

Name: _____

Date: _____

Water Infiltration Notes

Infiltration: _____

*Why doesn't rainwater always **infiltrate** into the ground?*

1. It can **evaporate!** (4 factors that favor evaporation?)

1. _____ 2. _____ 3. _____ 4. _____

2. It can **run off** the land! (What factors favor run off?)

1. _____ 2. _____

3. _____ 4. _____

3. **Trees and vegetation** use it up! (How do trees use rainwater?)

1. _____

2. _____

3. _____

*So what factors favor **infiltration**?*

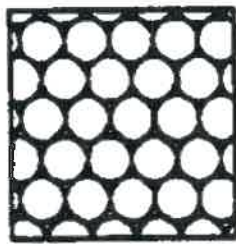
The first few inches of the ground have a large effect on how much, and how fast water infiltrates!

1. **Porosity** - _____

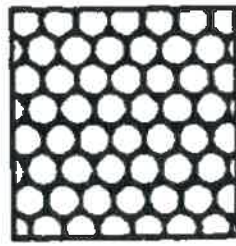
2. **Permeability** - _____

3. **Capillarity** - _____

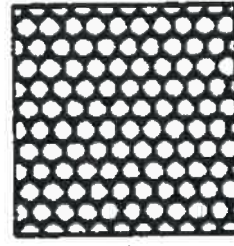
****Sorted – All particles are of similar size and shape**



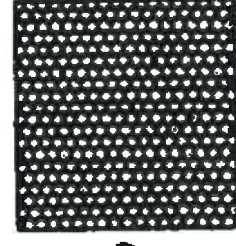
A
(0.9 cm)



B
(0.7 cm)



C
(0.5 cm)



D
(0.3 cm)

All containers have the same? _____

Which container has the greatest permeability? _____

Which container has the greatest capillarity? _____

How Particle Size Affects Infiltration

1). _____ is **NOT** affected by particle size:

Small particles make _____ pore spaces

Big particles make a _____ pore spaces

But the total amount of pore space is about the same in both cases!!!! (about 30%)

2). _____ **IS** affected by particle size:

Water moving through small pores spaces moves slower due to friction, so...

Small particle sizes have lower permeability (clay)

Big particle sizes have higher permeability (gravel)

3). _____ **IS** affected by particle size:

Small pore spaces trap water better due to friction and surface tension, so...

Small particle sizes have higher capillarity (clay)

Big particle sizes have lower capillarity (gravel)

4) _____ sediments (many different particle sizes) affect infiltration:

Small particles _____ in the pore spaces between big particles, so...

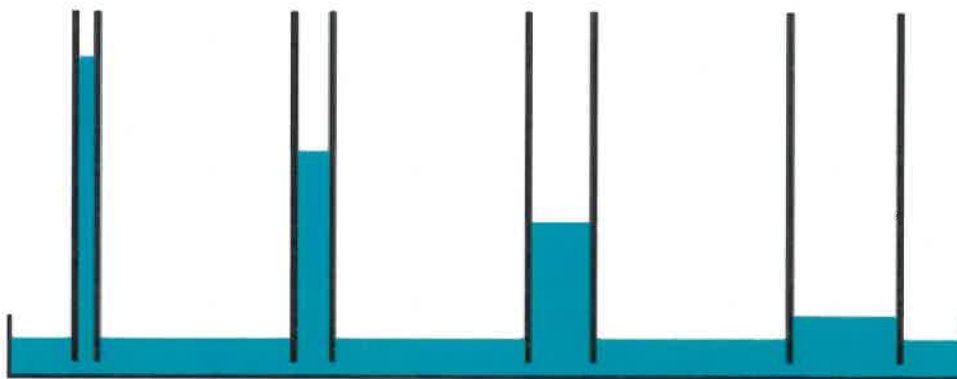
Unsorted soils (like _____) have lower porosity and permeability, but higher capillarity, than sorted soils (like sand)

How Particle Shape Affects Infiltration

5) _____ of particles (rounded or angular) affects infiltration:

Round particles make the _____ pore spaces, so...

Rounded sediments have higher porosity and permeability, but lower capillarity



CAPILLARY ACTION = SMALL PORE SPACES!

