond from the trail?
5. Make a diagram to show the total change in distance and height. *(4-1.04, 5-1.05)*
6. Determine how steep the **slope** is by dividing the change in distance by the change in height. This will give you a value such as .5 feet change in height for every 1-foot change in distance. *(4-1.04, 5-1.05)*
7. How is the slope of land help determine the amount of **erosion**? *(4-4.14, 4-4.15)*
8. How does the plant covering on the slope determine the amount of erosion?
9. Can you see signs of "people" erosion? *(4-4.15)*
10. How do people change the rate of erosion? *(4-4.15)*
11. Do you see signs of other types of erosion on the slope to the pond? If so, what

	Distance from eye to ground.	Distance from eye of student 1 to feet of student 1.
Measurement 1		
Measurement 2		
Measurement 3		
Totals in Inches		

signs do you see?

12. Pretend that you are an **civil engineer** and you must give a report to a home builder that describes the slope of the ground and the type of erosion that has been found.
13. You have just done the job of a surveyor. Look up surveyors on the internet or in a book and find out what training they must have, what they do and how well they are paid.