



# JONES VALLEY TEACHING FARM

## AT-HOME ACTIVITIES

### Soil Adventures

9<sup>th</sup> Grade – 12<sup>th</sup> Grade

#### DESCRIPTION and OBJECTIVE:

Have you ever wondered how some plants grow on a sandy beach? Different plants prefer different types of soil texture. We can test our own soil texture to know what plants would grow well or how to improve the soil for planting. All it takes is scooping a soil sample into a jar, shaking it up with water, and letting it settle overnight. After 24 hours, you will clearly see the ratio of silt, sand, and clay that make up your dirt!

#### MATERIALS NEEDED:

- ⇒ 1 clear mason jar with lid
- ⇒ 1 ruler or tape measure
- ⇒ Soil

#### LESSON / ACTIVITY:

##### DAY ONE

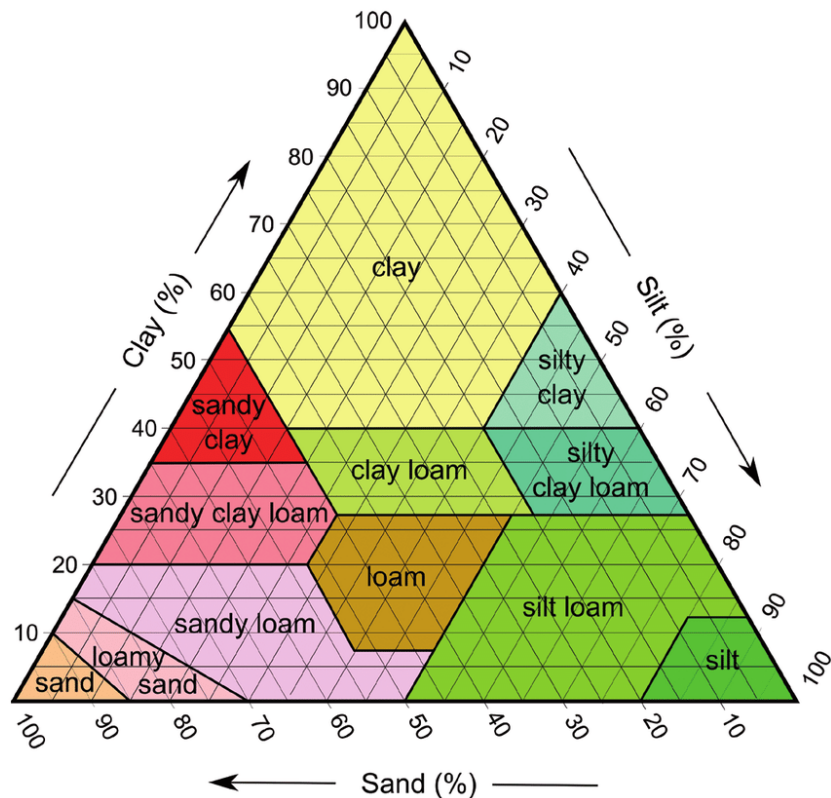
- ⇒ Head outside with your jar and spoon and determine what soil you want to test.
  - Loosen the soil and scoop into your jar, filling halfway and breaking apart any large chunks.
- ⇒ Then, fill the jar with water and close the lid. Shake the jar for 30 seconds, dispersing all of the soil particles within the water.
- ⇒ Place the jar where it can sit undisturbed for 24 hours. As the soil settles, it will separate into visible layers of clay, silt, and sand -- heaviest (sand) at bottom and lightest (clay) at top.
  - Make a prediction: do you think your soil will have more clay, sand, or silt?

##### DAY TWO

- ⇒ Answer the question: does the soil look different now than it did yesterday?
  - You should see distinct layers of soil - sand at the bottom, silt in the middle, and clay on top.



- ⇒ Hold your ruler next to the jar. Measure and record the height of each specific layer of soil and the height of all three layers together.
- ⇒ Using your measurements, calculate what percentage of the soil is clay by dividing the height of clay by the height of all three layers. Be sure to multiply this number by 100 to find the correct percentage. Repeat for silt and sand.
- ⇒ Once you have your calculations (i.e. 40% clay, 30% silt, 30% sand), find the point where those converge on the chart below to identify your soil type!



- ⇒ After you graph your results, complete the following writing prompt: Compare your results to the prediction you made the previous day. Did your results match your prediction? Did anything about your results surprise you?
  - Why do you think the sand particles (largest) fell to the bottom? Why do you think the clay particles (smallest) ended up at the top?
- ⇒ RESEARCH: What plants would grow well in your soil type (i.e. sandy loam, silty clay)? What could you do to improve the soil texture over time?
  - Use [this website](#) (also linked below) to assist you with your research.

### ADDITIONAL INFORMATION:

- ⇒ Check out the links below to learn more about topics related to this activity!
  - [How to Improve Your Soil Structure](#)

