Student Handout Engagement Phase

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Slake Testing**

As you observe the slake test, complete the “What Do I Notice, What Do I Wonder Table.” Make careful observations of each soil sample.

|  | **What Do I Notice?** | **What Do I Wonder?** |
| --- | --- | --- |
| **Soil Sample 1** |  |  |
| **Soil Sample 2** |  |  |
| **Soil Sample 3** |  |  |

In your small group, share the questions you wrote under “What Do I Wonder?” with your group. Discuss whether the questions are Closed (yes/no questions, have one simple answer) or open-ended (require an explanation), re-write closed questions to be open questions, and then rank your group’s questions in order of importance. Next, you will write your top three questions on sticky notes to post on the driving question board.

Student Handout Explore Phase

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Soil Sample Observation**

You have been provided with a variety of soil samples to analyze. Working methodically, make observations of the soil one layer at a time you may use the various tools provided to help you. For each layer, record what you see as well as what you feel. For each layer, also dampen a small handful and rub it between your fingers; record what you observe.

When you have recorded your observations of the top layer, use the garden trowel to move that layer to the empty box provided for that sample.

**Soil Sample 1**

| Layer | What do you see? | What do you feel? | What happens when you rub a damp sample between your fingers? | Do you have other observations or questions about this layer? |
| --- | --- | --- | --- | --- |
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|  |  |  |  |  |

**Soil Sample 2**

| Layer | What do you see? | What do you feel? | What happens when you rub a damp sample between your fingers? | Do you have other observations or questions about this layer? |
| --- | --- | --- | --- | --- |
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**Soil Sample 3**

| Layer | What do you see? | What do you feel? | What happens when you rub a damp sample between your fingers? | Do you have other observations or questions about this layer? |
| --- | --- | --- | --- | --- |
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Student Handout Explain Phase

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Think back to the Slake Test Demonstration you saw earlier and the Soil Sample Observation activity you completed. Compare the observations you made during the slake test with the observations you made of the soil samples. Answer the following question using the Claim, Evidence, Reasoning Format.

What characteristics of soil impact its behavior in a slake test?

**Claim** (Your claim should be one or two sentences that clearly and simply answer the question.)

**Evidence** (Provide specific evidence from your observations.)

**Reasoning** (Explain why your evidence supports your claim.)

Student Handout Elaborate Phase

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Read the two articles provided and complete the graphic organizer below. Then, you will use the information you collected to create a blog post, letter to a legislature, or video ad arguing either for or against no-till farming.

**No-till Farming, Two Views**

| **Topic:**  **No-till farming** | **Article 1**  **No-Till Farming Not So Great After All** | **Article 2**  **No-Till: How Farmers Are Saving the Soil by Parking Their Plows** |
| --- | --- | --- |
| One-Two Sentence Summary of the Article |  |  |
| Positive or negative words used to support the author’s viewpoint |  |  |
| Facts stated in the article |  |  |
| Facts omitted in the article |  |  |
| Evidence (Provide specific evidence from the text. You may paraphrase or use quotes.) |  |  |
| How hows culture  influenced the author’s perspective? |  |  |
| What is the author’s tone or attitude in the article? |  |  |