

Define Infiltration:

Define Runoff:

How do plants reduce runoff and thus contribute to increased infiltration?

Lab Station #2

Soil Erosion & Plants - Experiment/ Observations

Record Observations during three different demonstrations and then answer the questions below. Link to [YouTube Video](#)

Demonstration #1 - Precipitation & Soil without Plants

Demonstration #2- Precipitation & Soil with dead leaves/ debris on top

Demonstration #2- Precipitation & Soil with dead leaves/ debris on top

What major difference did you notice to the movement of soil between demonstration 1, 2, & 3?

Lab Station #3 Soil Erosion & Plants - Reduce Impact/ A Way Forward

Read the article *What is a Rain Garden?* & then use the article and observations from the previous demonstration to answer the questions below.

What is a rain garden?

How can something so simple help replenish our aquifers with clean water?

What are some additional benefits to installing a rain garden at your house?

Lab Station #4

Water Tables & Ordinary Wells - Research

Use Chapter 10 vocab sheet and page 263 in your textbook to answer the following questions.

Define Water Table?

Where is the water level in an ordinary well compared to the water table of the supplying aquifer?

Define drawdown?

Define Recharge?

What happens if the water table drops below the reach of the ordinary well?

Lab Station #5

Water Tables & Ordinary Wells - Concepts in Action

Observe the *Lego* version of an ordinary well set among a variety of sediments and answer the questions below.

Do the water table and the water level in the *Lego* ordinary well match? Why?

What kind of Aquifer do ordinary wells use? Circle one

confined aquifer

|

unconfined aquifer

Lab Station #6

Water Tables & Ordinary Wells - Review

Use information from above and page 263 in the textbook to answer the questions below.

What would happen if the withdrawal of groundwater exceeded the aquifer's recharge rate?

In what ways could ordinary well owners reduce their impact on the water-table aquifer that sources their water supply? (Hint: Lab #3)

Define Cone of Depression:

Name 3 types of pollution that can affect groundwater in aquifers. Be sure to include at least one natural pollutant.

Lab Station #7

Infiltration & Sediment Types - Research

Use Chapter 10 vocab sheet and Porosity & Permeability DBQ to answer the questions below.

Define Porosity:

Define Permeability:

How do porosity & permeability factor into infiltration?

Lab Station #8

Infiltration & Sediment Types - Hypothesis

Out of clay, sand, pebbles, and topsoil, which materials are permeable and which, if any, are impermeable to water?

Permeable= _____

Impermeable= _____

If you were to test the permeable substrate above, which would allow for the fastest infiltration? Create an *If... then... because...* hypothesis below.

Lab Station #9

Infiltration & Sediment Types- Experiment/ Analysis

ALL STUDENTS MUST WEAR GOGGLES AT THIS STATION

One student should slowly pour 50 mL of water into each of the three funnels that contain various sediment types. Be sure not to overfill the funnels or water will bypass the filter and potentially ruin your results. Record observations first and then answer the questions below.

Sand (Observations)

Pebbles (Observations)

Topsoil (Observations)

Which sediment allowed for the most/ fastest rate of infiltration?

Which sediment allowed for the least/ slowest rate of infiltration?

What determines the sediment's rate of infiltration? Explain.

Lab Station #10

Try Not to Make a Mess - Feedback

Examine the lava rocks, gravel, sand, & clay (silly putty) and answer the question below.

What was your favorite part of the lab? Why?
