

Matter.....It Does!

Summary

Students will be able to sort, classify and chart objects by their observable properties. They will learn to identify the three forms of matter and will be able to predict and identify changes in matter.

Materials

Describe Me recording sheet

Big Book: *What is Matter?*

Book: *What Is the World Made Of?* by Kathleen Weidner Zoehfeld

Large chart paper

Markers

Pencils

Masking tape

Describe Me worksheet

Solids, Liquids, Gases recording sheet for each exploration center

Physical Objects: sheet of paper, rock, paper clip, piece of fabric, button, hanger, popsicle stick, bottle of water, perfume, balloon, small rubber ball (inflated with air), wooden block, brick, plastic vase, candy bar, small flag, paper cup, rope, rubber band, rubber duck, pipe cleaners, cinnamon stick or a small bag with cinnamon inside, other spices in small bags (such as cinnamon, marjoram, pepper, salt, garlic powder or garlic salt, cayenne pepper) screws, nails, etc.

Gallon glass jar

8 oz. glass

Paper towels

Dish soap

Water

Oil

Soda

Powdered drink mix

Vinegar

Ice cubes

Small see through dish pan

Marbles

Clear cup

6 eye droppers

Salt

Pepper

Various sizes/shapes containers for liquids

Square plastic dish tub or container for experiments

4 c. glass measuring cup

Transparent rectangular plastic container for sink and float

Small garbage can for disposal

Tin foil

Wax paper

Six envelopes filled with 6 different spices (cinnamon, garlic salt, marjoram, rosemary, pepper, cloves, cayenne pepper)

40 small round balloons

Straws, 1 per participant

Paper cup, 1 per participant

Books:

- *What is Matter?*

From Newbridge. Cost is \$33.50 for Big Book and Instructional Guide. Order code: OWA 825805

- *What is the World Made Of?*

, by Kathleen Weidner Zoefeld, ISBN 978-0-06-445163-5

Media

- *Properties of Matter (Part I)*

, DVD, Educational Media for 1st Grade, 800-483-3383, Item # S14903DV. Website: schoolvideos.com

Background for Teachers

Children learn about the world around them through their senses. In their explorations of physical objects the students will observe, make predictions, and record the information. These activities are carefully guided with instruction to lay a foundation of knowledge of the three kinds of matter and their characteristics in the physical world.

Intended Learning Outcomes

1. Demonstrate a positive learning attitude.
5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal forms.

Instructional Procedures

Content Connections:

By learning about physical characteristics the students will be able to understand and make connections to the weather, water, living/nonliving things, and the seasons.

Invitation to Learn:

Describe Me

In a wholegroup activity, have the students come up and pull an item from a bag. The teacher writes the name of the item and draws the item. The students generate their observations of the item. Ask the students to tell or describe what they know about the item.

Example: An aluminum pie tin properties are: silvery, shiny, round, crinkled, bendable, shaped like a pie, makes a sound when tapped, holds pie filling.

Use a chart to record their comments. The teacher uses the chart paper to make the following chart.

Item Drawing of item	Item Drawing of item	Item Drawing of item	Item Drawing of item
Record properties			

Students will describe and identify properties found in common, everyday items. They will use their knowledge to communicate these ideas.

Items in the bag aluminum pie tin, pencil, feather, sponge. (The teacher can decide on the items in the bag. It is important to provide a variety of items.) Here are few more items to collect for this activity: sheet of paper, rock, paper clip, piece of fabric, button, hanger, popsicle stick, bottle of water, perfume, balloon, small rubber ball, (inflated with air) wooden block, brick, plastic vase, candy bar, small flag, glass jar, paper cup, rope, rubber band, garlic powder in a bag, cinnamon stick or a small bag with cinnamon inside, rubber duck, pipe cleaner, cotton ball, etc.

Day One

After the Invitation to Learn and the class discussion, have the students pair up. Each partner group is given an item from the bag. The students are asked to generate and identify as many

properties as they can for their item. They label the item, draw it, and record their information on the recording sheet (use the Me blackline).

The students share their chart with the class.

Summarize what has been learned and identified as properties.

Check for understanding of what the term "properties" means.

Day Two

Explain that in some ways these items in the bag are all alike. Display the items and ask the students, "Can you figure out how these items are alike even though they have different properties?" There are three properties to discover that each item has in common. In order to help your students discover these new properties, they can ask you twenty questions. (In the game "twenty questions," the students ask questions to figure out what it is you want them to discover. They can only ask yes/no questions. The object of this game is to figure out the discovery before twenty questions have been asked. The teacher keeps a tally of questions asked on the board.)

Depending on the outcome of the twenty questions game, explain that the common properties among the items are (1) they take up space (2) they have weight, and (3) they can be touched or held. Some objects take up more space, and some take up a small amount of space. Some are lightweight and some are heavy.

Everything in the world has these three properties (1) takes up space (2) has weight, and (3) can be touched or held. When an object or item takes up space, has weight and can be touched, it is called matter. Everything is made of matter. Read the poem ["What's the Matter?"](#) (pdf)

Everything in our world is matter. Matter is made up of little parts called molecules. How these molecules are arranged and organized makes items what they are. Matter can be seen and touched. Matter is sometimes very hard and unbreakable; some matter breaks easily, while other matter is drippy, like water, milk, or lemonade. Other matter floats, and some matter cannot be seen.

Read either What Is Matter? or What Is The World Made Of? (to page 8). Have the students listen for the names of the different forms that matter comes in. As you read, stop and talk about the three kinds of matter. Draw the illustrations below on the chart paper so the children understand how the molecules look in each form of matter.

After reading and discussing matter, demonstrate the three kinds of matter by having the students use their hands to model each form. Another idea is to have the children act as molecules and make each form using their bodies.

Day Three through Day Five Exploring the Three Forms of Matter

Review the three forms of matter. Explain how these three forms (states) of matter have different properties.

Today students will be moving around the room to different exploration stations to learn about each kind of matter. The students are to explore, predict, and record their findings through a guided approach from either a parent helper or the teacher. After the children have had the opportunity to explore and predict the physical characteristics of a particular kind of matter, hold a debriefing and clarifying discussion to teach the specific qualities of each kind of matter.

Set up exploration centers with parents' help so that parents can help guide instruction and management. It is suggested to set up one exploration center a day for the students to rotate through. The teacher may decide on how to facilitate this activity. Each student can be given a clipboard, pencil and graphic organizer to record his/her observations of each kind of matter.

Solids Center: At this station have a small pan of water, scale, tape measure, and a hammer. The students use these tools to investigate the characteristics of each item. Suggested items: rocks, small toys, feathers, sponges, sugar cubes, paper, paper clips, metal screws, nails, yarn,

brick, bobby pin, clay, ice, candy, gum, small balls, paper, pencil, crayon, eraser, rubber duck, leaf, cork, metal toy car, etc.

The liquids center has four individual parts to it. They are (1) mixing solids and liquids, (2) sink and float, (3) water displacement, (4) how liquids react to tin foil, paper towel, and wax paper. (The last shows how water repels, absorbs, and dissolves.)

Liquids Center: Have a pitcher of water and different small containers to put the different liquids in.

Straws 1 per participant
Plastic spoons
Dish soap
Vinegar
Water
Oil
Soda
Powdered drink mix
Tin foil
Wax paper
Paper towels
Small seethrough dish pan
20 marbles
20 clear plastic cups
6 eye droppers
Salt
Pepper

Gasses Center:

Blowing up paper bag and popping it
Cup with a crinkled paper inside and pushing it down in a large glass jar or seeing through washtub
Bottle with a balloon on it, warm water, soda and vinegar
Making a wind puller or fan
Straws
20 clear plastic cups
Large glass gallon jar/8 oz. glass
Liquid dish soap
Water
Six envelopes
Spices (cinnamon, garlic salt, marjoram, rosemary, cayenne pepper, cloves)

Define and clarify the characteristics of each kind of matter. Use the following graphic organizer to record and write what the class tells about each form of matter. Record examples of each kind of matter. (Use chart paper to make the graphic organizer.)

Solids	Liquids	Gases
Characteristics:	Characteristics:	Characteristics:
Examples:	Examples:	Examples:

These are the qualities you want the students to understand:

Solids have molecules that are tightly bound together; they keep their shape.

Liquids have molecules that are loosely bound together. Liquids don't keep their shape and can mix with other liquids.

Gases have molecules that float around and do not stay together; they do not have a certain shape and move freely.

Lesson and Activity Time Schedule:

Each lesson is 55 minutes

Each activity is 30 minutes

Total lesson and activity time is 90 minutes

Activity Connected to Lesson:

EXPLORATION CENTERS: See the Instructional Procedures for a detailed explanation of the centers.

Activity Materials:

The materials needed are listed below and are also listed in the Lesson Materials.

Physical Objects: sheet of paper, rock, paper clip, piece of fabric, button, hanger, Popsicle stick, bottle of water, perfume, balloon, small rubber ball, (inflated with air) wooden block, brick, plastic vase, candy bar, small flag, paper cup, rope, rubber band, rubber duck, pipe cleaners, cinnamon stick or a small bag with cinnamon inside, other spices in small bags(such as marjoram, pepper, salt, garlic powder, cloves, cayenne pepper) screws, nails, etc.

Gallon glass jar

8 oz. glass

Paper Towels

Liquid Dish soap

Water

Oil

Baking Soda

Powdered Drink Mix

Extensions

A matter journal can be used to keep information about each student's exploration. Have them record all the ways they use matter during a day. (Example: They wear matter, eat matter, use matter, read matter, sit on matter, ride on matter, sleep and play with matter.)

Make a physical model of each kind of matter using clay or stickers.

Compare and contrast solids that can be broken easily with those that are unbreakable unless heated or bent by a strong force.

Family Connections

1Family Matter GraphHave the student's families record the kinds of matter they eat or smell, for a week. Send home a recording sheet for recording Solids, Liquids and Gas.

Assessment Plan

Observe the students as they are learning about the physical characteristics of objects. Do they have the ability to observe and communicate orally and in written form about their observations? Do they have the ability to synthesize their knowledge and connect it to the qualities found in the various forms of matter? Are they engaged in the process of inquiry and exploration?

Authors

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