Lesson Title	Introduction to the Scientific Method
Length of Lesson	1day
Created By	Claire Babineaux
Subject	Inquiry, Earth and Space Science, Geology
Grade Level	7-8th Grade
State Standards	1.a-h, 4.b
DOK Level	1-4
DOK Application	Illustrate, cause/effect, make observations, summarize, assess, draw conclusions, develop logical argument, investigate, explain phenomena, hypothesize, critique, design, apply concepts, analyze.
National Standards	5-8: G: History and Nature of Science: testing observations using the scientific method.
Graduate Research Element	The scientific method and critical thinking is used in all areas of research, and everyday life, whether we realize it or not. Critical thinking is what helped me to propose a new use for recycled glass.

Student Learning Goal:
The goal of this lesson is to present the scientific method in a manner that the students can understand. This lesson will help the students to understand the process of experimentation and the process all scientists use in order to perform research.

State Standards:
1.a-h: Draw conclusions from scientific investigations including controlled experiments.

4.b: Describe the cause and effect relationship between the composition of and movement within the Earth's lithosphere.

National Standards:
G: History and Nature of Science: testing observations using the scientific method.

Materials Needed (supplies, hand-outs, resources):
Cornstarch, Water, medicine droppers, small cups, paper towels

Lesson Performance Task/Assessment:
The students will demonstrate that they have met the goal of this lesson by being able to discuss/defend their hypotheses and conclusions to their classmates and teacher, as well as complete a quiz on the next lesson day.

Lesson Relevance to Performance Task and Students:
As a result of this lesson, students will be able to: describe the scientific method; identify the steps involved; know the difference between: hypothesis, theory, and law; and understand the importance of retesting. The students will also be able to use the scientific method in their everyday lives.

Anticipatory Set/Capture Interest:
White substance demonstration to promote inquiry and allow students to hypothesize. Please see Teacher's notes for procedure worksheet. The purpose of this demonstration is to expose the students to the scientific method by suggesting that the white substance is a non-Newtonian fluid which mimics the mantle of the earth. The students' job is to determine what it is, and why it has the characteristics it possesses.

Guided Practice:
As the demo is being performed, talk about the scientific method:

1. What is it?
2. What are the steps?
3. Why is it used?
4. What is the importance of re-testing?
    a. Difference between theory, hypothesis, and law.

Independent Practice:
Allow the students to make their own non-Newtonian fluid. (Place a small amount of the white powder in the small white cups and allow the students to add water to it until it reaches the plasticity level wanted.) Allow students to play with it for a few minutes. The students should also fill out the worksheet with their observations.

Remediation and/or Enrichment:
Remediation: Individual IEP
Enrichment: The continuation of the discussion of non-Newtonian Fluids

Check(s) for Understanding:
The students will be able to discuss: the importance of the scientific method, the importance of retesting a hypothesis, when a hypothesis should be retested, etc.

Closure:
A teacher/student led discussion of the scientific method, areas of life in which it is used, and its importance.

1. How would you define a non-Newtonian fluid?
2. Where would you find one?
3. Do you know of any common everyday items that would be classified as a non-Newtonian fluid?

Possible Alternate Subject Integrations:
Earth and Space Science: The white fluid shows characteristics of a non-Newtonian Fluid. The core of the Earth is assumed to exhibit the same characteristics.

Teacher Notes:
The plasticity level wanted is when it comes to the consistency of a solid when held in the fist and a liquid when the fist is released.

Be sure to monitor the students during the independent practice, and have them throw away the small cup/container before leaving the classroom.