

Name: Krystal Susag

Standard

Matter & Its Interactions:

2-PS1-1 - Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Learning Center Objective: By the end of the lesson students will be able to describe and classify different kinds of materials by their observable properties by rotating through three hands-on learning centers.

Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.

Engage

- **Phenomena:**
https://www.youtube.com/watch?time_continue=1&v=3IW8E1YR0kE
 - We know what matter is and the three states of matter but today we are going to focus on describing and classifying different kinds of materials by their observable properties.
- **Background Knowledge:** Before starting this lesson, the students need to know what matter is and the three states of matter.
- Students should also know the following vocabulary terms:
 - Properties – the characteristic of an object that we can see like color, texture, hardness, flexibility, etc.
 - Magnetic – an object that is attracted to a magnet.
 - Mixture – a substance that is made by mixing two or more different substances together.
 - Hypothesis – educated guess.
 - Flexibility – the ability to bend.
 - Texture – how something feels.

Center 1

- **Challenge:** Identify the different properties of a rock.
- **Materials Needed:** worksheet, glue, rocks, scale, bowl of water, crayons.
- **Learning Documents:** Science Journals
 - Located in Appendix A the students will glue a worksheet into their journal to document their observations and findings.
- **Directions:** The first thing that I want you to do at this center is glue the rock paper onto page 5 of your science journals. Then you will choose a rock from the bucket that you would like to work with. Next, you will do what is presented on the paper you glued into your science journals. First, it asks you to draw a picture of your rock, then decide if your rock is small, medium, or large and circle it. Then there is a scale at the

Name: Krystal Susag

center, and you will place your rock on the scale to see how much it weights and record its weight. Then I want you to describe how your rock feels. Is it hard, soft, smooth, bumpy, cold, rough? Next you will place your rock in the bowl of water and draw a picture of what your rock looks like wet. Lastly, you will circle the color of your rock at the bottom. Once you have filled out the worksheet discuss the properties of your rock with someone else at the center. (The students do not have to do the directions in this order. Although, they must have the worksheet that they glued into their journals completely filled out)

Center 2

- **Challenge:** Identify whether the object is magnetic or not magnetic.
- **Materials Needed:** worksheet, glue, crayon, spoon, coins, screw, scissors, foil, key, pencil, desk, and book.
- **Learning Documents:** Science Journals
 - Located in Appendix B the students will glue the worksheet into the journals to document their observations and findings.
- **Directions:** At this center you will be identifying whether the objects presented are magnetic or not magnetic. First at the center I want you to glue in the paper into page 6 of your science journals. Then go through the objects and identify whether the objects are magnetic or not magnetic just by looking at them. Once you have done that compare your answers to someone beside you. I will then bring you a magnetic wand that you will be able to test the object to see if you were correct or not. If your guess was wrong, I want you to put beside your answer why you choose that option.

Center 3

- **Challenge:** Identify texture, color, hardness and flexibility of various objects.
- **Materials Needed:** Brown paper bags, marble, sand paper, pine cone, fabric, pipe cleaners, play dough, pencil, button.
- **Learning Documents:** Science Journals
 - Located in Appendix C students will glue the worksheet into the science journals to document their observations and findings.
- **Directions:** At this center there will be brown paper bags with items in them. When you first get to this station, I want you to glue the worksheet of onto page 7 of your science journal. So, on each bag there is a number and that number goes with the numbers on the worksheets. At this center you will put your hand into the bag without peaking and describe the texture, hardness and flexibility of the object in that bag by recording them on the sheet of paper you glued into your journals. Then I want you to hypothesis what the object in the bag is, once you have recorded your hypothesis you can take a peek at the object to see if you were right and to find out its color. But it is important that you don't share what is in the bag with those around you so that they can have a chance to guess what is in the bag. Once you have gone through all the bags discuss with a partner what you thought about the properties of the objects in the bag and if your hypothesizes were correct.

Name: Krystal Susag

Wrap-Up Session

- **Challenge:** Can you identify whether the mixture is a solid, liquid, or both?
- **Materials Needed:** Cornstarch, water, plastic plates, zip lock bags, and popsicle stick, food coloring (optional).
- **Learning Documents:** Science Journals
 - Located in Appendix D students will glue the worksheet into their journals to document their observations and findings.

- **Directions:** Students will measure $\frac{1}{2}$ cup of cornstarch into the ziplock bag. Then measure $\frac{1}{4}$ cup of water into the ziplock bag, zip it closed and combine the water and cornstarch by moving the bag around and squeezing the bag. Once it is mixed together go to page 8 in your science journals and glue in this worksheet. Then when you have it glued in start answering the questions.
 - What does the mixture look like?
 - By looking at the mixture do you think it is a solid or liquid?
 - What happens when you squeeze the bag?
 - What happens when you let go of the bag?
 - Describe two ways the mixture could be a solid.
 - Describe two ways the mixture could be a liquid.
- Turn and talk to the person beside you what are you observing about the mixture? Do you think it is a solid or liquid?
- Have a few students share their thoughts and observations.
- Now dump the mixture onto the paper plate and answer the next questions on your paper.
 - What does the mixture feel like?
 - What happens when you stick your finger in the mixture?
 - What happens when you remove your finger from the mixture?
 - Explain the texture of the mixture.
 - Explain the hardness of the mixture.
 - Do you think the mixture is a solid, liquid, or a combination of both?

Big Idea

- **Science Content:** The science content the students will be learning about is classifying object by their observable properties. The students will learn about hardness, flexibility, and texture. The students will learn how to describe objects based on how they feel.
- **Learning Supports:**
- Vocabulary
 - Properties
 - Magnetic
 - Mixture
 - Hypothesis
 - Flexibility

Name: Krystal Susag

- Texture
- Book that supports learning:
 - What's the Matter in Mr. Whiskers' Room

Assessment Plan:

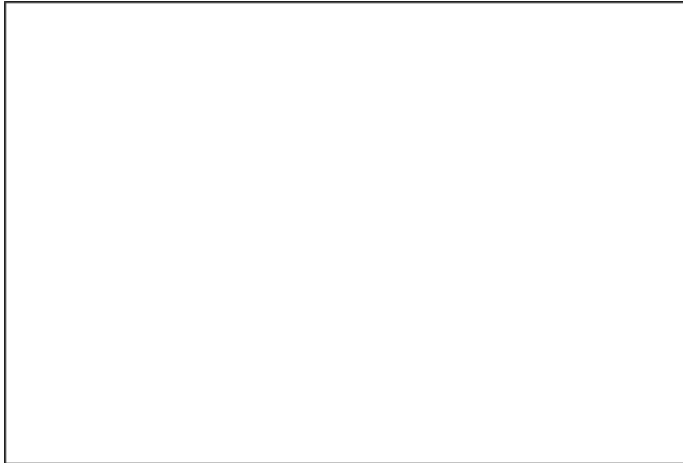
- **Formative:**
 - Students will be assessed based on their hands-on interactions with the materials.
 - Students will be assessed based on their collaborations with other students.
 - Students will be assessed on their science journal entries. They must record all their findings and observations on the worksheets provided.
- **Summative:**
 - Students will be assessed based on the rubric provided on their wrap-up session journal entry. Students will explain the texture, hardness, and flexibility of the mixture
 - Unit exam on Matter and Properties

Name: Krystal Susag

Appendix A

My Rock

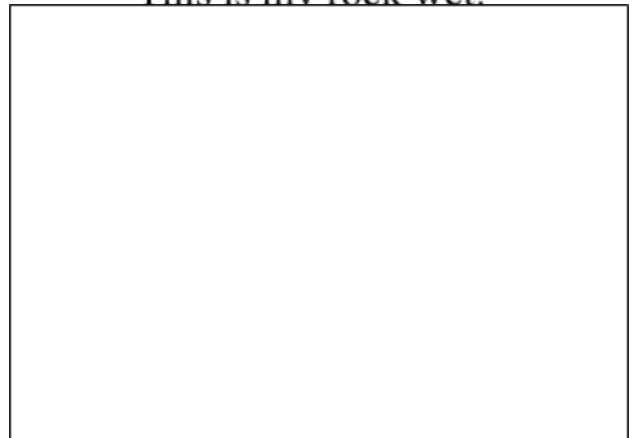
This is my rock.



My rock is:

Small
Medium
Large

This is my rock wet:



My rock weighs _____ ounces.

My rock feels _____

What color is your rock?

White

Brown

Black

Red

Name: Krystal Susag

Appendix B

Objects:	Magnetic	Not Magnetic
Crayon		
Spoon		
Coin		
Screw		
Scissors		
Foil		
Key		
Pencil		
Book		

Name: Krystal Susag

Appendix C

Bag #	<u>Texture</u>	<u>Hardness</u>	<u>Flexibility</u>	<u>Color</u>	<u>Object Guess</u>
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

Name: Krystal Susag

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Appendix D

Directions:

1. Measure $\frac{1}{2}$ cup of cornstarch and pour it into the zip lock bag.
2. Measure $\frac{1}{4}$ cup of water and pour it into the zip lock bag
3. Zip the bag closed and combine the water and cornstarch by moving the bag around and squeezing the bag.

What does the mixture look like?

Looking at the mixture do you think it is a solid or liquid?

What happens when you squeeze the bag?

What happens when you let go of the bag?

Describe two ways the mixture could be a solid.

Describe two ways the mixture could be a liquid.

Name: Krystal Susag

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4. Once it is mixed together go to page 8 in your science journals and glue in this worksheet.
5. Answer the following questions:
6. Dump the mixture onto the paper plate and answer the next questions on your paper.

What does the mixture look like?

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What happens when you stick your finger in the mixture?

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What happens when you remove your finger from the mixture?
--

--

Describe the texture of the mixture.

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Describe the hardness of the mixture.

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Name: Krystal Susag

ou think the mixture is a solid, liquid, or a combination of both?