Stream Characteristics - Background

Stream Structure

**Pools, riffles, and runs/glides**

create a mixture of flows and depths and provide a variety of habitats to support fish and other aquatic animals and plants. Pools are deep with slow water. Riffles are shallow with fast, turbulent water (whitewater) running over rocks. Runs/glides are deep with fast water and little or no turbulence (whitewater).

- **Draw a diagram** (see example above) of your stream sampling site (approximately 50-100 feet above and below where you collect your water samples). **Describe the stream** in terms of the presence of pools, riffles and runs/glides.
- **Add any other features** like fallen trees in the stream, gravel bars, bank erosion – anything that might affect the flow of the stream.

*Credit: Maggie Bell McKinnon, biologist, Washington State Department of Ecology*
Stream Structure

**Substrate** is the material on the stream bottom. Substrate types include:

- **Silt/clay/mud**
  
  --This substrate has a sticky, cohesive feeling. The particles are fine. The spaces between the particles hold a lot of water, making the sediments behave like ooze.

- **Sand (up to 0.1 inch)**
  
  --A sandy bottom is made up of tiny, gritty particles of rock that are smaller than gravel but coarser than silt (gritty, up to pea size).

- **Gravel (0.1-2 inches)**
  
  --A gravel bottom is made up of stones ranging from tiny quarter-inch pebbles to rocks of about 2 inches (fine gravel - pea size to marble size; coarse gravel - marble to tennis ball size).

- **Cobbles (2-10 inches)**
  
  --Most rocks on this type of stream bottom are between 2 and 10 inches (between a tennis ball and a basketball).

- **Boulders (greater than 10 inches)**
  
  --Most of the rocks on the bottom are greater than 10 inches (between a basketball and a car in size).

- **Bedrock**
  
  --is solid rock (or rocks bigger than a car).

- **Identify what substrate types are present in an area. Starting at the water’s edge, lay down a frame, 2 X 2 feet in size, and record the different substrate types. Repeat this going out towards the middle of the stream to a safe depth.**

- **For older kids, estimate the percentage of each substrate type within the sampling frame and repeat once or twice at different streamside locations.**
Stream Structure Data Sheet

Pools, Riffles, Runs/ Glides

Draw a picture of your stream..............................