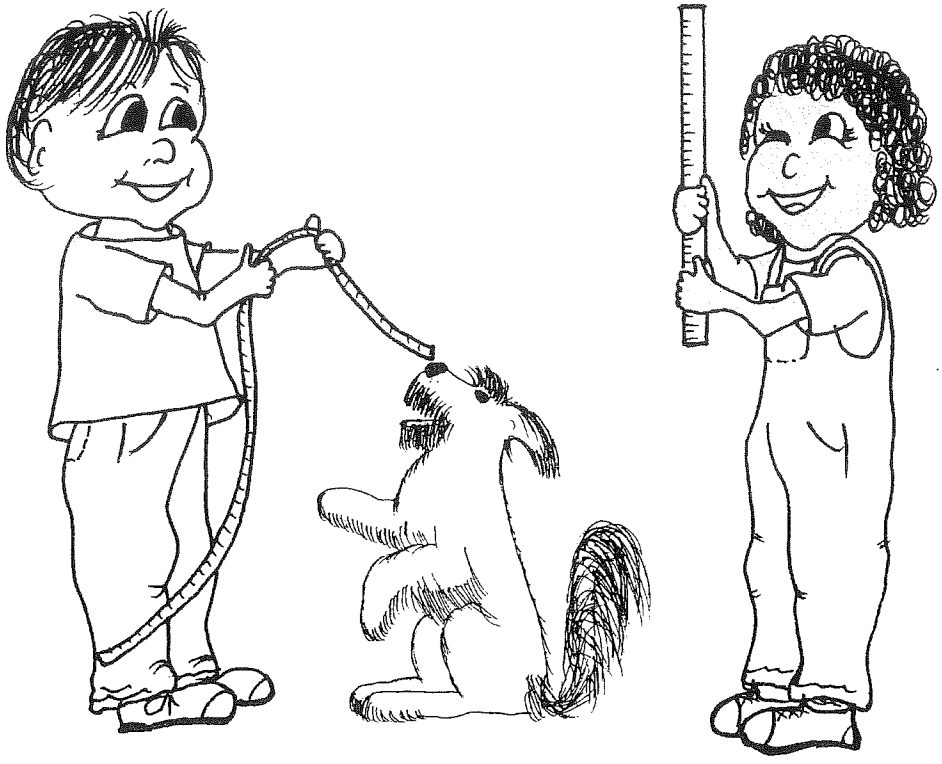
BATTLE CREEK AREA
Mathematics & Science Center

Student Journal

2PS

Measuring Matters



A Second Grade Unit
supporting the
Michigan Science K-7 Content Expectations

Name: _____

Name _____

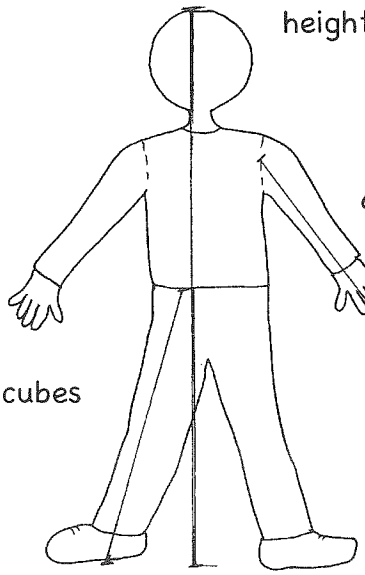
Date _____

ACTIVITY

Measuring Me!

1

1. Record the length of the different parts of your body.



height _____ cubes

arm _____ cubes

leg _____ cubes

2. Write and record at least three other parts of your body you chose to measure.

Body Part	Cubes	Centimeters
arm		
leg		
height		

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JOURNAL

Measuring Me!

Name _____

Date _____

1

1. Choose the **BEST** measuring tool to measure the height of a person.

   a. ruler

   b. measuring tape

   c. measuring cup

   d. stop watch

2. Write a sentence that explains what you can learn by using the measuring tool.

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Name _____

Date _____

ACTIVITY

Tape Measure Hunt

2

You are going on a Measuring Scavenger Hunt. Find one object in the classroom that measures the following lengths.

Length of Object	Name of Object You Found
25 centimeters	
1 centimeter	
30 centimeters	
6 inches	
9 inches	
2 inches	

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JOURNAL

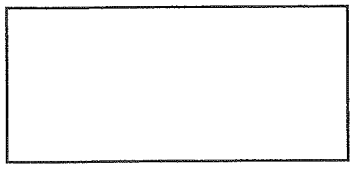
Tape Measure Hunt (cont.)

Name _____

Date _____

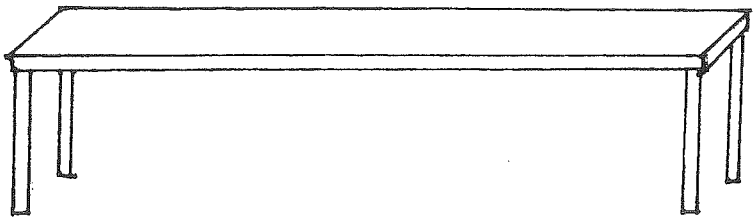
2

1. Measure the length of objects using the centimeter scale on the metric ruler.



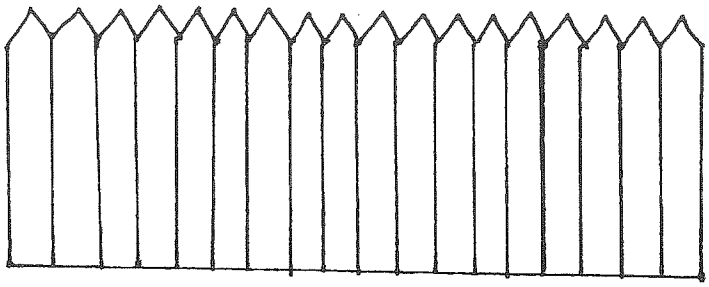
rectangle

_____ cm



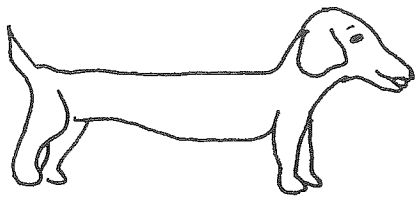
table

_____ cm



fence

_____ cm



dog

_____ cm

2. Circle the objects that are the same length. Explain how you know when objects are the same length.

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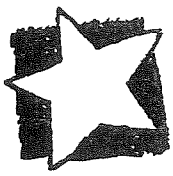
Name _____

Date _____

ACTIVITY

How Far Will It Roll?



3

First, predict which objects will roll down the ramp and which objects will slide down the ramp.

Then test your objects and record your results.

Object	Predict if the object will <u>roll</u> or <u>slide</u>	Write if the object <u>rolled</u> or <u>slid</u>	Distance	Time

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J O U R N A L

How Far Will It Roll? (cont.)

Name _____

Date _____

3

1. Draw and label a picture of how you tested your objects using the distance the object traveled.

2. Draw and label a picture of how you tested your objects using the time it took the object to travel to the finish line.

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Name _____

Date _____

3. Using your data as evidence, write a conclusion that explains which object traveled the farthest down the ramp. (Include the numbers from your data in your answer.)

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ACTIVITY

High Flying

Name _____

Date _____

4

Using the data from the test flights of your paper airplane, construct a chart to organize your data.

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Name _____

Date _____

JOURNAL

High Flying (cont.)

4

Using your data, write about your experience with the distance traveled of your paper airplanes. Describe any changes you made in your design that worked or did not work.

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ACTIVITY

Hunting For Shapes

Name _____

Date _____

5

Width

Length

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Name _____

ACTIVITY 5

Hunting For Shapes (cont.)

1. How many squares are in the width? Estimate _____

   Actual _____

   Record the width in centimeters. _____

2. How many squares are in the length? Estimate _____

   Actual _____

   Record the length in centimeters. _____

3. How many squares are in the area? Estimate _____

   Actual _____

   How many centimeters in all? _____

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ACTIVITY

Hunting For Shapes (cont.)

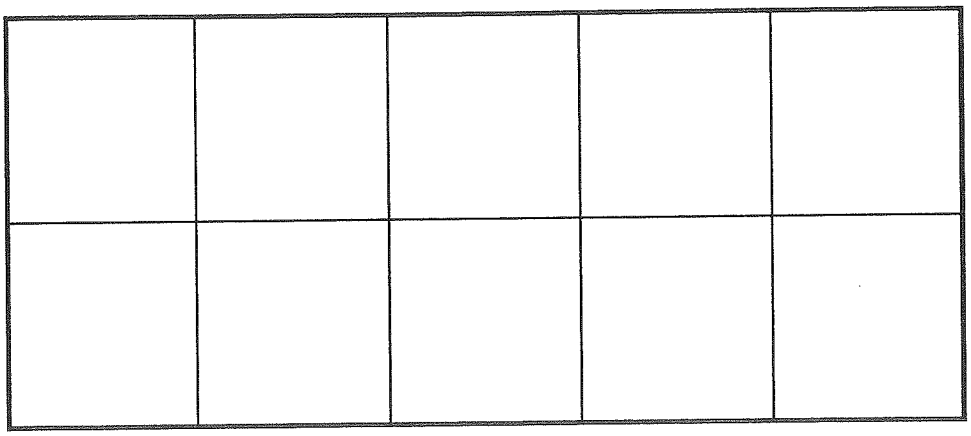
Name _____

Date _____

5

Length

Width



4. How many squares long is this rectangle?

5. How many squares wide is this rectangle?

6. How many squares cover the area of this rectangle?

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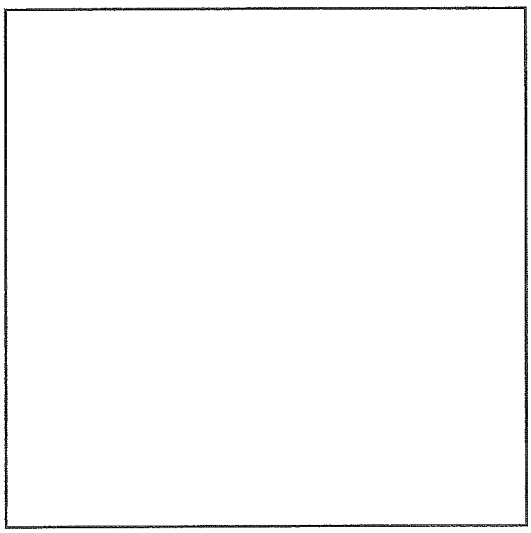
Name _____

Date _____

Length



Width

1. How many centimeters long is this rectangle?

2. How many centimeters wide is this rectangle?

3. What can you say about the length and width of the rectangle?

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ACTIVITY

How Many Spoons of Water in a Cup?

Name _____

Date _____

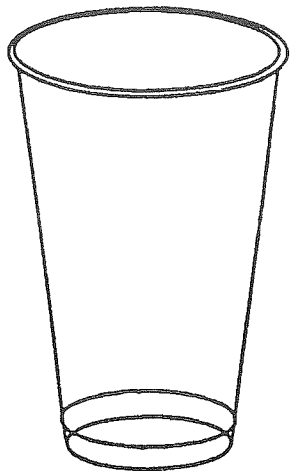
6

1. Estimate the number of tablespoons it will take to fill the cup.

Estimate: _____

2. Record the number of tablespoons using tally marks on the chart below.

Trial 1	
Trial 2	



3. Record the actual number of tablespoons it took to fill the cup.

Trial 1 Actual: _____

Trial 2 Actual: _____

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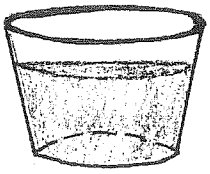
Name _____

Date _____

How Many Spoons of Water in a Cup? (cont.)

1. Circle the picture that shows the cup that is filled to capacity.

Cup A



Cup B

Cup C

Cup D

2. Look at the different cups. Write how you would be able to tell if they held the same amount of water.

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ACTIVITY

Measuring and Mixing

Name _____

Date _____

7

1. Complete the Cornstarch and Water Observation Charts.

Observations: Cornstarch

sight	
smell	
feel	

Observations: Water

sight	
smell	
feel	

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Name _____

Date _____

2. Mix cornstarch and water and observe what happens. Complete the procedure by filling in the amount of cornstarch and water you chose to mix.

I mixed _____ tablespoons cornstarch with _____ tablespoons of water, then stirred the mixture with the spoon.

3. Draw and write what you observed.

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JOURNAL

Measuring and Mixing

Name _____

Date _____

7

1. Describe the steps in the procedure that you used to make "slime." (Use connecting words, such as *first, second, next,* and *then* to write your procedure.)

2. What do you think would happen if you repeated the procedure?

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Name _____

Date _____

Measuring and Mixing (cont.)

3. Write what you think would happen if you changed the volumes in the procedure.

4. Describe the properties of your "slime."

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ACTIVITY

Which Container Holds the Most?

Name _____

Date _____

8

Help Frank and Rosie decide which container has the most candy.

1. List the measuring tools you will use.

2. Write the question you are investigating.

3. Write the plan you will follow to find out.

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Name _____

Date _____

Which Container Holds the Most? (cont.)

4. Make a chart to show your results.

5. Write a statement that explains which container holds the most candy. Use the data from your chart in your statement.

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JOURNAL

Which Container Holds the Most? (cont.)

Name _____

Date _____

8

Using your data from the popcorn kernel and water investigations, write what you have learned about the amount of solid or liquid in a container. Use the terms *solid, liquid,* and *volume* in your answer.

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Name _____

Date _____

ACTIVITY 9

A Balancing Act

1. Use the balance to rank the items from lightest to heaviest. Record your results.

lightest _____

_____

_____

_____

heaviest _____

2. Draw and label a picture of the balance that compares the lightest object with the heaviest object.

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ACTIVITY

A Balancing Act (cont.)

Name _____

Date _____

9

1. Measure the mass of each object in the bag in grams using the gram cubes. Record your data in the chart below.

Object	Mass in Grams

2. Using your data, write which object was the lightest and which object was the heaviest. Explain how you know.

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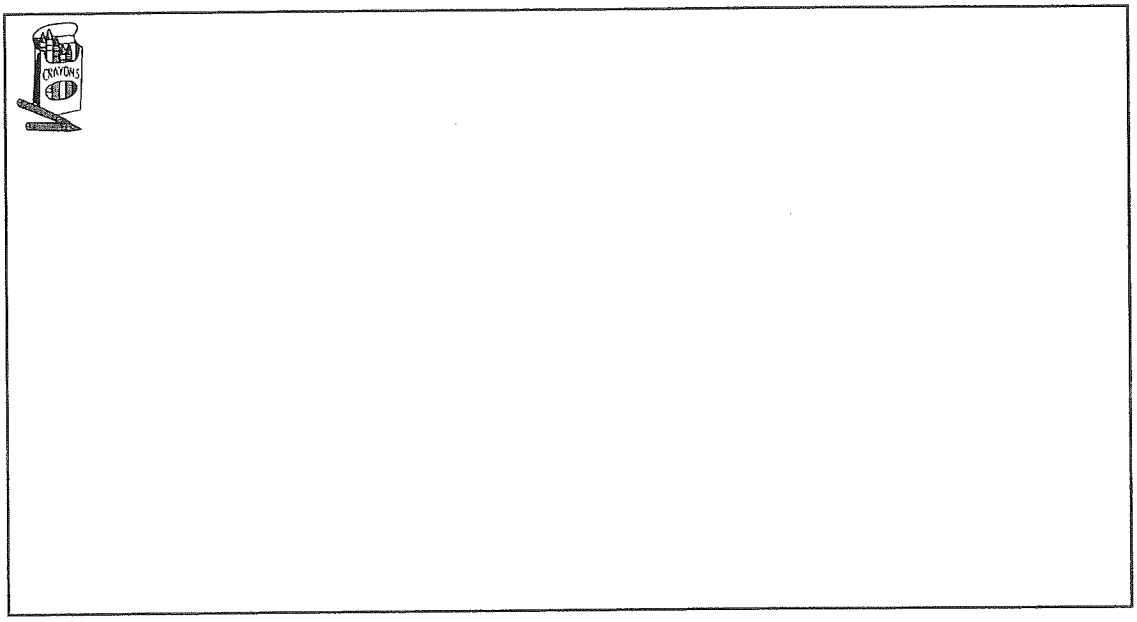
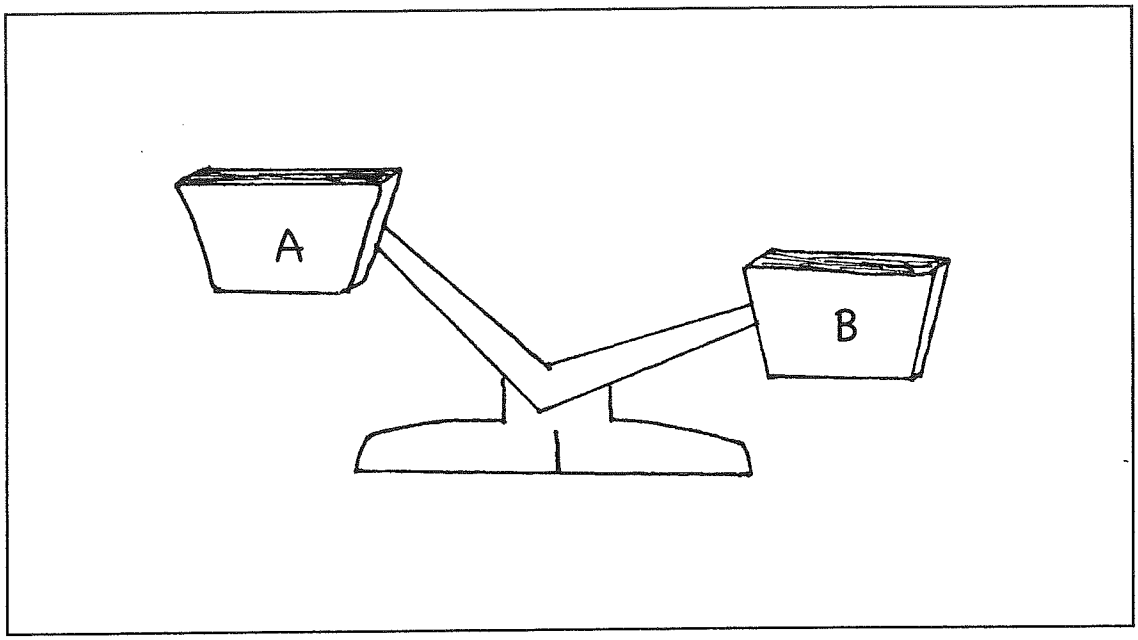
Name _____

Date _____

1. Draw the way a balance should look before you measure or compare objects.



2. Circle the side that is heavier; Circle A or B.



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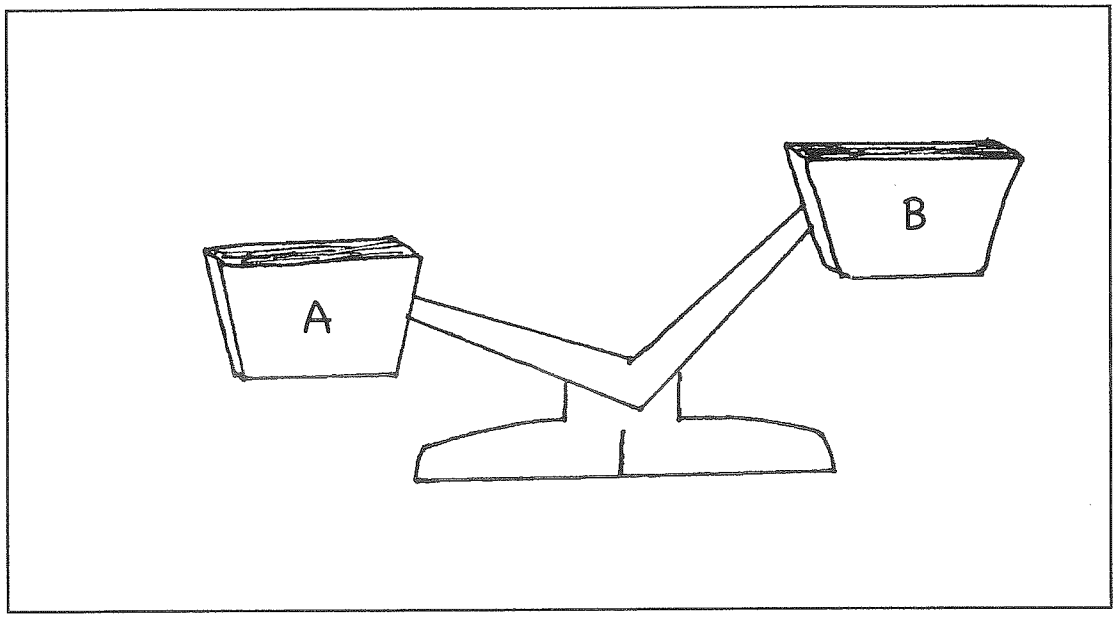
Name _____

Date _____

3. Describe what is happening in the picture below. Use the terms *balance* and *mass* in your answer.



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Name _____

Date _____

ACTIVITY

Volume and Mass

10

Help Frank and Rosie decide which container has the most candy based on the mass.

1. List the measuring tools you will use.

2. Write the question you are investigating.

3. Write the plan you will follow to find out.

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Name _____

Date _____

4. Make a chart to show your results.

5. Write a statement that explains which container has the most candy based on mass. Use the data from your chart in your statement.

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Name _____

Date _____

JOURNAL

Volume and Mass (cont.)

10

1. Describe what you observed when you measured the mass of 1/2 cup of popcorn kernels and 1/2 cup of rice.

2. Did the same volume of each substance have the same mass? Use the data from your investigation in your response.

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ACTIVITY

Mixing It Up!

Name _____

Date _____

11

1. List the materials you decided to investigate.

2. Write the question you are investigating.

3. Record the volume of each substance you are mixing.

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Name _____

Date _____

ACTIVITY 11

Mixing It Up! (cont.)

4. Write the steps you took:

5. Draw and record your observations.

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Name _____

Date _____

11

1. Describe the properties of your mixture.

2. Draw and write about how your team created a mixture.

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Name _____

Date _____

3. Draw and write about how your team separated the mixture.

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ACTIVITY

Separating Mixtures: Using Filtration

Name _____

Date _____

12

1. Hold the funnel and **slowly** pour the mixture of water, pepper, and rice into the center of the coffee filter.

2. Record your observations. Draw what you observed.

   a. Where is the water? _____

   b. Where is the pepper? _____

   c. Where is the rice? _____

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Name _____

Date _____

Separating Mixtures: Using Filtration (cont.)

3. Hold the funnel and **slowly** pour the mixture of water and salt into the center of the coffee filter.

4. Record your observations. Draw what you observed.

   a. Where is the water? _____

   b. Where is the salt? _____

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JOURNAL

Separating Mixtures: Using Filtration (cont.)

Name _____

Date _____

12

1. Draw and write how the filter helped to separate the water, rice, and pepper mixture.

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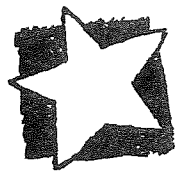
Name _____

Date _____

Separating Mixtures: Using Filtration (cont.)



12

2. Draw and write how the filter looked after pouring the salt water through the filter.

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13

ACTIVITY

Separating a Salt Water Mixture

Name _____

Date _____

1. Draw and write about your observations of the coffee filter from the pepper, rice, and water mixture after one day.

2. Draw and write about your observations of the coffee filter from the salt and water mixture after one day.

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Name _____

Date _____

Separating a Salt Water Mixture (cont.)

3. Draw a picture of the cup with the water and the cup with the water and salt mixture. Label your picture.

4. Draw a picture of what you think will happen and write why you think that.

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ACTIVITY

13

Separating a Salt Water Mixture (cont.)

Name _____

Date _____

5. After 2 hours, draw and write about any changes that occurred.

6. After two days, draw and write your cup observations.

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Name _____

Date _____

ACTIVITY

Separating a Salt Water Mixture (cont.)

13

7. Write what you think happened to the water and salt.

8. Draw and write what you observed in your water and soil mixture cup after five days.

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JOURNAL

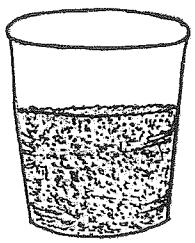
Separating a Salt Water Mixture (cont.)

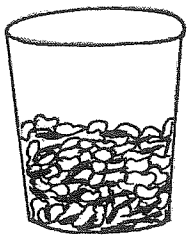
Name _____

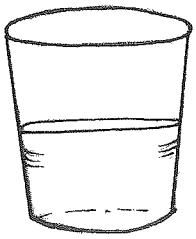
Date _____

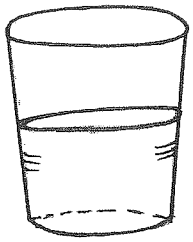
13

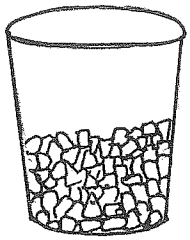
1. Circle the cups that contain a single substance. Place an *X* on the cups that contain a mixture.

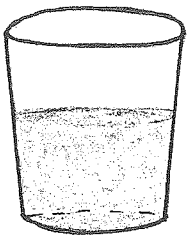

sand


beans and rice


water


salt water


popcorn kernels


Kool Aid

2. Write how you know that a substance is a single substance or a mixture.

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Name _____

Date _____

JOURNAL

Separating a Salt Water Mixture (cont.)

13

3. Write one way you can separate a mixture.

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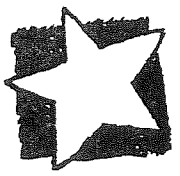

Key Terms

area - Area is the amount of space something covers.

balance - A balance is a tool used to measure how heavy an object is.

capacity - Capacity is the amount of substance a container can hold.

centimeter - A centimeter is one type of standard unit used to measure length.

classify - Classify is to group or sort objects according to similarities, such as color, size, shape, texture, sink or float, solid, liquid, or gas.

distance - Distance is the measurement of how far from each other two points or places are.

evaporation - Evaporation is the process of changing a liquid to a gas through heating or the motion of air. It does not necessarily involve bringing the liquid to the boiling point.

evidence - Evidence is an observation, data, reading, or occurrence that supports a person's ideas and knowledge.

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filtration - Filtration is the process of separating a solid matter from a liquid using filter paper.

force - A force is a push or a pull on an object.

gram - A gram is a unit of measurement used for determining the mass of an object.

heavier - Heavier describes an object or substance with more weight.

inch - An inch is one type of standard unit used to measure length.

length - Length is the measurement of something from one end to the other. Length measures how long, how wide, or how deep something is.

lighter - Lighter describes an object or substance with less weight.

liquid - A liquid is a state of matter that is free flowing, can be poured, and takes the shape of its container.

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Key Terms (cont.)

mass - Mass is the measurement of the amount of matter (material) within an object or substance. Mass is measured in grams or milligrams using a balance.

measurement - To find out how big, how heavy, or how long something is or how much it holds is called measurement. It is used to record, compare, and describe things.

measuring cup - A measuring cup is a standard tool used to measure the amounts of substances.

measuring spoon - A measuring spoon is a standard tool used to measure the amounts of substances.

meter - A meter is a unit of measurement that measures length or distance. There are 100 centimeters in one meter.

mixture - A mixture is a combination of two or more materials that can be separated.

motion - Motion is any changing of position of an object.

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nonstandard unit - A nonstandard unit is anything used as a unit of measure that is not the same in size. Hands, feet, and arm spans are examples of nonstandard units.

properties - Properties are characteristics by which matter is described. Hardness, size, color, shape, flexibility, buoyancy (sinking and floating), state of matter (solid, liquid, gas), odor, mass, and volume are some properties of matter.

rectangle - A rectangle is any flat four-sided shape with four right angles in each corner.

single substance - A single substance is a material made up of one thing.

solid - Solid is a state of matter that keeps its own shape and size.

standard unit - A standard unit is something used as a unit of measure that is the same for anyone who uses it.

square - A square is a flat four-sided shape with four equal sides and four right angles in each corner.

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Key Terms (cont.)

texture - Texture is a property of matter that describes the surface of an object as rough or smooth.

volume - Volume is the amount of space an object or substance takes up.

weight - Weight is a property that tells how heavy or how light an object is.

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