STUDENT WORKSHEET FOR FLOWOMETER STUDY

Student/Group Name:_____

Stream Name:

Date:

Water Temperature:

Present Weather:

In this part of your study we want to describe a few of the physical features of the stream. Those features include the average width, the average depth, and the average speed of the water. Using those values, we can calculate how much water is flowing past any point.

Your teacher will help you choose the portion of the stream you are going to study. Be sure that you have a representative sample containing riffles, pools, and other features. Next, look for three "average" cross sections of your study area. Working in teams, place a measuring tape across the width of the stream and anchor both ends. Anchor the loose end of the tape on the left bank as you look upstream.

Note the total width, and divide that by 5. Place a marker on the tape at the length of each of the 5 intervals. Using a yardstick, measure the depth at each of the markers you put on the measuring tape. At the same point you took the depth measurement use the flowometer to determine the rate of flow in each increment. Be sure that you stand downstream of the flowometer.

	Distance from bank (ft)	Depth (ft)	Velocity (ft /sec)
Increment #1	_____	_____	_____
Increment #2	_____	_____	_____
Increment #3	_____	_____	_____
Increment #4	_____	_____	_____
Increment #5	_____	_____	_____

To calculate the discharge we need to know the width of each increment in the study. To calculate the width subtract the distance to the previous section from the distance to the next cell then divide by 2.

Calculate the width of each cell:

	Width of cell (ft)
Increment #1	_____
Increment #1	_____
Increment #1	_____
Increment #1	_____
Increment #1	_____

The discharge from any one area is calculated by multiplying the width (w) times the depth times the velocity. To find the total discharge, add all the discharge values.

	Width (ft)		Depth(ft)		Velocity Ft/sec)		Discharge
Increment #1	_____	×	_____	×	_____	=	_____
Increment #2	_____	×	_____	×	_____	=	_____
Increment #3	_____	×	_____	×	_____	=	_____
Increment #4	_____	×	_____	×	_____	=	_____
Increment #5	_____	×	_____	×	_____	=	_____

TOTAL DISCHARGE
=
_____

You may also wish to draw a graph illustrating the contours of the stream bed. All you need to do is to graph distance on the "X" axis and depth of the "Y" axis. The graph will show more detail if you include more observation points then the five you previously took.