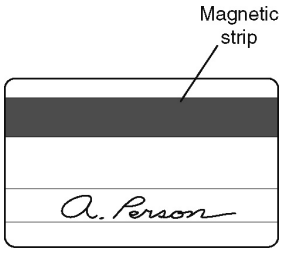
Name _____ Date _____

Matter and Its Properties

Unit Benchmark Test

1 Smith Elementary installs a new system for students to use to buy their school lunches. Each student receives a card like the one shown below.



Which claim must be true about the material in the card reader at the lunch counter?

Ⓐ The card reader has plastic inside that reads the magnetic strip.
Ⓑ The card reader has wood inside that reads the magnetic strip.
Ⓒ The card reader has glass inside that reads the magnetic strip.
Ⓓ The card reader has material with iron or steel that reads the magnetic strip.

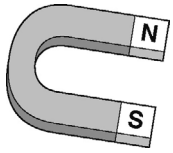
SC.4.P.8.4, SC.4.N.1.4

2 Cora observes some items in her science kit. When she moves a stone, a paper clip in the kit moves toward the stone. Which type of force causes the paper clip to move toward the stone?

Ⓕ a magnetic force attracting metal
Ⓖ the sun lighting items near Earth
Ⓗ friction acting on objects that are moving
Ⓘ a magnetic force causing like poles to repel

SC.4.P.8.4, SC.4.N.1.4

3 Look at the image of the magnet below.



What are the ends of a magnet called?

Ⓐ bars
Ⓑ fields
Ⓒ motors
Ⓓ poles

SC.4.P.8.4

4 Bar magnets and electromagnets have similarities and differences. Which of these correctly describes one difference between bar magnets and electromagnets?

Ⓕ Bar magnets have a magnetic field, but electromagnets do not.
Ⓖ Electromagnets are temporary, but bar magnets are permanent.
Ⓗ Electromagnets have two poles, but bar magnets have only one pole.
Ⓘ Bar magnets have two poles, but electromagnets have only one pole.

SC.4.P.8.4

5 A magnet and a paper clip are on a desk. What distance between the magnet and the paper clip would result in the strongest magnetic attraction?

Ⓐ 2 cm
Ⓑ 4 cm
Ⓒ 7 cm
Ⓓ 9 cm

SC.4.P.8.4

6 Sydney's grandfather has a pacemaker in his chest to help keep his heart beating regularly. He is supposed to avoid magnetic fields that might interfere with the way his pacemaker works. Which of the following should he be careful to avoid?

- (F) watching TV
- (G) being near a large electric motor
- (H) using an electric blanket
- (I) talking on his household phone, which is not a cell phone

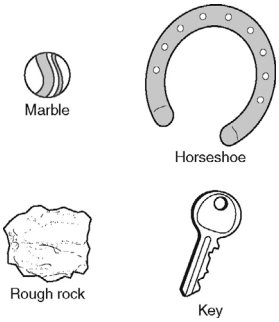
SC.4.P.8.4

7 On a camping trip, Bryan notices that the needle of a compass always points north to south. What reasoning explains why this happens?

- (A) The needle points toward colder places.
- (B) Gravity makes the needle point this way.
- (C) The sun makes the needle point this way.
- (D) Earth has a magnetic field, and the needle is magnetic.

SC.4.P.8.4

8 Cara places a group of objects on her desk. She wants to describe the objects in terms of a single property.



Which physical property is similar for all of these objects?

- (F) shape
- (G) texture
- (H) hardness
- (I) attraction to magnets

SC.4.P.8.1

9 Mariano wants to measure the volume of a 2-cm cube. What are two instruments that he could use to find the volume of the cube?

- (A) ruler and spring scale
- (B) pan balance and ruler
- (C) ruler and graduated cylinder
- (D) graduated cylinder and spring scale

SC.4.P.8.1

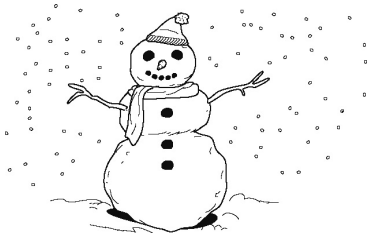
10 Dale has a comic book, a notebook, a writing pad, and a CD. Which of these items would **not** belong in the group if Dale classifies them by the physical property of shape?

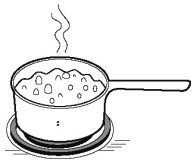
- (F) CD
- (G) comic book
- (H) notebook
- (I) writing pad

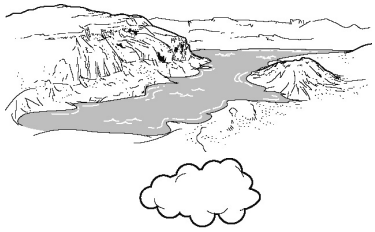
SC.4.P.8.1

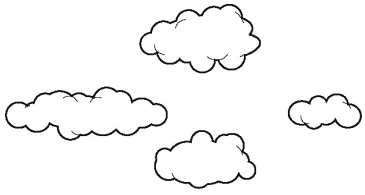
Name _____ Date _____

11 The three states of matter are solid, liquid, and gas. Which is an example of water as a solid?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

SC.4.P.8.2

12 Water changes states when energy is added or taken away. Which claim describes what happens to liquid water when energy is added?

Ⓕ It melts into a gas.
Ⓖ It freezes into a solid.
Ⓗ It evaporates into a gas.
Ⓘ It condenses into a solid.

SC.4.P.8.2

13 Water is found as a liquid, solid, or gas. What happens when water changes from a gas to a liquid?

Ⓐ It melts.
Ⓑ It freezes.
Ⓒ It condenses.
Ⓓ It evaporates.

SC.4.P.8.2

14 Isamar changed water from a liquid to a gas. What did Isamar do to the water?

Ⓕ She froze the water.
Ⓖ She melted the water.
Ⓗ She added energy to the water.
Ⓘ She removed energy from the water.

SC.4.P.8.2

15 Water is found in all three states of matter. Which shows the change of state involved when water freezes?

Ⓐ changes from a solid into a gas
Ⓑ changes from a gas into a liquid
Ⓒ changes from a solid into to a liquid
Ⓓ changes from a liquid into a solid

SC.4.P.8.2

16 The table shows some properties of water in different states.

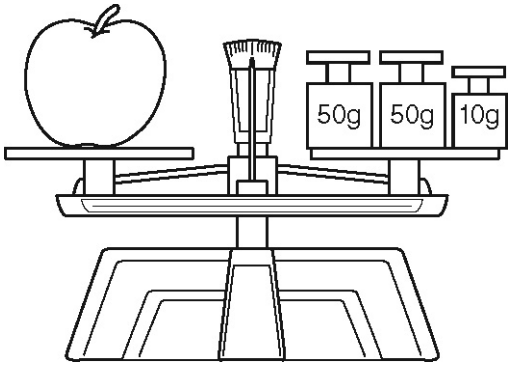
Solid	Liquid	Gas
Feels cold	?	has no definite shape

Which property should be put into the second column?

Ⓕ feels dry
Ⓖ tastes sour
Ⓗ has strong odor
Ⓘ fits the shape of its container

SC.4.P.8.2

17 A pan balance is used to measure a physical property of objects. The illustration below shows the measurement of the property of an apple.



What property does the pan balance measure?

(A) length
(B) mass
(C) shape
(D) volume

SC.4.P.8.1

18 An artist is creating a special piece of art using fabric. It will be placed inside a box. To experience the art, visitors will place their hands into holes in the box and touch the art without being able to see it. What would be the **most** important characteristic to consider when choosing the fabric for the art piece?

(F) odor
(G) length
(H) mass
(I) texture

SC.4.N.1.1

19 Riley makes three balls out of modeling clay. He puts all of the clay balls on a balance and measures the total mass as 56 g. He then pushes the clay into one big ball and measures its mass. Which of the following would be a reasonable mass for the entire ball?

(A) 53 g
(B) 55 g
(C) 56 g
(D) 59 g

SC.4.P.8.3

20 Chang uses a balance to measure the mass of a toy truck. He records the mass in the table below. He then takes the truck apart and places all the parts on the balance.

	Mass
Whole truck	92 grams
Truck taken apart	?

What will Chang **most likely** record on his chart as the mass of the truck's parts?

(F) 86 g
(G) 88 g
(H) 92 g
(I) 98 g

SC.4.P.8.3