



CHILDREN'S
MUSEUM
— OF VIRGINIA —
PORTSMOUTH

Pre and Post-Visit Activities

What's the Matter?

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Important Information for Teachers

Thank you for choosing *What's the Matter?* for your students! This program will cover the following aspects of your SOL's:

- 2.3 The student will investigate and understand basic properties of solids, liquids, and gases. Key concepts include
- a) identification of distinguishing characteristics of solids, liquids, and gases;
 - b) measurement of the mass and volume of solids and liquids; and
 - c) changes in phases of matter with the addition or removal of energy.

Museum Manners

Please review with students and chaperones prior to your visit to the museum.

1. Please plan to arrive 15 minutes before your scheduled time to allow final counts and payment prior to your visit.
2. Remember to use walking feet.
3. Remember to use inside voices.
4. Teachers and chaperones must stay and explore with their students at all times throughout the museum.
5. Remember to share the exhibits and place items back where you found them.
6. Food and drink are not permitted in the museum.

Vocabulary

Condensation- to be changed from a gas to a liquid (by cooling/loss of heat).

Evaporation- to be changed from a liquid to a gas by adding heat or energy.

Freeze- to be changed from a liquid to a solid by loss of heat.

Gas- will completely fill any closed container (take the shape of its container) and assume the volume of its container because the molecules are constantly moving.

Liquid- has a definite volume and takes the shape of the container.

Mass- a measure of the amount of matter.

Matter- anything that has mass and takes up space.

Melt- to be changed from a solid to a liquid especially by the application of heat.

Phase- a state of matter, usually solid, liquid, or gas.

Physical Change- when matter changes from one phase to another.

Solid- has a defined shape and volume and slow-moving, tightly compacted molecules.

Volume- the measure of the amount of space occupied by matter.

Weight- the measure of the gravitational pull of an object.

Pre-Visit Activity

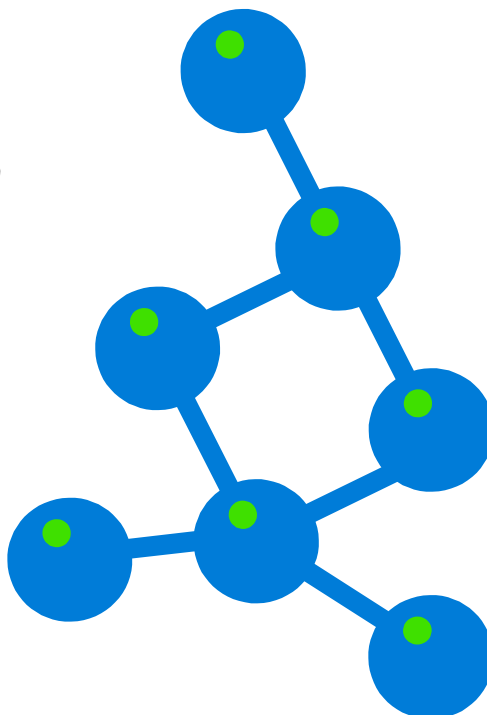
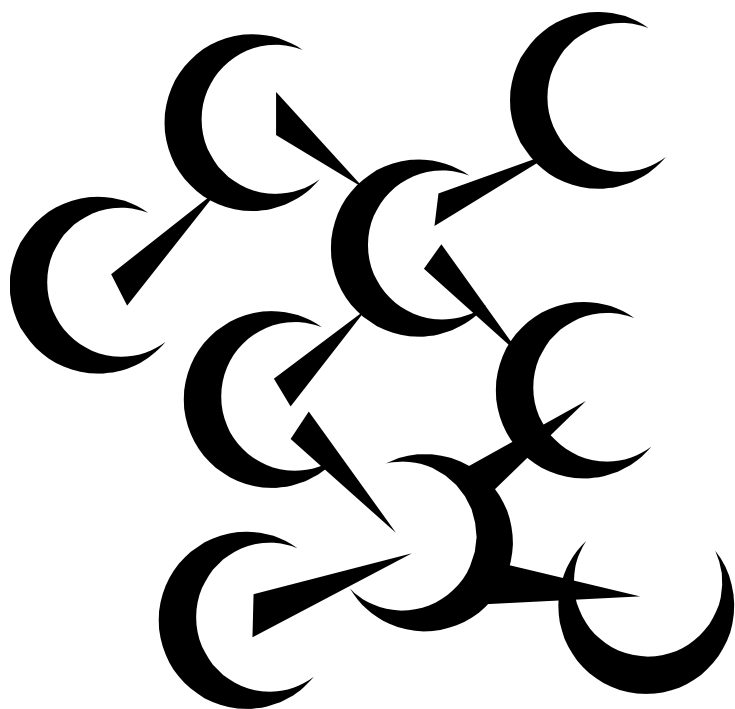
Try this activity before you visit the museum.

Observe the states of matter:

Objective: The students will be able to classify the states of matter in the environment surrounding them. Meets SOL's 2.3 a, b, c.

Materials: Investigation tools such as magnifying glasses, pencil and paper, time to observe surroundings, especially outdoors if possible.

Investigation: Students will observe matter in their environment. Encourage students to look for matter in classrooms, lunch rooms, at home and outside. Once different types have been observed, students will classify the matter and predict whether or not they can change states.



Post Visit Activity

Try this activity after you visit the museum.

Water, Water, Everywhere

Objective: conduct an investigation to observe the condensation of water.

Meets SOL 2.3c

Materials: Plastic cups, ice, water, pencils and paper. One cup should be filled with water and then frozen beforehand.

Investigation: Place 4 plastic cups next to each other on top of a paper towel. Explain that one will be filled with room temperature water, one with ice water, one with cool water and one with a solid block of ice. Have the students predict where condensation will form on the cups (inside or outside) and how much condensation will accumulate. Fill the cups. Have students record which cup has the most condensation after five minutes and again after ten minutes.

How Do Solids and Liquids Measure Up?

Objective: measure the mass of solids and the volume of liquids in metric and Standard English units. Meets SOL 2.3b

Materials: Balance scales, objects of varying mass, paperclips, graduated cylinders and measuring cups, water or another liquid, paper and pencil.

Investigation: Measure $\frac{1}{4}$ cup of liquid into the measuring cup. Write down the measurement of water in the Standard English measurement, Fluid Ounces (fl oz). Transfer the water to the graduated cylinder. Measure the amount of liquid in the metric unit, milliliter (ml). Write down your findings. Repeat for $\frac{1}{2}$ cup of liquid, if desired.

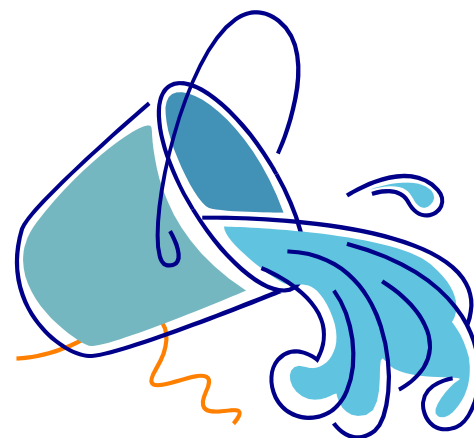
One paper clip weighs about one gram. Use the scales to measure the mass of other objects by comparing the number of paper clips needed to balance the scales. If 5 paper clips are required to balance the weight of a pencil, the pencil's mass is 5 grams.

Review Vocabulary

Objective: Students will be able to review and understand the key terms used in the program and by the Virginia Standards of Learning.

Materials: Word Search on following page and pencils.

Investigation/Practice: Students will review the terms in the puzzle and write the definitions of the terms as they find them.



2nd GRADE MATTER

Name: _____

Date: _____

C O N D E N S A T I O N E D T O C I
 K E J T J K D M W T R I V Y H J P H
 O K D Q M O P P M K I N A X H Q T R
 D N A K A I E H K I Y I P F J W T M
 N P H A S E S Y R D K K O G J C F S
 B H A X S X F S Q F F S R D P T Y N
 S P T M R C M I K T H L A A A O V O
 M A E B S X A C B J Y S T N I R Q G
 U X V H C I O A K D B J I U K I C K
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 F R E E Z E W G U T Q E P X X G K W
 R Y W Y J F A E M E U L L S X O M T
 Y V W C C I G L E R I T H F K C E L
 Q O W R Z B J U T P D T G Q S K J A

CONDENSATION

MATTER

WEIGHT

EVAPORATION

MELT

FREEZE

PHASE

GAS

PHYSICAL CHANGE

LIQUID

SOLID

MASS

VOLUME