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March 1, 2007
Grade Level: 2
Integrated Reading/Science: Dr. Seuss/Ooblek

Subject Integration: Reading, Science

Process Skills: Observing, Predicting, Recording Data, Inferring

Academic Standards:

Science and Technology-

►Physical Science, Chemistry, and Physics-3.4.4- A. Recognize basic concepts about the structure and properties of matter.
*Describe the properties of matter (e.g., hardness). * Know different material characteristics (e.g., state of matter, texture). *know combining two or more substances can make new materials with different properties (e.g. colloid).

►Inquiry and Design- 3.2.4.B. Describe objects in the world using the five senses.
*Recognize observational descriptors from each of the five senses (e.g. see-blue, feel-rough). *Use observations to develop a descriptive vocabulary.

Reading, Writing, Speaking, and Listening-

►Speaking and Listening-1.6.3-B. Listen to a selection (fiction)* Relate it to a similar experience. *Identify new words and concepts 1.6.3-D. Contribute to discussion
*Respond with appropriate information or opinions to questions asked.
►Types of writing-1.4.3-B. Write informational pieces using illustrations when needed.

Materials: Dr. Seuss's *Bartholomew and the ooblek,* **access** to water, two buckets, small containers, mixing utensils, shower liner, lined paper, pencils, paper towels, crayons, observation/investigation sheets, chalk, newspaper, bowls, wet wipes, bell, and sharpie marker
Examples of matter:

*Solids: book, magical wooden wand, bucket, toy
*Liquids: water, fruit drink, hand sanitizer
*Gas: balloon, air filled baggie

Vocabulary:
Solid: A substance that has a fixed shape. A solid does not flow to take the shape of a container.

Liquid: A substance that changes easily and fills the shape of a container. Liquid has a surface boundary.

Gas: A substance that has no fixed shape and expands to fill the shape of its container.

Colloid: A substance that consists of tiny particles of matter that are spread evenly throughout a gas, liquid, or solid.

Objectives:

- Students will be able to identify objects from the three states of matter (solid, liquid, gas) and state their properties.
- Students will observe the movement of Oobleck and be able to orally compare its movement to that of solids and liquids.
- Students will be able to orally describe the ooblek mixture with descriptive words.
- Students will be able to write a description and draw an illustration of the ooblek and present it to the class.

Procedure:

- Anticipatory Set: Activate prior knowledge and as the students whose birthday did Mrs. Chalich celebrate on Friday, March 2, 2007. Discuss Dr. Seuss to the students. Show a selection of books written by Dr. Seuss. Read Dr. Seuss's: *Bartholomew and the ooblek.* Conduct an oral discussion with the students about the story. Ask the students if they have ever been in a situation where they had to say they were sorry. Talk about remorse.
- Talk about the Oobleck in the story. This discussion will include questions such as, "What do you think Oobleck is? A solid? A liquid? Can you think of words that might describe a solid ('hard') or a liquid ('wet')? Can you think of words that might describe 'Oobleck'? Do you think it is sticky, cold, hot, frozen?" Today, we will talk about the states of matter and I will show you some examples and then we will perform a scientific investigation.
- Developmental Activities: Showcase a collection of solids, liquids, and gases for student observation. Display inflated balloons or plastic bags to show matter in its gas form. To remind students that a solid keeps its shape, set one or more examples in a bowl.
- Pose this question to the students: "could there be another type of matter? What about the ooblek in Dr. Seuss's: *Bartholomew and the ooblek* ? What exactly is that green goo? Is it a solid? A liquid? Or ….something new?
- Have the students stand around a table and take turns feeling the cornstarch in the bucket. Write down the words that the students used to describe the cornstarch. Then, have a volunteer help pour the water and mix the substances together. (Cornstarch, Food color, water.)

- Instruct the students that oobleck is not to be eaten or tasted. Tell the students that you will be putting them in cooperative groups of five children per group. The Go-Fer will come and get the supplies and return them in the end. The Secretary /recorder will record the observations on Worksheet #1. The Artist will draw and color a picture of the observation. The Coordinator/recorder will write observations on Worksheet #2. The reader will present the findings in front of the class. All will manipulate the substance to determine if it is a solid, liquid, gas, or …something else. The students will use their sense of touch, smell, hearing, and sight to determine what type of substance oobleck is. [Not taste!]
- I will write down the time limit for Investigation.
- I will write down the jobs on the board (Go-Fer, Artist, Secretary/Recorder, Coordinator/Recorder, Reader,).
- Have the students get into groups and ask the materials manager to get the materials: One container of Oobleck, pencils, crayons, paper and worksheets)
- Tell the students that the Secretary/ Recorder will write on the Investigation Worksheet: The one question that they have about Oobleck all will contribute to the question. There may be more than one question.
- Next have them write the things that they already know about Oobleck.
- Have each student take turns to feel the Oobleck and play with it. I will go around the room and write descriptors on note cards. (To go into pocket chart.)
- Tell the Coordinator/Recorder that he or she will be recording the observations that each group member makes about the Oobleck.
- The students will work in groups for about 10-15 minutes.
- I will have the descriptors on the pocket chart under solid, liquid, and gas from the beginning of the investigation.
- The students will present their findings.
- The Go-Fer will bring the materials up to the front table and the students will clean up.
- Closure: Review the states of matter and the new substance that we learned about today. Have the students write a journal entry about what they learned today, using the adjectives or descriptors that we generated.

Assessment:

- Assess the student's ability to orally generate words to describe the ooblek.
- Assess the student's ability to work in cooperative groups by observation.
- Assess the students understanding of solids, liquids, gas, and colloids by observation.
- Assess the student's journal entry.

Extension/Enrichment:

- Students can make Gloop and compare and contrast it with ooblek using a Venn diagram.
- Students can go to http://www.hbschool.com/activity/states_of_matter/ to further understand states of matter.

- Students can write a description of their favorite food using their senses to describe the states of matter.
- Pass out Dr. Seuss Word find worksheet.

Special Needs Adaptations:

- Have the student with selective mutism draw a picture or come up to point to the best word to that she feels describes the substance
- Have the student with selective mutism work with a higher ability level student.