

River Width

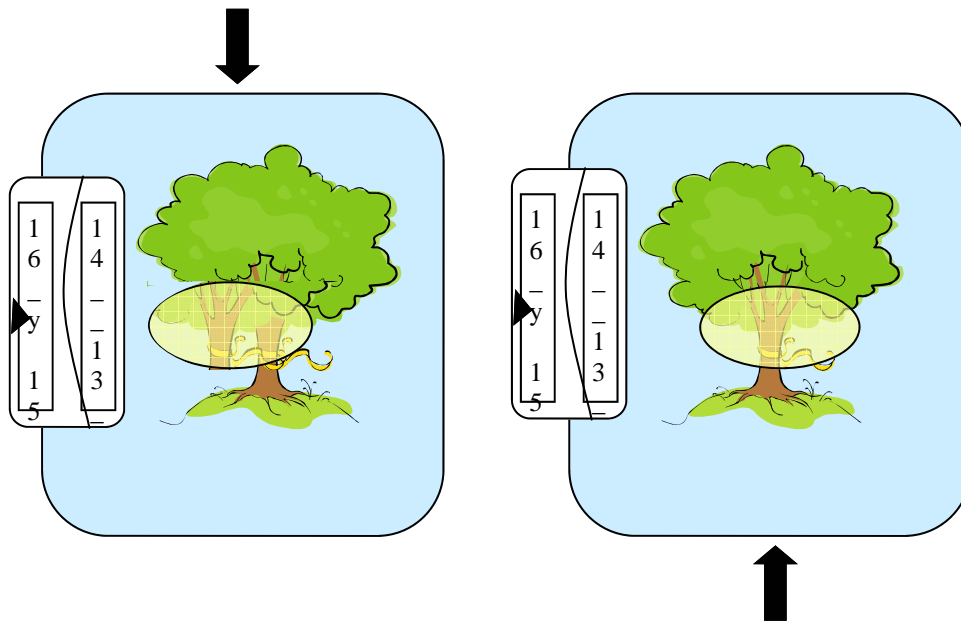
Why it is important:

The flow and shape of a river will change over time. These changes take place over several years, and can be a result of erosion, weathering, and sediment (sand and rocks) being carried down the river. The amount of water in the river also changes the width over a shorter period of time. By measuring the width of the river, scientists can track changes in the river from season to season and year to year.

Equipment Needed: rangefinder

Directions:

1. Look through the eyepiece, centering the flagged marker within the lighter yellow spot in the middle. The marker may appear to be split or unfocused.



2. Turn the dial until the image becomes focused within the yellow middle.
3. One set of numbers on the rangefinder scale is in yards, the other is in meters. Once your image is focused, record the distance in yards.
4. Repeat until your group has recorded 3 distances, find the median (middle), and record.

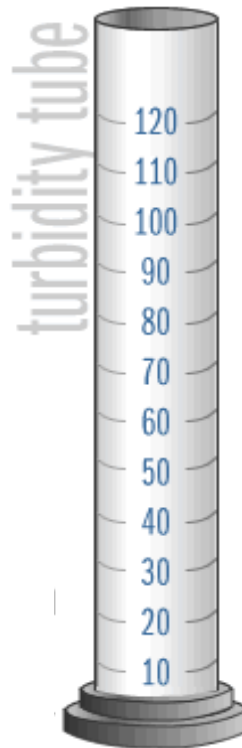
Turbidity

Why it is important:

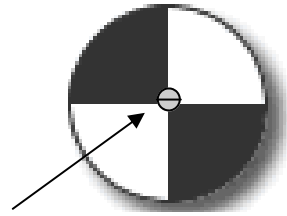
Turbidity is a measurement of how clear or murky the water is. Murky water has a higher turbidity than clear water. Turbidity is a result of eroded materials such as clay, silt, or mineral particles suspended in the water. Much of the turbidity in the water is a result of erosion that took place upstream. Turbidity levels affect the aquatic habitat, and can have an impact on the plants and animals that live in the river.

Equipment Needed:

turbidity tube



Looking down into the tube, you should see a disk with this design.



There is a screw in the middle of the patterned disk.

This pattern allows you to measure the clarity of the water you are sampling based on the depth of water in your tube (cm).

Directions:

1. One group member will carefully fill the tube with water from the river and bring the tube back to the rest of the group.
2. While looking down the tube, slowly let out water until you can *just* see the pattern. Record the water level in centimeters.
3. Looking down into the tube again, slowly release more water until the screw on the bottom is *just* visible. Record the water level in centimeters.
4. Calculate the average of the two measurements and record.

Stream Height and Width

Why it is important:

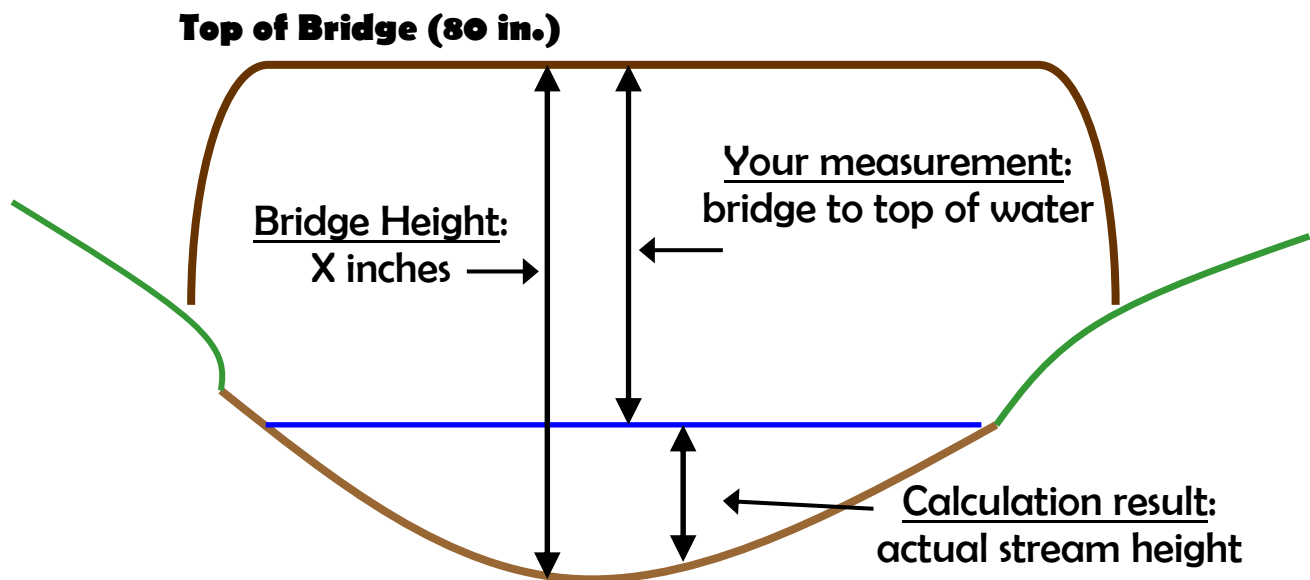
The height and width of a stream will change over time. Changes in the stream take place seasonally and are affected by factors such as melting snow and rainfall. By monitoring the stream height and width, scientists can track changes in the stream throughout the year.

Equipment Needed: tape measure

Directions:

Stream Height

1. From the white mark on the bridge, lower a tape measure until the end just touches the top of the water. Measure up to the white mark.
2. Subtract your measurement from the height of the bridge to calculate the stream height (see diagram below). Record your results.



Stream Width

1. Use the tape measure to find the width of the stream. Measure across the stream from water's edge to water's edge while standing on the bridge.
2. Record your measurement.

Soil pH and Stream pH

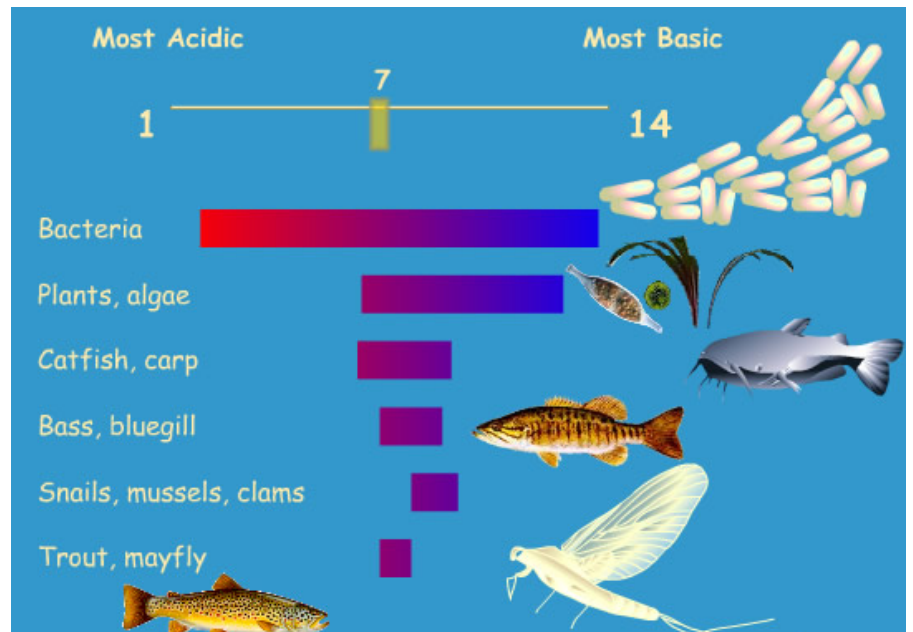
Why it is important:

A pH test measures how acidic or basic something is. The pH of the soil can affect how well different species of plants will grow. Some plants require slightly acidic soil, while others require a more neutral pH. The pH of the stream water also impacts which plants and animals can survive in the environment.

All living organisms require a specific pH range in order to survive (see diagram).

Equipment Needed:

soil pH kit
one pH strip



Directions:

1. Take 3 samples of soil from different designated parts of the stream bank. Use them to fill the wells in the kit.
2. Add 5 drops of solution, then sprinkle with powder. Wait 2 minutes.
3. While waiting for the soil, take one pH test strip and quickly dip it into the stream water. Let the strip sit out of the water for 15 seconds, then match the color on the chart and record the pH of the stream water.
4. Match the color of the soil test to the colors on the card and record the pH of the soil.
5. Empty the soil wells and place the pH test strip in the trash bag.