**APES Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**THE SOIL TEXTURAL TRIANGLE PRACTICE NOTES**



**1. Soil Profiles – go to this site APES in A Box: Soil Profiles and take notes on the soil horizons:** [**http://www.youtube.com/watch?v=6Kr3Wj7SeSc**](http://www.youtube.com/watch?v=6Kr3Wj7SeSc)

**2. Soil Triangle and Characteristics—go to this site APES in a Box: Soil Triangle and take notes:** [**http://www.youtube.com/watch?v=VEgHmgnrWzk**](http://www.youtube.com/watch?v=VEgHmgnrWzk)

**3. How to read a Soil Triangle:** [**http://www.youtube.com/watch?v=bAYzoVliNFQ**](http://www.youtube.com/watch?v=bAYzoVliNFQ)

**4. Now it is your turn to use the Soil Texture Triangle.**

**Soil Textural Triangle Practice Exercises**

 **% Sand % Silt % Clay Texture Name**

1. 75 10 15 sandy loam
2. 10 83 7 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) 20 20 70 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Soil Texture Worksheet**

Directions: Using your soil texture chart and example, determine the following soil textures using the percentages given.

 % sand % silt % clay Soil Texture

*example 75 10 15 sandy loam*

1. 42 \_\_\_\_\_ 37 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_ 52 21 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_ 35 50 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 64 30 \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 50 \_\_\_\_\_ 40 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now for a challenge!:

1. 36 \_\_\_\_\_\_ \_\_\_\_\_\_ Clay Loam
2. \_\_\_\_\_ \_\_\_\_\_\_ 42 Silty Clay
3. \_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ Loamy sand
4. \_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ silt loam

Make your own!!

 \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**WHAT IS THE DIFFERENCE BETWEEN SAND, SILT AND CLAY**

**Sand** is a naturally occurring [granular](http://en.wikipedia.org/wiki/Granular) material composed of finely divided [rock](http://en.wikipedia.org/wiki/Rock_%28geology%29) and [mineral](http://en.wikipedia.org/wiki/Mineral) particles. The composition of sand is highly variable, depending on the local rock sources and conditions, but the most common constituent of sand in inland continental settings and non-[tropical](http://en.wikipedia.org/wiki/Tropical) [coastal](http://en.wikipedia.org/wiki/Coastal) settings is [silica](http://en.wikipedia.org/wiki/Silica) (silicon dioxide, or SiO2), usually in the form of [quartz](http://en.wikipedia.org/wiki/Quartz).

The second most common type of sand is [calcium carbonate](http://en.wikipedia.org/wiki/Calcium_carbonate), for example [aragonite](http://en.wikipedia.org/wiki/Aragonite), which has mostly been created, over the past half billion years, by various forms of life, like [coral](http://en.wikipedia.org/wiki/Coral) and [shellfish](http://en.wikipedia.org/wiki/Shellfish). It is, for example, the primary form of sand apparent in areas where reefs have dominated the ecosystem for millions of years like the [Caribbean](http://en.wikipedia.org/wiki/Caribbean).

**Silt** is [granular material](http://en.wikipedia.org/wiki/Granular_material) of a size somewhere between [sand](http://en.wikipedia.org/wiki/Sand) and [clay](http://en.wikipedia.org/wiki/Clay) whose mineral origin is [quartz](http://en.wikipedia.org/wiki/Quartz) and [feldspar](http://en.wikipedia.org/wiki/Feldspar). Silt may occur as a [soil](http://en.wikipedia.org/wiki/Soil) or as suspended [sediment](http://en.wikipedia.org/wiki/Sediment) (also known as suspended load) in a surface [water body](http://en.wikipedia.org/wiki/Water_body). It may also exist as soil deposited at the bottom of a water body. Silt has a moderate specific area with a typically non-sticky, plastic feel. Silt usually has a floury feel when dry, and a slippery feel when wet. Silt can be visually observed with a hand lens.

**Clay minerals** are typically formed over long periods of time by the gradual chemical [weathering](http://en.wikipedia.org/wiki/Weathering) of rocks, usually silicate-bearing, by low concentrations of [carbonic acid](http://en.wikipedia.org/wiki/Carbonic_acid) and other diluted [solvents](http://en.wikipedia.org/wiki/Solvents). These solvents, usually acidic, migrate through the weathering rock after [leaching](http://en.wikipedia.org/wiki/Leaching_%28pedology%29) through upper weathered layers. In addition to the weathering process, some clay minerals are formed by [hydrothermal](http://en.wikipedia.org/wiki/Hydrothermal) activity. Clay deposits may be formed in place as residual deposits in soil, but thick deposits usually are formed as the result of a secondary [sedimentary](http://en.wikipedia.org/wiki/Sedimentary) deposition process after they have been eroded and transported from their original location of formation. Clay deposits are typically associated with very low energy [depositional environments](http://en.wikipedia.org/wiki/Sedimentary_depositional_environment) such as large lakes and marine basins. The distinction between silt and clay varies by discipline. [Geologists](http://en.wikipedia.org/wiki/Geologist) and [soil scientists](http://en.wikipedia.org/wiki/Soil_scientist) usually consider the separation to occur at a particle size of 2 [µm](http://en.wikipedia.org/wiki/Micrometre) (clays being finer than silts), [sedimentologists](http://en.wikipedia.org/wiki/Sedimentologist) often use 4-5 μm, and [colloid](http://en.wikipedia.org/wiki/Colloid) [chemists](http://en.wikipedia.org/wiki/Chemist) use 1 μm.

Primary clays, also known as [kaolins](http://en.wikipedia.org/wiki/Kaolinite), are located at the site of formation. Secondary clay deposits have been moved by [erosion](http://en.wikipedia.org/wiki/Erosion) and water from their primary location

Notes from video!

APES in a Box: Soil Profiles

APES in a Box: Soil Triangle & Characteristics

Sources: Wikipedia

Particle Size: http://www.google.com/imgres?sa=X&biw=1192&bih=491&tbm=isch&tbnid=hV\_K7q5UNXnVnM%3A&imgrefurl=http%3A%2F%2Fwww.meted.ucar.edu%2Fhydro%2Fbasic\_int%2Frunoff%2Fprint.htm&docid=boX84zgM8SdaTM&imgurl=http%3A%2F%2Fwww.meted.ucar.edu%2Fhydro%2Fbasic\_int%2Frunoff%2Fmedia%2Fgraphics%2Finf\_all.jpg&w=497&h=246&ei=MJgCU\_y7LMewyQHflYCYBw&zoom=1&iact=rc&dur=370&page=3&start=26&ndsp=15&ved=0CKsBEK0DMBs

**Particle size:**

http://www.google.com/imgres?sa=X&biw=1192&bih=491&tbm=isch&tbnid=yNvGVYTy\_rx1wM%3A&imgrefurl=http%3A%2F%2Fwww.oshatrain.org%2Fcourses%2Fmods%2F802m3.html&docid=O6vDkhEHLCvEFM&imgurl=http%3A%2F%2Fwww.oshatrain.org%2Fcourses%2Fmods%2F802%2Fclay\_sand\_silt.png&w=392&h=265&ei=MJgCU\_y7LMewyQHflYCYBw&zoom=1&iact=rc&dur=270&page=1&start=0&ndsp=11&ved=0CF0QrQMwAw

Soil Texture Worksheet Key

Directions: Using your soil texture chart and example, determine the following soil textures using the percentages given.

 % sand % silt % clay Soil Texture

example 75 10 15 sandy loam

1. 42 **21** 37 **clay loam**
2. **27** 52 21 **silt loam**
3. **15** 35 50 **clay**
4. 64 30  **6** **sandy loam**
5. 50 **10**  40 **sandy clay**

Make your own!!

 90 9 1 Sand

 20 20 60 Clay

For anyone who is up for a challenge:

1. 36 30 34 Clay Loam
2. 10 48 42 Silty Clay
3. 85 10 5 Loamy sand
4. 30 60 10 silt loam