

Pre-evaluation

HOW FAST WATER TRAVELS THROUGH SOILS?

Name: _____, School: _____, Grade: _____

Read the following questions, and for each one circle the best choice as accurate as possible:

1. Out of the soils listed below, which one has larger grains?

- a. Gravel
- b. Sand
- c. Clay
- d. All have the same size

2. In a soil sample, what soil do you consider have more voids or spaces between grains?

- a. Gravel
- b. Sand
- c. Clay
- d. All above have same voids

3. Which soil allows water to run through it faster?

- a. Gravel
- b. Sand
- c. Clay
- d. All above

Statement	Agree a lot	Agree	Disagree	Disagree a lot
I want to learn more about engineering problems				
Engineers should know where the water is within soils and how fast it travels through				
Math is important in <i>my</i> everyday life				
Robots can help solve engineering problems				
I want to use robots more often in the classroom				

5. Which soil, out of gravel, sand, and clay, have the highest permeability, and which one have the lowest permeability?

6. Without using an ultrasonic sensor for the permeability test, how much water was collected, and how long did it take to collect such amount of water?

7. Using an ultrasonic sensor for the permeability test, repeat the measurements and take the readings for amount of water and time.

7. What is the flow of the groundwater flow in this model?

(Recall that flow = Volume / time)

