

Water Clarity (Swift, Shallow Water) Field Worksheet



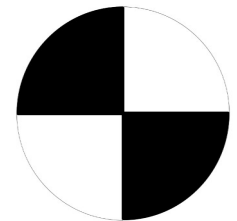
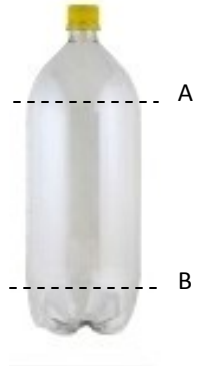
Name: _____

Class: _____

Date: _____

1. Constructing your Transparency Tube

- If you have a long clear tube ready, cut it to 120 cm and seal off one end using a plastic cap or parafilm. Stretch the parafilm tight over the opening and secure it with rubberbands, and skip to step 1f.
- If you don't have a tube at the ready, you'll have to make one: You'll need 3 soda bottles and some duct tape.
- Cut the top off of the first bottle at spot A (right), where the bottle reaches its full width.
- Cut the other two bottles at spots A and B, leaving only a plastic cylinder.
- Arrange the bottles so they form a cylinder, with the first bottle on the bottom. Duct tape the seams, both inside and out.
- Starting at the base, make a mark every cm (clearly labelling every 10th cm) all the way up your tube.
- Now, take the disk. Make sure it fits nicely into your tube. It should be almost as wide as the diameter of the tube, so that it slides down and sits flat on the bottom.
- Divide the disk into quadrants by drawing two diameter lines that intersect each other at right angles in the center.
- Paint one set of opposing quadrants black, the other white (see right).
- If your disk is made of a material that floats, such as plastic or wood, glue metal washers to the bottom until it sinks.
- Place your disk flat on the bottom of your tube and you're ready to go!



2. Site Name: _____ Site Location: _____

Site Notes: _____

3. Place the tip of the thermometer into the water. Wait two minutes, then record the result on the table provided.

4. Grab your bucket and position yourself above the site you wish to test. If this involves wading out into the water, wait a few minutes after arriving to allow for particles to settle.

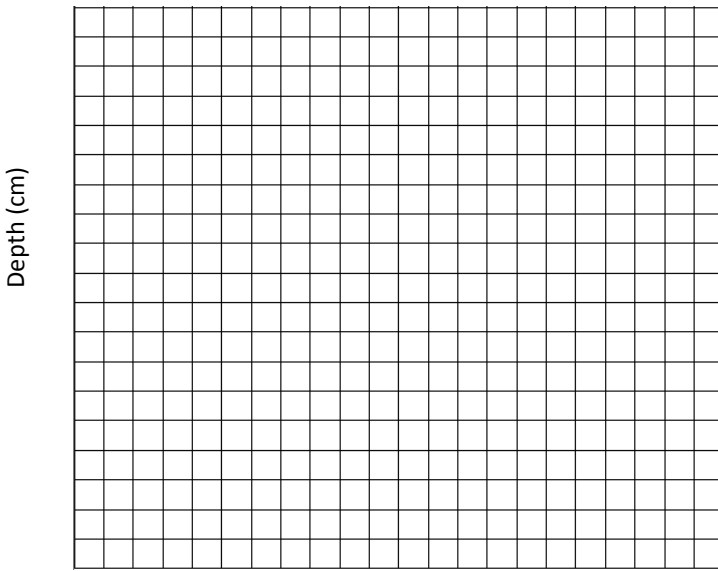
- The best place to sample stream water is in an area where the water is moving only slightly. We suggest an eddy (where the water swirls around a bit after going around a rock).

5. After everything has had time to settle, gently dip your bucket into the water without disturbing the silt at the bottom, and collect your sample. Take your bucket of water back to the bank.

6. Place your tube so it is upright and level on the ground. If it's a bit wobbly, have someone hold it up.

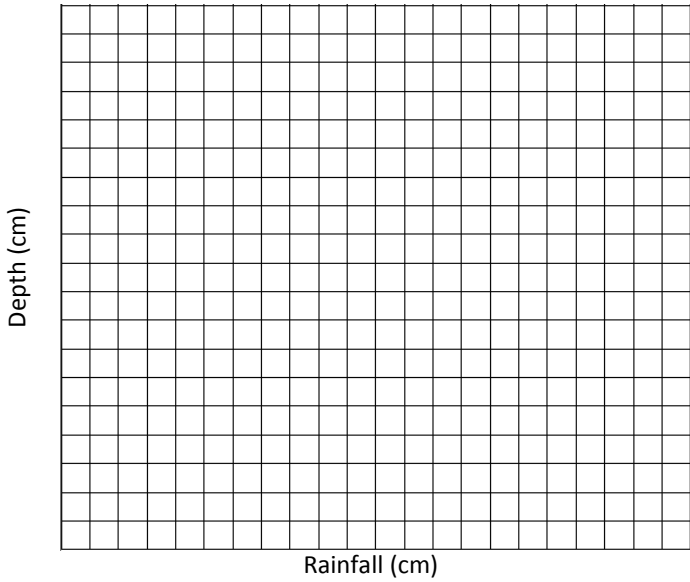
7. Scoop some water out of your bucket with a cup or pitcher and Position yourself so you are looking straight down the tube at the pattern. Begin slowly pouring water into the tube.
8. Continue incrementally pouring water until you can no longer see the pattern at the bottom.
9. At this point, stop pouring and record the depth to obscurity (ie the height of the water where you could no longer see the disk) on the table on the last page.
10. Repeat the experiment two more times, with different people serving as observers. Record each on the table, and calculate the average for the day.
11. Repeat the process once a month for at least six months, then answer the questions below.
12. Did water clarity vary with temperature? On the graph provided, plot water temperature on the x-axis and average measured depth for each sampling occasion on the y-axis. Do you notice any trends? Speculate on hypotheses that could explain your data.

Title: _____



13. Did rainfall affect the clarity of the water? Do some research to determine the total rainfall in the month prior to your samples. Plot the result on the graph below. Do you notice any trends?

Title: _____



14. What other factors could contribute to the clarity or cloudiness of water? Do some research and answer below.

Name: _____

Site: _____ Location: _____

Date	Water Temp	Depth 1 (cm)	Depth 2 (cm)	Depth 3 (cm)	Average Depth	Rainfall	Notes