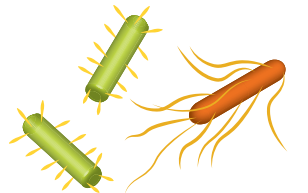
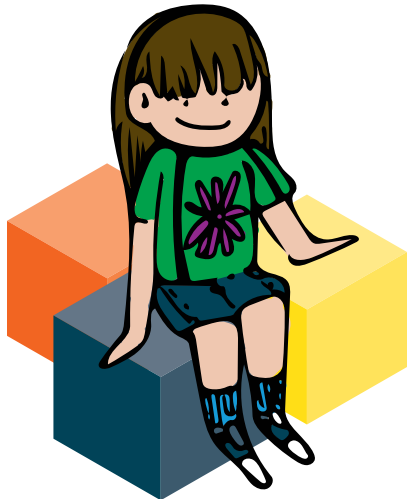
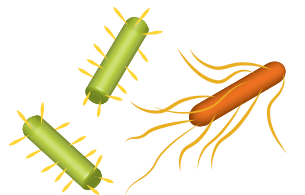
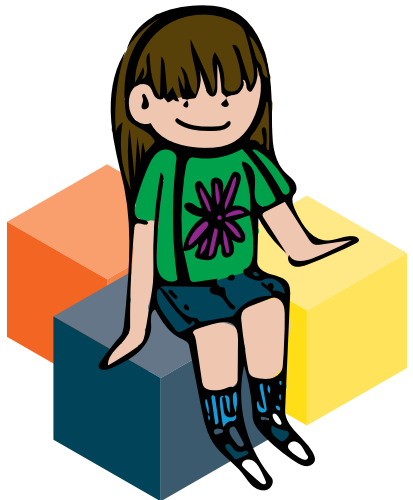


WHAT'S IN MY WATER?



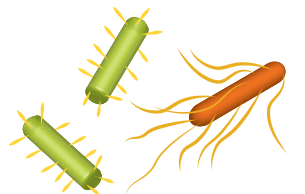
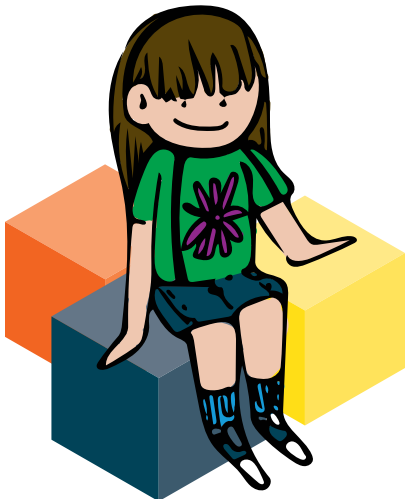
What is a Microorganism?

- Microorganisms are living things that are so small they normally can't be seen with the naked eye.
- Microorganisms come in all different shapes and sizes.
- The types of microorganisms found in a water sample can tell you a great deal of information about the quality of that water system.



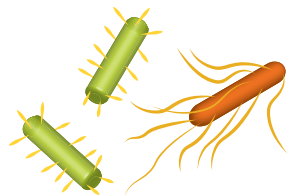
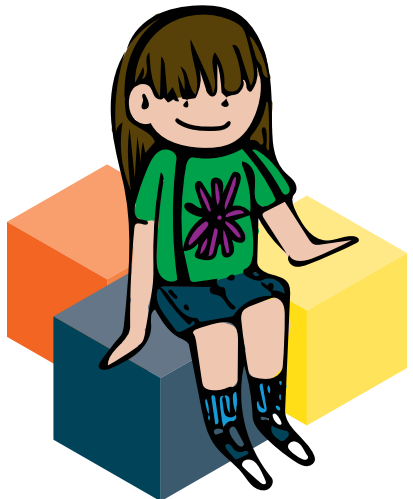
What Types of Microbes are Found in My Water?

- A variety of microbes are found in water sources.
- Some examples of these microbes are bacteria, algae, and diatoms.
- The type of water environment will determine the variety of microorganisms found there.



How do I Know Microbes are in My Water?

- Scientists can perform different tests to see if microbes are present in a water sample.
- Ways to observe microbes in water:
 - Visually, by looking at a sample of water under a microscope
 - Completing an acid/pH indicator test
 - Completing a nitrate and turbidity test

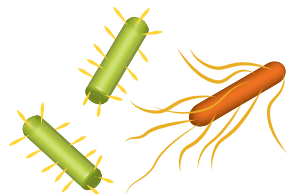
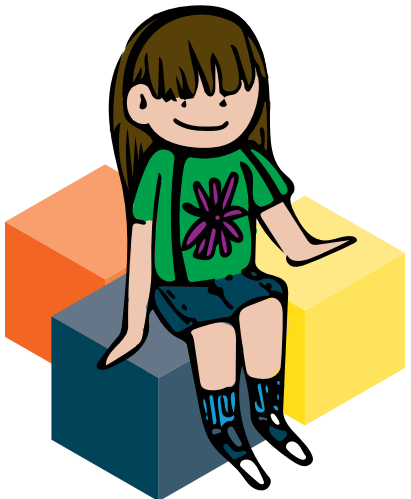


How to Properly Collect a Water Sample

1. Make sure you have a clear container that has a lid. This makes it so you can see the water sample and keep other particles from getting into the sample.

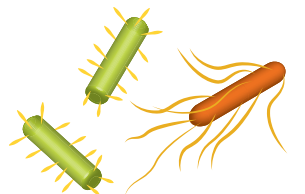
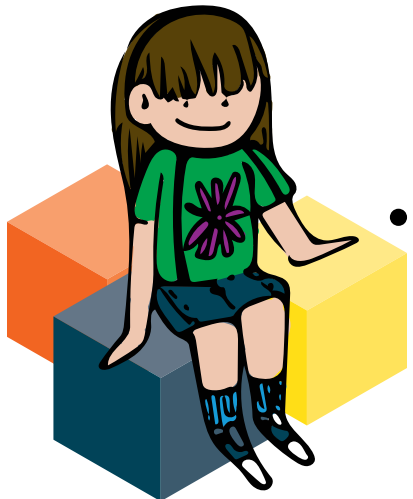
2. When collecting from a water source make sure to wear gloves and that you are in an area you are allowed to access.

3. When collecting the water sample, it is best to collect from the middle of the water source. This should be done because you want to avoid surface level environmental contaminants such as pollen resting on the top and sediments and rocks resting on the bottom.



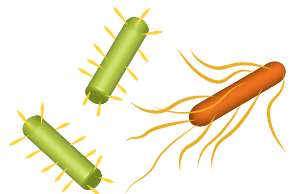
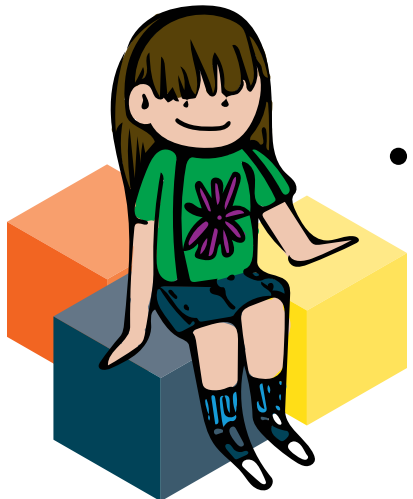
Using the Microscope to View Microbes

- Microscopes are tools used to view small objects that might not be seen with the naked eye.
- Microscopes can be used to view microbes and also to see the tiny details of each of the microbes.
- You will learn how to view microbes from your water sample collection through the microscope.
- Fresh water sources tend to have more visible microbes.



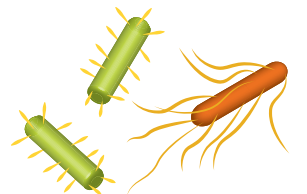
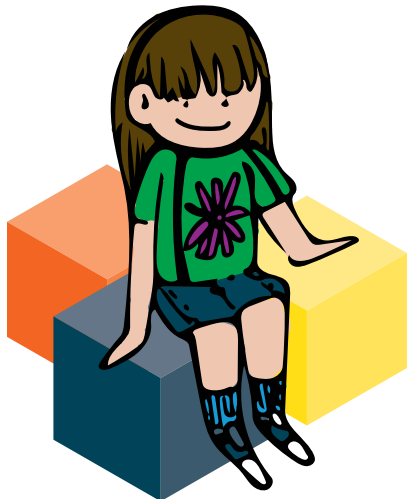
How Can pH Show the Presence of Microbes?

- pH testing can be used to determine how much acid is present in a water source.
- The pH scale goes from 0-14, 0 being the most acidic and 14 being the most basic.
- An acid is also visibly present when the pH test turns a red color.
- The more microbes that are found in water, the more acidic the water will be.



Using Turbidity and Nitrates to Show the Presence of Microbes

- Turbidity is process of measuring how clear a water source is. Water that is very hard to see through has a HIGH turbidity level. Water that is easier to see through has a lower turbidity level.
- More microbes present in a water sample cause a higher level of turbidity.
- Nitrates are different types of nutrients found in a water sample. Too many nitrates can lead to harmful problems in a water source.
- The more microbes that are present normally means higher levels of nitrates.



Importance of Clean Water

- It is important that you always consume water from a clean drinking source.
- Microbes that are found in water cannot be seen with the naked eye!
 - Just like in the jar of water...you can't see them...but you know they are there!
- Many of these microbes can cause illness or even death.

