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| **Section of Project** | **6th Grade Science: Plant + Soil Unit #3** |
| **Title** | *Soil Samples (LAB #1)* |
| **Introduction** | The purpose of this project (Cotton: From Dirt to Shirt) is two fold:   1. To show show the cycle of connectedness from science to economics, through use of Math and Language Arts. 2. To utilize cotton as a catalyst for comparison and discussion in all aspects of this project.   We understand that schools cannot solely devote their time to one crop for their source of material and discussion. We do recognize the importance of comparing crops through specific science units. Cotton is a versatile crop with a dynamic endurance to both natural change and economic change.  The purpose of this project is not to develop “extension lessons”, but rather to help students engage deeper into understanding of content already outlined in the NC Public School Systems. You will note that all of these activities and lessons are meant to partner with lessons you may have already created for your classroom. The best way to read these lessons is thru the lens of the lessons you have already created. How can you take portions, or all of what we have to offer here, and establish it into your lessons already made??  \*NOTE: Anything with the word “LAB” in the title signifies that this activity will take up a large(r) portion of class time than other activities. |

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| **Curriculum Alignment** | * 6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil quality and stewardship. |
| **Learning Outcomes** | Participants will express their understanding of soil layers through observation  Participants will express their observations through writing  Participants will refine their definitions of each soil layer |
| **Time Required and Location** | One 50-minute class period |

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| **Materials Needed** | **FACILITATOR LIST**   * Place cups and spoons out on tables   **PARTICIPANT**   * Small plastic/paper cup OR plastic bag(1/student) * Spoon, preferably metal (1/student) |
| **Safety** | N/A |
| **Participant Prior Knowledge** | As previously discussed, these activities are meant to latch onto what you are already teaching in the classroom. This activity should coincide with your already required section and introduction of soil. |
| **Facilitator Preparations** | Be familiar with all terms (mentioned in “Materials Needed” section) and their definitions.  Locate as dry a spot as possible for soil collection in your area. If you do not have a spot to take students, you will need to collect enough soil for the experiments in the class. You may choose to purchase the soil, or manually gather it yourself from a specified location. |
| **Activities** | *In these lessons, these activities are built as add-ons and expansions of lessons you should already be teaching in your curriculum. We will be expressing the outline of the activity only. Please make certain that the activity you are performing matches the lesson of the unit you are teaching*.  ***THIS FIRST PART ONLY APPLIES IF YOU ARE HAVING STUDENTS COLLECT SOIL SAMPLES***   1. Have students take a spoon and a cup/plastic bag to collect their materials in. 2. Once outside, explain to the students that they need to dig their spoons into the ground approximately 6” deep. 3. Have them collect enough soil to fill up half of their small plastic cup or bag.   ***BEGIN HERE IF STUDENTS DO NOT COLLECT SOIL ON CAMPUS***   1. When back in the class, instruct students that they need to be modest with their samples at each station. Since they have a limited amount, they don’t want to use it all up before visiting each station.   *Station #1: Phosphorous Sampling*  *Station #2: Nitrogen Sampling*  *Station #3: Potash Sampling*  *Station #4: Soil Labeling*  *Station #5: pH Sampling* |
| **Assessment** | 1. Since you are allowing 15-20 minutes to pass in between the setup and the observation, this allocates time for you to go over your lesson and introduce further the concept of sand, silt, and clay. Upon returning to the containers after time has allowed the sediment to settle, you can make an immediate assessment based on student observation and inferencing. |

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| **Critical Vocabulary** | * Sand * Silt * Clay |

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