

SETTLING RATES LAB

Name _____

Block _____ Date _____

OBJECTIVE: Student will investigate the effects of size, shape and density on the settling rates of various objects.

MATERIALS: ○Modeling clay
 ○Plastic Beads ○Stop watch

Length of Tube (from start to stop) _____ cm

Size

Particle Type	Mass (g)	Diameter (cm)	Settling Time (sec)	Settling Rate (cm/sec)
CLAY (small-round)		.4 cm		
CLAY (small-round)		.4 cm		
AVERAGE - SMALL		.4 cm		
CLAY (med-round)		.7 cm		
CLAY (med-round)		.7 cm		
AVERAGE - MEDIUM		.7 cm		
CLAY (large-round)		1.0 cm		
CLAY (large-round)		1.0 cm		
AVERAGE - LARGE		1.0 cm		

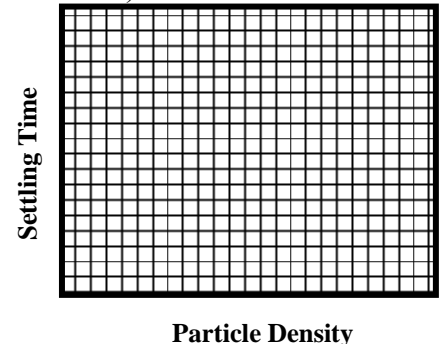
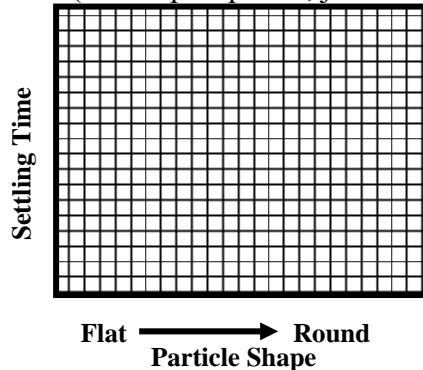
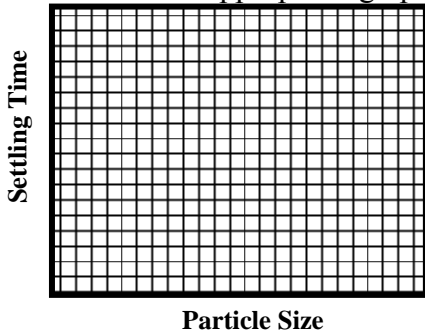
Shape

Particle Type	Diameter	Settling Time	Settling Rate
ROUND - CLAY (copy from <i>AVERAGE - large</i>)	1.0 cm		
FLAT - CLAY	1.0 cm		

Density

Particle Type	Mass	Density	Diameter	Settling Time	Settling Rate
CLAY (copy from <i>AVERAGE - med</i>)		High	.7 cm		
Plastic Bead		Low	.7 cm		

Sketch the appropriate graphs below (do not plot points, just show a trend line):



Conclusions:

1. What is the relationship between particle size and the *rate* at which particles settle? _____

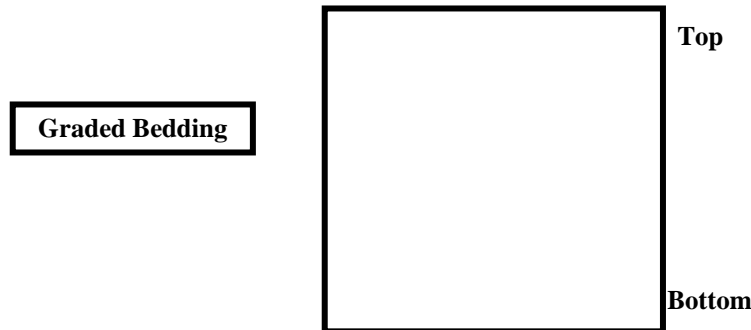
2. What is the relationship between particle size and the *time* it takes for particles to settle? _____

3. Which particle had the fastest settling rate? Why (at least 2 reasons)? _____

4. What is the relationship between particle shape and the *rate* at which particles settle? _____

5. What is the relationship between particle density and the *rate* at which particles settle? _____

6. When various sized particles are dropped into quiet waters, in what pattern do they generally settle? What size settles to the bottom first? Draw a picture to show this.



7. When various sized particles are transported in a stream, in what pattern do they generally settle when they reach a large body of water? What size settles first? Draw a picture to show this.

