**OOBLECK**

**Grade:** 2nd

**Duration:** 50 minutes

**National Standards:**

Content Standard A (K-4):

As a result of activities in grades K-4, all students should develop:

* abilities necessary to do scientific inquiry
* Understanding about scientific inquiry

Content Standard B:

As a result of the activities in grades K-4, all students should develop an understand of :

* properties of objects and materials

*PROPERTIES OF OBJECTS AND MATERIALS*

* Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. Those properties can be measured using tools, such as rulers, balances, and thermometers.
* Objects are made of one or more materials, such as paper, wood, and metal. Objects can be described by the properties of the materials from which they are made, and those properties can be used to separate or sort a group of objects or materials.
* Materials can exist in different states--solid, liquid, and gas. Some common materials, such as water, can be changed from one state to another by heating or cooling.

**NCSCoS:**

Competency Goal 3:The learner will observe and conduct investigations to build an understanding of changes in properties.

Objectives

3.01 Identify three states of matter:

* Solid.
* Liquid.
* Gas.

3.04 Show that solids, liquids and gases can be characterized by their properties.

3.05 Investigate and observe how mixtures can be made by combining solids, liquids or gases and how they can be separated again. 3.06 Observe that a new material is made by combining two or more materials with properties different from the original material.

**Lesson Objective:**

1. Student will use his or her vision and touch to observe characteristics of oobleck.
2. Student will use his or her observations to record descriptors of solids and liquids.
3. Student will raise his or her own questions about how to classify the substance as a solid or a liquid.

**Scientific Process:** Students will learn to observe. From these observations, they will learn how to articulate a description. They will draw pictures to represent their observations. They will also question, which will lead to inquiry based learning.

**Resources/Materials:**

Chart paper

Cornstarch

Water

Ziploc Bags

Science Journals (18)

**Lesson Introduction:**

 The first lesson in the Matter unit focuses on engaging children into our study of solids and liquids. By introducing “Oobleck” (a substance that has characteristics of both solids and liquids), the children will explore their understanding of solids and liquids as I determine their prior knowledge. As the children observe and record their own questions about “Oobleck”, they will experience inquiry based science.

 In this lesson, I will introduce solids and liquids as states of matter. Everything is made of matter, and we can observe the characteristics of matter with our senses. Solids have a definite shape, while liquids take the shape of their containers. Students will experience mixing a solid, cornstarch, with a liquid, water. “Oobleck” and our initial observations of solids and liquids will be recurring concepts in the unit. Our observations and questions from the “Oobleck” experiment will be revisited after each lesson. Children will develop enough knowledge to determine that “Oobleck” is both a solid and a liquid.

**Procedures:**

Pre Experiment:

1. With the whole group, I will introduce the new topic by activating students’ prior knowledge of solids and liquids. I will ask them to brainstorm a list of the types of matter. I will record the list on chart (three column notes). We will also discuss the names of the states of matter in Spanish.
2. I will hold up cornstarch asking students, “Where does the cornstarch go on the chart?” (solids). Next, I will hold up the water and ask, “Where does the water go on the chart?” (liquids). Students will make predictions in their Science Journals about what will happen when the two are mixed.

Experiment

1. The teacher will model pouring the cornstarch and the water into the bag, making sure the students know how to pour the water slowly.
2. Students will get with their science partners. They will begin mixing their “Oobleck”. The teacher will circulate guiding children to create questions about what is happening.
3. After giving the students time to mix and explore the properties of “Oobleck,” students will come together for discussion.

Post- Experiment

1. Using a concept map, I will model recording an observation made by one of the students. Then, the students will continue to record their observations of “Oobleck” on a concept map in their Matter Journals.
2. The teacher and I will circulate guiding students through the process of recording their observations.
3. The class will come back together as a whole group. The students will use their observations to make a class concept map. Then, I will ask the children to give me some questions about “Oobleck”. I will probe for questions regarding the classification of “Oobleck” as a solid or a liquid. All of the questions will be revisited later in the unit.

**Assessment or Evidence of Understanding:**

 I will assess students’ knowledge of the characteristics of “Oobleck” by reviewing their concept maps and evaluating their participation in the class discussion. I will be looking to see if the students are able to use vision and touch to record characteristics of “Oobleck”.

**Conclusion:**

To the students:

“Today we examined a new substance called “Oobleck”. We made “Oobleck” from what two types of matter? (a solid and a liquid). What kinds of solids remind you of “Oobleck”? What types of liquids remind you of “Oobleck”? How was your prediction of the mixture the same or different from your observations? We will continue to investigate if Oobleck is a solid or a liquid over the next few days.”