SOIL TEST IN A JAR

NGSS STANDARDS:

K-LS1-1

2-PS1-1

2-PS1-2

EASY EXTENSIONS:

K-ESS2-2

3-5-ETS1-3

MS-LS2-5

Before planting in a new space, this simple soil test will help you figure out the percentages of clay, silt, and sand in your soil, and let you know if you need to make any soil amendments.

1. Grab an empty, clean, straight-sided jar (a mason jar or an almond butter jar works well). Make sure to label it if you're testing more than one location!
2. Fill the jar half full of soil from the garden space you're testing.
3. Fill the rest of the jar with water, but leave enough room for shaking things around.
4. (Optional: add a teaspoon of powdered laundry detergent)
5. Make sure the lid is on tightly; then, shake the jar for 3-5 minutes or more until all the particles are suspended.
6. Wait a full 24 hours.
7. The particles will have settled into three layers: clay on top, silt in the middle, and sand on the bottom. Measure the depth of each layer. If they have not fully settled and the water on top isn't fully clear, wait another 24 hours before measuring.
8. Measure the total depth of all the soil.
9. Divide the depth of each layer by the total depth and multiply by 100 to get the percentage of each type of particle. For example, if the depth of the soil is 3.25 inches and the depth of the clay layer is .33 inches, we would divide .33 by 3.25 and multiply by 100 to determine the clay percentage of 10%.
10. Compare your percentages to the ideal percentages below:

Clay: 20%

Silt: 40%

Sand: 40%

If your percentages aren't within 10% of the ideal, you may want to consider soil amendments.

For sandy soils: add organic matter (aka compost) to the plot

For soils that are mostly clay content: you may want to consider raised-bed or container gardening. Clay-heavy soils require long-term application of organic matter and mulch, and breakdown by earthworms over months or years.