

- PS3.1a** Matter takes up space and has mass. Two objects cannot occupy the same place at the same time.
- PS3.1b** Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses.
- PS3.1c** Objects have properties that can be observed, described, and/or measured.
- PS3.1d** Measurements can be made with standard metric units and nonstandard units.
- PS3.1e** The material(s) an object is made up of determine some specific properties of the object (sink/float, conductivity, magnetism). Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets, circuit testers, and graduated cylinders.

You can understand that matter has physical properties.

Mass is the amount of matter in an object.

A **magnet** attracts objects that contain iron.

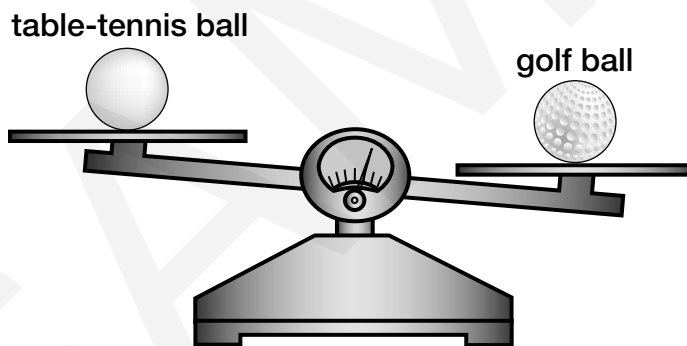
The five **senses** are sight, hearing, smell, taste, and touch.

Guided Instruction

DIRECTIONS Read the following information.

Everything around you is matter. **Mass** is the amount of matter in an object. You cannot tell the mass of an object by looking at it. You can find its mass by using a balance. In science, mass is often measured in units called grams.

Balances are used in science to measure and compare the masses of many things. Objects that are



the same size can have different masses. Look at a table-tennis ball and a golf ball. Which one has more mass than the other? You can observe this by looking at the balance in the picture. The table-tennis ball is on the left and the golf ball is on the right.

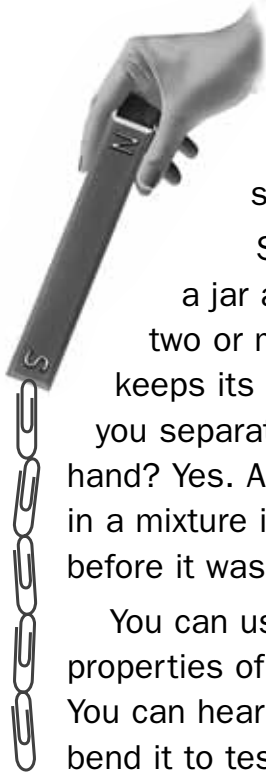
Magnets have a special kind of property. A **magnet** attracts objects that contain iron. You can measure the strength of magnets. Here is one way. Get several magnets and a box of paper clips. See how many paper clips each magnet picks up by putting the

Guided Questions

Which tool measures **mass**?

How do you know which ball has more mass?

What kinds of objects do **magnets** attract?



paper clips in a row touching each other. Place a magnet at the end of the row, and lift the magnet up. The more paper clips a magnet picks up, the stronger the magnet.

Suppose you put gravel and small tacks in a jar and shake it. Whenever you put together two or more kinds of matter and the matter keeps its properties, you create a mixture. Can you separate the gravel and small tacks in the jar by hand? Yes. All you need is a magnet. After the matter in a mixture is separated, it is the same as it was before it was mixed. No new matter is formed.

You can use your **senses** to learn about the properties of matter. You can see an object's color. You can hear its sound. You can scratch it, touch it, or bend it to test its hardness, temperature, or stiffness. You can smell its odor. You can even taste some objects. Your own observations tell you a lot about the properties of matter.

Guided Questions

What do we call two or more kinds of matter that have been combined and can later be separated?

DIRECTIONS For each question, write your answer in the spaces provided.

1. Which of these has more mass: a beach ball or a baseball?

2. What do you use to find out about the properties of matter?

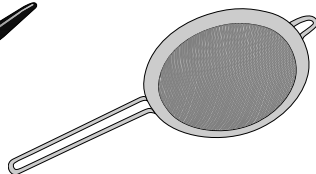
3. You place a paper clip on one side of a pan balance. Then you place a pencil on the other side. What is likely to happen? Which is likely to have more mass?



DIRECTIONS Study the drawings, read the paragraph, and answer the questions.



Spoon



Sieve



Magnet



Cloth



Tongs



Hands

Mixtures of matter can be separated, based on their properties. Look at the objects. Think how you can use each item to separate matter. Then complete the chart below.

Separating Matter in a Mixture

What to Do	How to Do It
1. Remove small nails from sand in a sandbox.	
2. Separate the letters in alphabet cereal.	
3. Remove peas from vegetable soup.	
4. Remove seeds from orange juice.	
5. Remove lettuce from a salad.	
6. Remove sand from a pail of water.	

7. Describe three properties of a pencil. Then list the sense you used to describe each property.


**NYS Test
Practice**

DIRECTIONS Choose the best answer for each question.
Then circle the letter of the answer you have chosen.

1 Which tool measures mass?

- A beaker
- B thermometer
- C balance
- D magnet

2 Which can be attracted to a magnet?

- A a plastic button
- B an eraser
- C a marble
- D a paper clip

3 You can find out how hard an object is by trying to

- A move it with a magnet
- B scratch it or bend it
- C melt it or freeze it
- D lift it or squeeze it

4 Which sense would you probably not use to observe a fruit tree?

- A smell
- B touch
- C hearing
- D taste

5 Study the chart below.

Kind of Magnet	Number of Paper Clips
Large bar magnet	25
Small horseshoe magnet	16
Large horseshoe magnet	31
Small bar magnet	22

Which sentence about the information in this chart is true?

- A The bar magnets are the strongest.
- B The horseshoe magnets are the strongest.
- C The largest magnets are the strongest.
- D Size has nothing to do with the strength of magnets.