

A Matter of Fact

Students are presented with the task of creating a poster that presents basic information about matter. To accomplish this task, students will apply concepts they have learned about matter, characteristic properties, physical and chemical changes, mixtures and pure substances, and atoms.

◆ Expected Outcome

Students' posters should use both words and pictures to present information about matter. Students should define matter and characteristic properties. They should give three examples of characteristic properties, an example of a physical change, and an example of a chemical change. Students should also describe atoms and distinguish between mixtures, pure substances, compounds, and elements.

◆ Content Assessed

This activity assesses students' understanding of basic concepts related to matter.

◆ Skills Assessed

communicating, applying concepts

◆ Materials

- ◆ Provide students with poster board and materials for making posters such as tempera paint, pencils, rulers, colored marking pens or pencils, and paintbrushes.
- ◆ Consider placing the materials in a central location where all students will have access to them.
- ◆ If students will be painting, provide them with small paper cups of water in which to wash their brushes.

◆ Advance Preparation

- ◆ You may want to bring magazines to class so students could cut out pictures to paste on their posters.

◆ Time

45 minutes

◆ Monitoring the Task

- ◆ Encourage students to give examples of the concepts they present. For example, students could use pictures of sugar and water to show pure substances and a picture of a glass of lemonade to show a mixture.
- ◆ As students are planning their posters, suggest that they consider what information they want to communicate with words and what information is better communicated visually.
- ◆ If necessary, provide a place for students to dispose of the water they have used to rinse their paintbrushes.
- ◆ You may want to display the posters in the classroom or in a nearby hallway so that students will have the opportunity to see each other's work.



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In assessing students' performance, use the following rubric.

	4	3	2	1
Communicating	Poster is creative, well-organized, and neat and effectively uses both pictures and words. Student defines matter; gives at least three examples of characteristic properties; gives at least one example of a physical change and of a chemical change; describes the relationships among mixtures, pure substances, compounds, and elements; and defines and describes atoms.	Poster is fairly creative and organized and effectively uses both pictures and words. One of the following is missing: definition of matter; three examples of characteristic properties; examples of a physical change and of a chemical change; relationships among mixtures, pure substances, compounds, and elements; and definition and description of atoms. Poster contains one or two minor errors.	Poster is somewhat organized and uses both pictures and words in a less than effective manner. Two of the following are missing: definition of matter; three examples of characteristic properties; examples of a physical change and of a chemical change; relationships among mixtures, pure substances, compounds, and elements; and definition and description of atoms. Poster contains several minor errors.	Poster is disorganized. More than two of the following are missing: definition of matter; three examples of characteristic properties; examples of a physical change and of a chemical change; relationships among mixtures, pure substances, compounds, and elements; and definition and description of atoms. Poster contains one or more major errors.
Concept Understanding	Student demonstrates a mastery of basic concepts related to matter.	Student demonstrates an adequate understanding of basic concepts related to matter.	Student demonstrates a partial understanding of basic concepts related to matter.	Student demonstrates a minimal understanding of basic concepts related to matter.



PERFORMANCE ASSESSMENT

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The science museum where you work is adding a display about chemistry. You want to make a poster for the display that will help to teach visitors the basics about matter.

◆ Problem

How can you design a poster to teach visitors about matter?

◆ Suggested Materials

poster board
colored marking pens or pencils
ruler
tempera paint
paintbrush

◆ Devise a Plan

1. You want to include the following information on your poster:
 - ◆ a definition of matter
 - ◆ a description of characteristic properties that gives at least three examples
 - ◆ an example of a physical change and a chemical change
 - ◆ an explanation of how matter is classified into mixtures, pure substances, compounds, and elements
 - ◆ a definition and brief description of atoms
2. Decide how you will present the information on your poster. Be sure to use pictures as well as words. Make a quick sketch of your design. Experiment with different layouts of the information to get the most effective display.
3. Lightly sketch your design on the poster board so that you can make changes if you need to. When you are satisfied with your design, complete your poster.

◆ Analyze and Conclude

After following the plan that you devised, answer the questions below on a separate sheet of paper.

1. Describe how your poster teaches museum visitors about matter.
2. What are the most important pieces of information that you want museum visitors to learn from your poster?
3. Was there any information about matter that you weren't able to include on your poster? What was it?

