

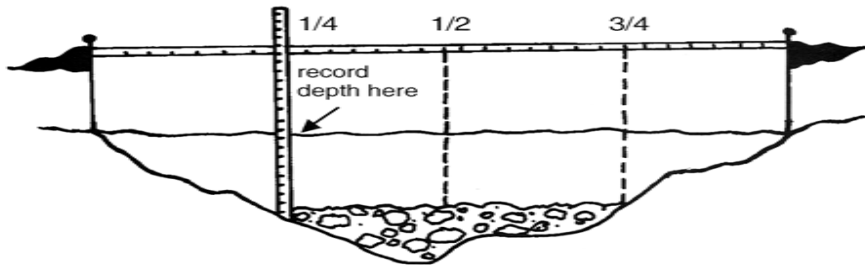
# Stream Flow

## Step 1 - Measure length of stream section

- Choose a fairly straight section of stream.
- Use the tape measure to measure a 50 foot section. Place flags at both ends (next to the water's edge).
- Record the length stream section as "50 feet" in Step 1 of the Physical Data Collection Sheet.

## Step 2 - Measure cross-section area

- Measure width of stream section
  - Stretch a tape across the stream between two flags.
  - Record your width in Step 2a of the Data Collection Sheet in inches.
  - Keep holding the tape measure between the two flags. You will need it for the next step.

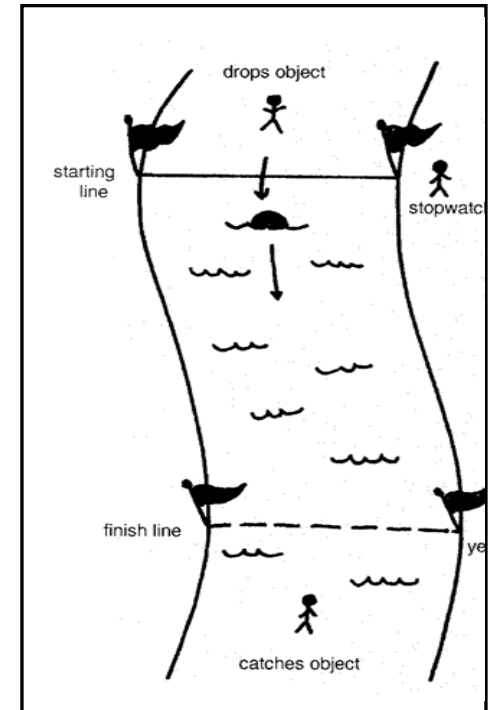


- Measure average depth of stream section
  - With the tape measure strung between the two zero ft flags, have a third person move one-fourth of the way across the width of the stream. To find this distance divide your width by 4. For example, if your stream is 20 feet, you would move 5 feet across.
  - At this one-quarter mark, *rest* your yard stick on the stream bottom (do not dig) and record the depth in Step 2b of the Physical Data Collection Sheet. Record depth in inches.
  - Move the same distance out along your tape measure (you will now be one-half way across the stream).
  - Record the second depth measurement in Step 2b.
  - Record the depth at three-fourths of the way across the stream.
  - Add the three depths and divide by three to get an average depth for your stream section.
- Calculate cross-section area
  - Multiply the width times the depth. You now have cross sectional area in square inches. Divide that value by 144 for cross sectional area in square feet.

# Velocity

**Step 3 Calculate average travel time** – the time it takes an object to travel your 50 foot section

- Drop a floating object (ping pong ball, orange or grapefruit) in the main channel upstream of your zero flag. Start the stopwatch when the object passes the zero flag (the "starting line").
- Yell to stop the clock when the object passes the 50 ft flag (the "finish line").
- Collect the object and record the time on the data sheet.
- Repeat steps 1-3 two more times. Throw out any tests where the float gets stuck in rocks or debris.
- Add all three travel times and divide by 3 to get an average. Record on data sheet.



## Step 4 Calculate velocity

- Divide stream section length by average travel time. This will give you velocity in feet per second (feet/sec).

## Step 5 Calculate stream flow

- Multiply the average cross-section area times the average velocity to determine stream flow for your section. Your flow will be in cubic feet per second.