

# Stream Data Sheet

Name \_\_\_\_\_

Stream Name \_\_\_\_\_

Location \_\_\_\_\_

Collection Date \_\_\_\_\_

Weather Conditions (Last 3 Days)

## Measuring Stream Velocity

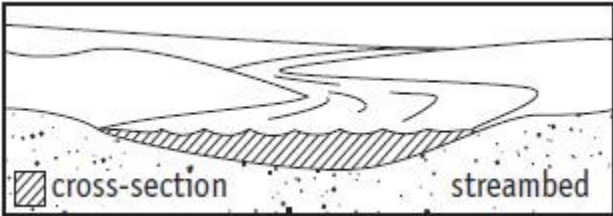
Record the time it takes for an orange to float downstream 10 feet. Repeat the experiment at various places along the stream. Make comparisons. Discuss changes in habitat that occur as the speed of the stream increases.

Stream Velocity Worksheet			
Tries	Distance	Time	Velocity
1	10 ft	÷	s= _____ ft/s
2	10 ft	÷	s= _____ ft/s
3	10 ft	÷	s= _____ ft/s
4	10 ft	÷	s= _____ ft/s
		Total =	_____ ft/s
			÷ 4
		Average Velocity	_____ ft/s

This worksheet was adapted from the National Park Service.

## Calculate the Cross-section Area

Choose a cross-section of creek in the middle of the 10-foot section of creek and calculate the cross-section area.



Result: \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ ft<sup>2</sup>  
 (width) (average depth) (area)

Average Depth Work Area			
	Depth	Convert to feet	
1	in	÷ 12=	_____ ft
2	in	÷ 12=	_____ ft
3	in	÷ 12=	_____ ft
		Total =	_____ ft
			÷ 3
	Average Depth		_____ ft

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## Calculate Stream Flow

Multiply velocity times area to calculate flow.

$$\frac{\text{ft/s}}{\text{(velocity)}} \times \frac{\text{ft}^2}{\text{(area)}} = \frac{\text{cfs}}{\text{(flow)}} \text{ (cubic feet per second)}$$

\_\_\_\_\_

**Water Clarity**     Clear     Cloudy     Muddy

\_\_\_\_\_

## Temperature

Measure the temperature of the stream at various depths and locations. Compare the results.

Location 1 F° \_\_\_\_\_ C° \_\_\_\_\_                      Location 3 F° \_\_\_\_\_ C° \_\_\_\_\_

Location 2 F° \_\_\_\_\_ C° \_\_\_\_\_                      Location 4 F° \_\_\_\_\_ C° \_\_\_\_\_

Average Temperature F° \_\_\_\_\_ C° \_\_\_\_\_

\_\_\_\_\_

## Water Quality

Use the biotic index to compare life in different stream habitats and the quality of the water. You will collect macroinvertebrate samples and determine the water quality of the stream.

### Stream Life: Macroinvertebrate Sampling

#### Step 1: Collect Samples

Wade into the stream and scoop material from the bottom of the stream. Push and pull the kick net through the stream. Hand pick organisms from under and on top of rocks and logs.

#### Step 2: Prepare Samples

Rinse the sediment from your sieve. Hold your kick net over a plastic pan and use a bucket of water to wash the material into the pan.

#### Step 3: Sort Samples

Sort and identify the macroinvertebrates using the biotic index and collection jars. Record the number of the types of organisms on the macroinvertebrate stream data worksheet.

## Macroinvertebrate Count

Put a check in the box next to the organism you find. Multiply the number of organisms by the points for each class. Add the index values for each class.

Class 1: Sensitive (3 Points Each)	Class 2: Somewhat Tolerant (2 Points Each)	Class 3: Tolerant (1 Point Each)
<input type="checkbox"/> Caddisfly Larvae	<input type="checkbox"/> Crane Fly Larvae	<input type="checkbox"/> Aquatic Worms (Tubifex)
<input type="checkbox"/> Dobsonfly Larvae	<input type="checkbox"/> Crayfish	<input type="checkbox"/> Black Fly Larvae
<input type="checkbox"/> Fairy Shrimp	<input type="checkbox"/> Damselfly Nymphs	<input type="checkbox"/> Drone Fly Larvae
<input type="checkbox"/> Fish & Other Invertebrates	<input type="checkbox"/> Dragonfly Nymphs	<input type="checkbox"/> Leeches
<input type="checkbox"/> Gilled Snails	<input type="checkbox"/> Fingernail Clams	<input type="checkbox"/> Lung Snail
<input type="checkbox"/> Mayfly Larvae	<input type="checkbox"/> Flatworms	<input type="checkbox"/> Other Snails
<input type="checkbox"/> Riffle Beetle Adult	<input type="checkbox"/> Scuds	<input type="checkbox"/> Midge Larvae
<input type="checkbox"/> Salamanders	<input type="checkbox"/> Sowbugs	<input type="checkbox"/> Mosquito Larvae
<input type="checkbox"/> Stonefly Nymphs	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Water Penny Larvae	<input type="checkbox"/>	<input type="checkbox"/>
Boxes checked x 3 = _____ index value Class 1	Boxes checked x 2 = _____ index value Class 2	Boxes checked x 1 = _____ index value Class 3
<p>Water Quality Rating                      <input type="checkbox"/> Excellent (&gt;22)    <input type="checkbox"/> Good (17-22)</p> <p>Total Index Value = _____        <input type="checkbox"/> Fair (11-16)        <input type="checkbox"/> Poor (&lt;11)</p>		