Name: _____ Date: _____ Class: _____

Relationship of Transported Particle Size to Water Velocity

Purpose: In this exercise you will gain practice interpreting a chart dealing with how fast water must be moving in order to be able to transport different sized rock material.

Procedure: How to use the *Relationship of Transported Particle Size to Water Velocity* chart on this page.

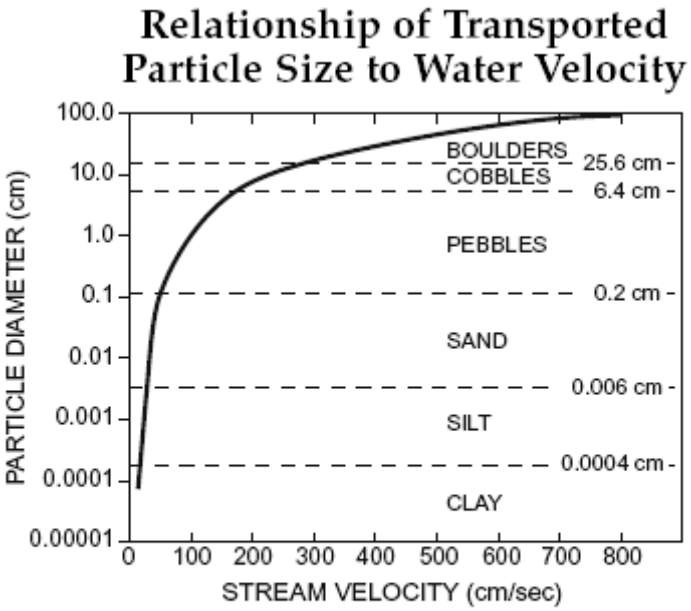
1- Look at all the titles and figures for both the X and Y axes.
2- Remember: Go to the information you are ***GIVEN*** in the problem you must solve.
3- Then either go ***up to*** or ***over to*** the curved line.
4- Proceed carefully ***over*** or ***down to*** the other axis to read your final answer.

5- When asked to ***NAME*** particles: go to the speed, go up to the curved line and notice the name of the particle at the exact point where you have stopped. This particle and all others below it ***can*** be carried at that water velocity. Particles above that point ***cannot***.

6- You should use the edge of a piece of paper to align your water velocity and/or particle diameter with the curved line. If you try to "eye ball" your answer, the slightest slant off course will give you an incorrect response.

Directions: Answer all questions on page 2 basing your answers on the illustration to the right.

Use correct **units** when necessary.



*This generalized graph shows the water velocity needed to maintain, but not start, movement. Variations occur due to differences in particle density and shape.

The University Of the State of New York; Board of Regents Earth Science Regents Examinations

1. Name the particles (sediments) that will be carried by water at the following velocities:

   a. 500 cm/sec _____

   b. 100 cm/sec _____

   c. 200 cm/sec _____

   d. 50 cm/sec _____

   e. 650 cm/sec _____

   f. 325 cm/sec _____

2. Name the particle(s) that will be deposited if a stream moving at 700 cm/sec suddenly decreases in velocity to 225 cm/sec?

   _____

   _____

3. State the water velocity necessary to maintain the transport of the following sized particles.

   a. 0.1 cm particle diameter: _____

   b. 25.6 cm particle diameter: _____

   c. 0.001 cm particle diameter: _____

   d. 10 cm particle diameter: _____

   e. 0.15 cm particle diameter: _____

   f. 5.0 cm particle diameter: _____

4. Why do you think particle size diameters appear on **both** the left and right sides of the chart?

   _____

   _____

5. As soon as water velocity decreases even slightly then what will happen to particles that are being transported?

   _____

   _____

6. Name the particle(s) that **cannot** be transported by a stream moving at 150 cm/sec.

_____

_____

7. State the **range** of particle sizes for a **cobble**.

_____

_____

8. At approximately what speed will the stream no longer be able to transport **pebbles**?

_____

_____