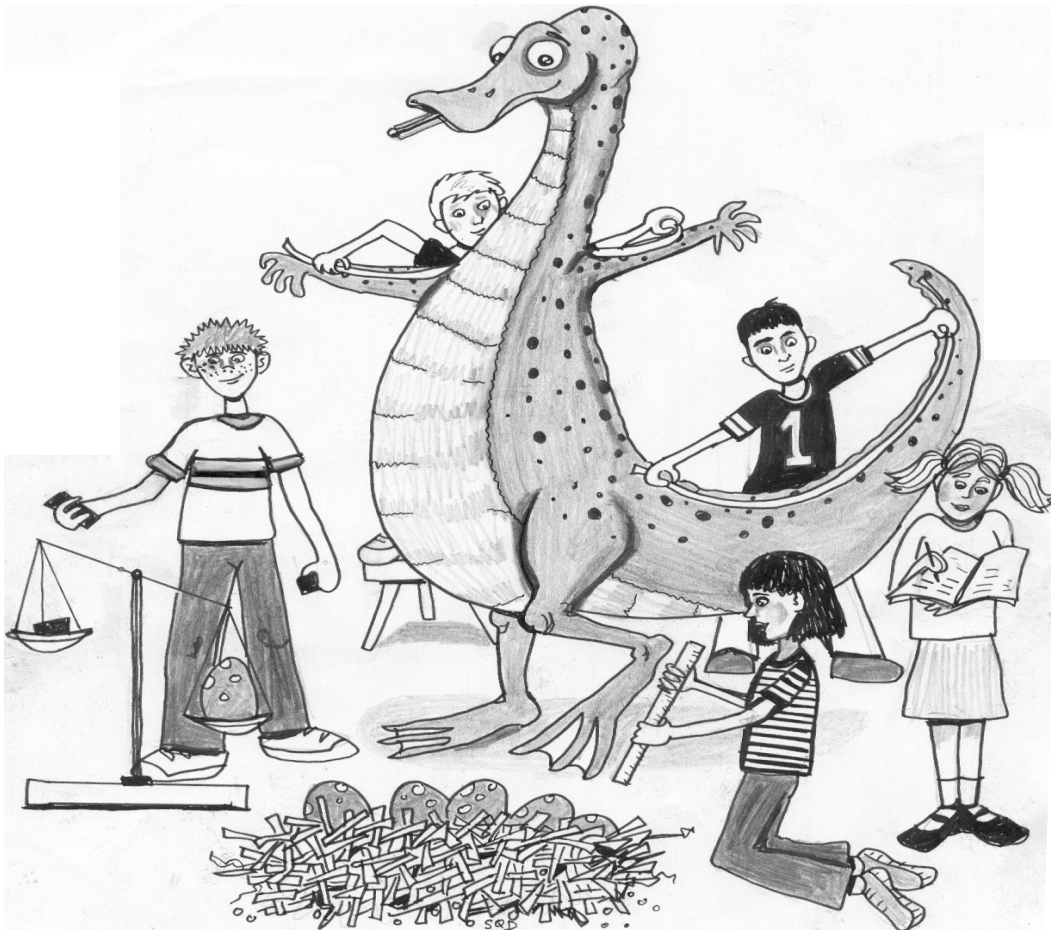


**ELEMENTARY SCIENCE PROGRAM**  
**MATH, SCIENCE & TECHNOLOGY EDUCATION**

**A Collection of Learning Experiences**

# **MEASURING**

## **Measuring Student Activity Book**



Name \_\_\_\_\_

This learning experience activity book is yours to keep. Please put your name on it now. This activity book should contain your observations of and results from your experiments.

When performing experiments, ask your teacher for any additional materials you may need.

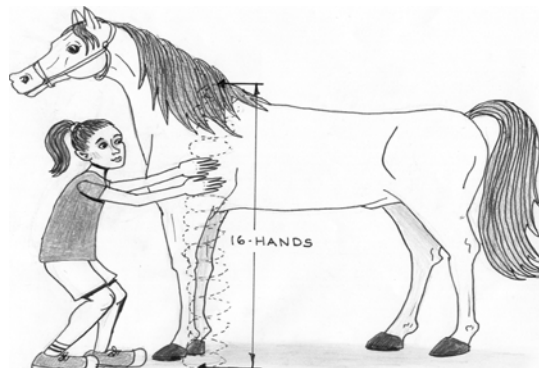
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**Activity Sheet for Learning Experience #2** Name \_\_\_\_\_

**NON STANDARD MEASURING**

Items Measured	Number of Hands	Number of Hand Spans	Number of Cubits	Number of Feet
Length of Desk				
Width of Desk				
Length of Door				
Width of Door				
Length of Filing Cabinet				
Width of Filing Cabinet				
Length of Chalkboard/Markerboard				
Width of Chalkboard/Markerboard				



**Activity Sheet for Learning Experience #3** Name \_\_\_\_\_

**MEASURING LENGTH**

<b>Items Measured</b>	<b>Number of Large Paper Clips</b>	<b>Number of Tongue Depressors</b>
Length of Desk		
Width of Desk		
Length of Door		
Width of Door		
Length of Filing Cabinet		
Width of Filing Cabinet		
Length of Chalkboard/Markerboard		
Width of Chalkboard/Markerboard		



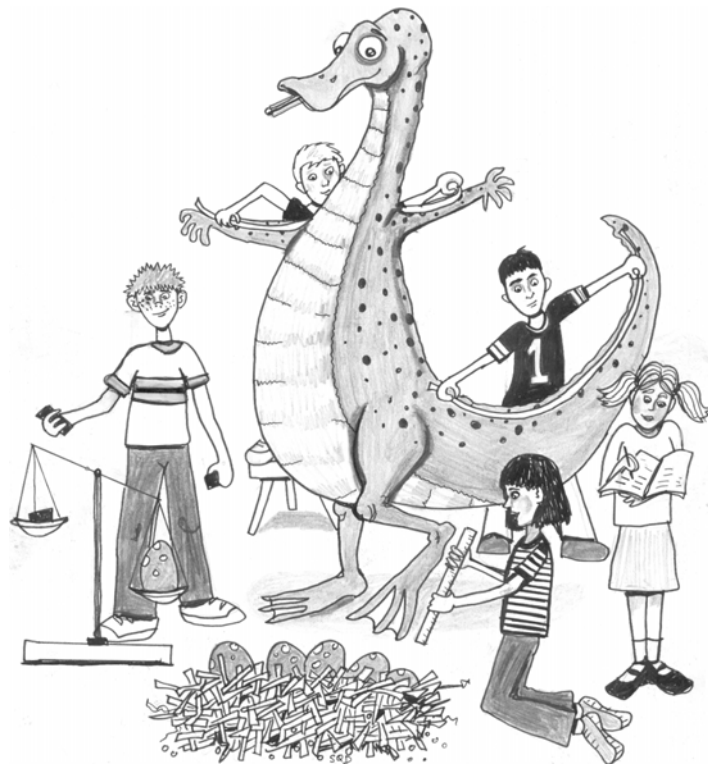
**Activity Sheet for Learning Experience #4** Name \_\_\_\_\_

**COMPARING HEIGHT AND WIDTH**

How tall are you? \_\_\_\_\_

How wide are you? \_\_\_\_\_

Are you taller than you are wide? \_\_\_\_\_



**Activity Sheet for Learning Experience #5** Name\_\_\_\_\_

**COMPARING PACE**

What is your pace? \_\_\_\_\_

What is your double pace? \_\_\_\_\_

Double Pace	cm.
Height	cm.
Width	cm.

What is longer your double pace or the height/width of your body?

\_\_\_\_\_

**Activity Sheet for Learning Experience #6** Name \_\_\_\_\_

**INTRODUCTION TO STARDARD MEASUREMENT**

What is the length of the first row of centimeter cubes? \_\_\_\_\_

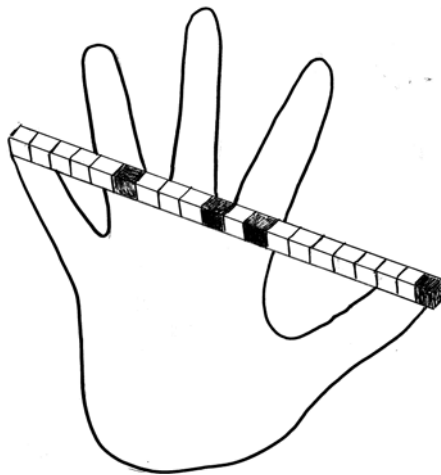
What is the length of the second row of centimeter cubes? \_\_\_\_\_

What is the length of the third row of centimeter cubes? \_\_\_\_\_



How many centimeter cubes does it take to measure your hand?

\_\_\_\_\_



How many centimeter cubes does it take to measure your hand span?

\_\_\_\_\_



How many centimeter cubes does it take to measure your cubit?

---



How many centimeter cubes does it take to measure your foot?

---



Use the centimeter measuring tape to measure your paper tape.

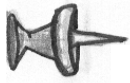
What is the length of your body? \_\_\_\_\_

What is the width of your body? \_\_\_\_\_

What is the length of your pace? \_\_\_\_\_

What is the length of your double pace? \_\_\_\_\_





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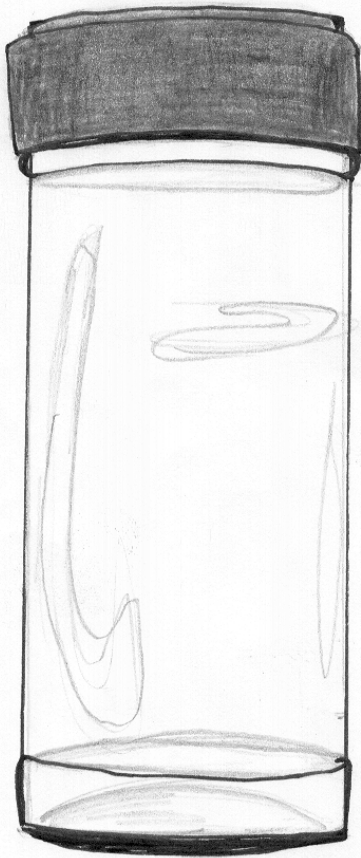


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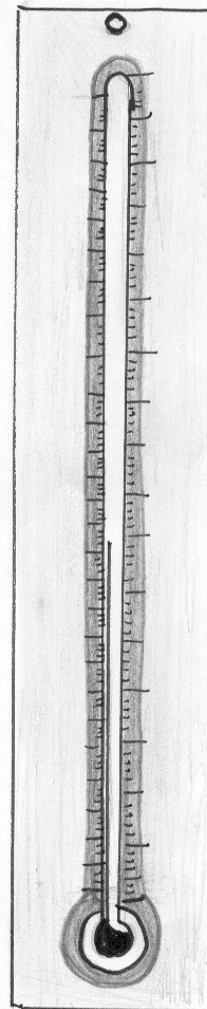
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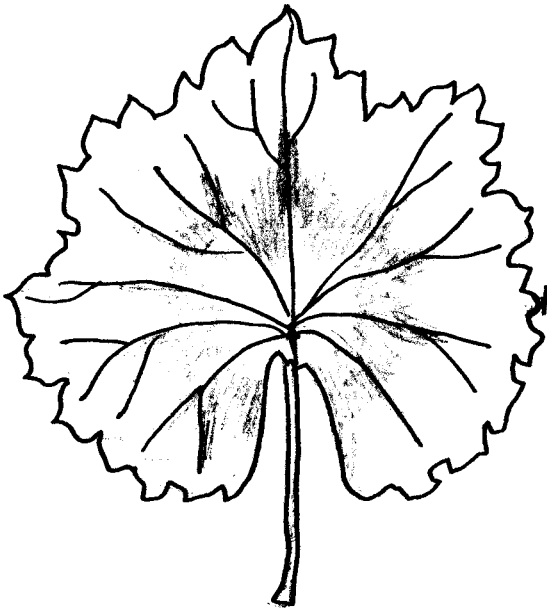
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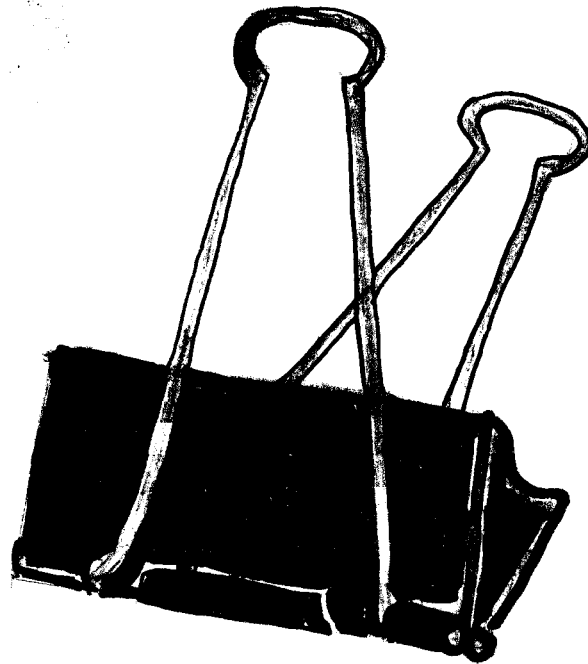
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**Activity Sheet for Learning Experience #7** Name \_\_\_\_\_

**LINEAR MEASUREMENT**

Use your measuring tape to find objects in the room equal to one meter or 100 cm. and write your results below.

Item 1 \_\_\_\_\_ Measurement \_\_\_\_\_

Item 2 \_\_\_\_\_ Measurement \_\_\_\_\_

Item 3 \_\_\_\_\_ Measurement \_\_\_\_\_

**Activity Sheet for Learning Experience #8** Name \_\_\_\_\_

**TEMPERATURES OF WATER**

Place a thermometer in cups containing water of different temperatures. Answer the questions below.

1. What is the temperature in the cup with cold water? \_\_\_\_\_ °C
2. What is the temperature in the cup with warm water? \_\_\_\_\_ °C
3. What is the temperature in the cup with hot water? \_\_\_\_\_ °C

4. What do you think will happen when you take the thermometer out of the cold water?

---

---

5. What happens to the liquid in the thermometer when you take the thermometer out of the cold water?

---

---

Why is this happening?

---

---

6. What do you think will happen when you take the thermometer out of the warm water?

---

---

7. What happens to the liquid in the thermometer when you take the thermometer out of the warm water?

---

---

Why is this happening? \_\_\_\_\_

---

8. What do you think will happen when you take the thermometer out of the hot water?

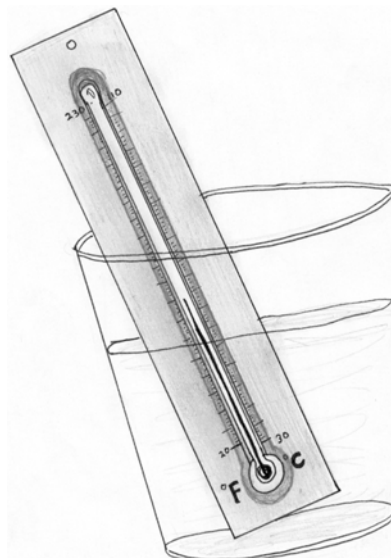
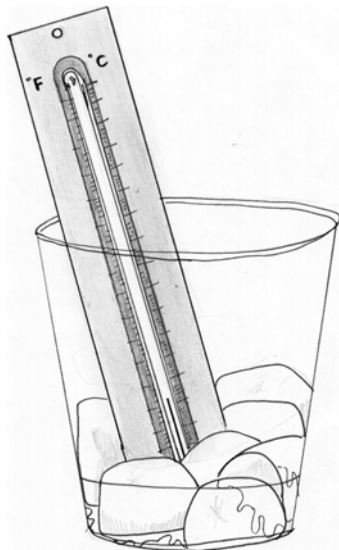
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9. Why is this happening? \_\_\_\_\_

---

10. What does the temperature of all three of the thermometers end up at once they are removed from the water? \_\_\_\_\_ °C



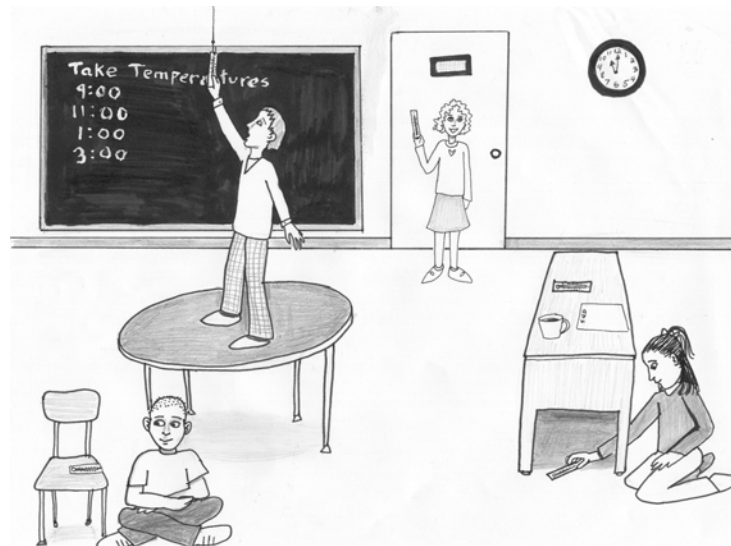
**Activity Sheet for Learning Experience #9** Name \_\_\_\_\_

**TEMPERATURE READINGS IN THE CLASSROOM**

Place your thermometer in a location somewhere in the classroom.  
Record the temperatures below.

**Location of thermometer:** \_\_\_\_\_

<u>Time of Day</u>	<u>Temperature</u>
<b>Morning temperature reading</b>	_____°C
<b>Midday temperature reading</b>	_____°C
<b>End of the day temperature reading</b>	_____°C



**Activity Sheet for Learning Experience #10** Name \_\_\_\_\_

**CAPACITY - FILL IT UP**

Predict the serial order of the empty containers from the least capacity (1) to the greatest capacity (4).

Clear plastic jar \_\_\_\_\_

Portion cup \_\_\_\_\_

Clear plastic tumbler \_\_\_\_\_

Plastic rectangular jar \_\_\_\_\_

Find out how many medicine cups it takes to fill the clear plastic jar, portion cup, clear plastic tumbler, and plastic rectangular jar. Write your results in the chart below.

Containers	Number of medicine cups
Clear plastic jar	
Portion cup	
Clear plastic tumbler	
Plastic rectangular jar	

Was your prediction correct? \_\_\_\_\_

Now that you have tested each cup, reorder the containers by capacity.

Clear plastic jar \_\_\_\_\_ Clear plastic tumbler \_\_\_\_\_

Portion cup \_\_\_\_\_ Plastic rectangular jar \_\_\_\_\_



**Activity Sheet for Learning Experience #11** Name \_\_\_\_\_

**AREA**

Using the paper squares, what is the area of your desk? \_\_\_\_\_

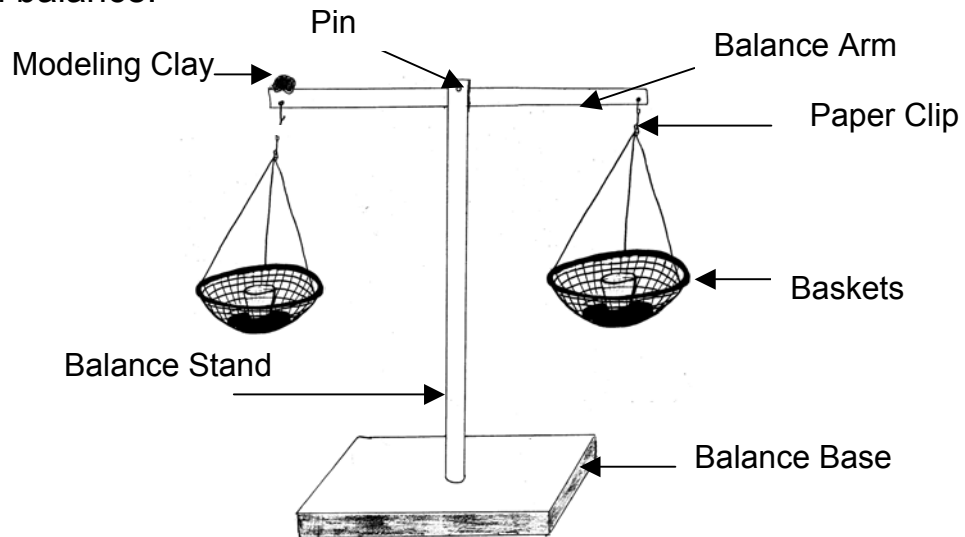
Use the paper squares to find the area of other surfaces in your classroom. Record the results below.

<b>Surfaces in the classroom</b>	<b>Area</b>
1.	
2.	
3.	

**Activity Sheet for Learning Experience #13** Name \_\_\_\_\_

**ASSEMBLING, BALANCING, AND USING A DOUBLE PAN  
BALANCE**

The picture below helps illustrate the proper way for constructing the double pan balance.



Record the mass of the various objects provided by your teacher. Be sure to list each object below.

Objects	Mass
	g.
	g.
	g.
	g.
	g.

Name: \_\_\_\_\_  
**Measuring Student Assessment**

Date: \_\_\_\_\_

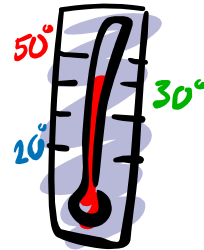
Directions: Read the question carefully and answer based on your knowledge about measuring. Circle the correct answer.

1.) If you and your mom were both going to measure the height of a milk carton, which unit of measure would you both use so that you each get the same answer.

- A.) Cubits
- B.) Hand spans
- C.) Hands
- D.) Centimeters

2.) This thermometer is showing a temperature of

- A.) 25°C
- B.) 30°C
- C.) 50°C
- D.) 10°C



3.) What would happen if you took a thermometer at room temperature and put into a cup of hot water?

- A.) The liquid inside the thermometer would go up.
- B.) The liquid inside the thermometer would go down.
- C.) The liquid inside the thermometer would not move.
- D.) The liquid inside the thermometer would leak.

4.) What would happen if you took a thermometer at room temperature and put it on top of a tray of ice cubes?

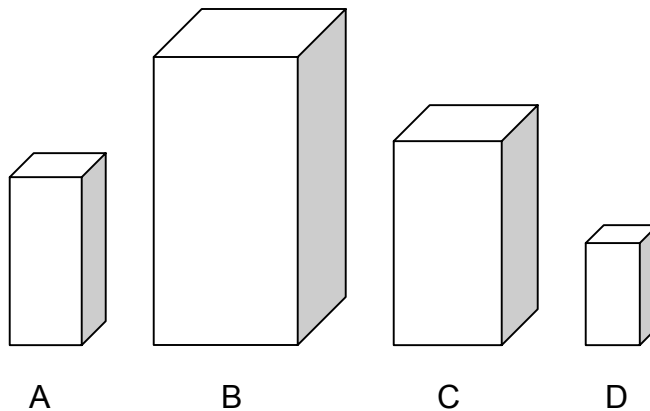
- A.) The liquid inside the thermometer would go up.
- B.) The liquid inside the thermometer would go down.
- C.) The liquid inside the thermometer would not move.
- D.) The liquid inside the thermometer would leak.

5.) There are \_\_\_\_\_ centimeters in 1 meter.

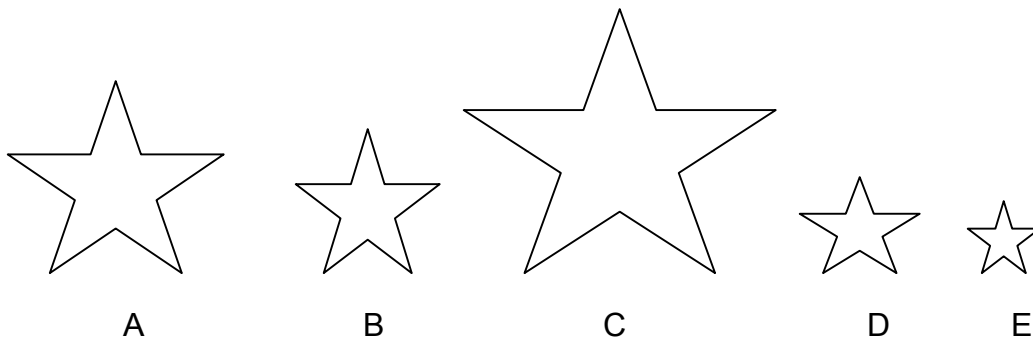
- A.) 20
- B.) 50
- C.) 100
- D.) 150

6.) What is the correct serial order of the blocks from widest to thinnest?

- A.) D, C, B, A
- B.) B, C, A, D
- C.) A, B, C, D
- D.) D, A, C, B



Use the stars to answer questions 7 and 8.



7.) What star would come first if you were putting these in serial order from tallest to shortest?

- A.) A
- B.) B
- C.) C
- D.) D

8.) Which star would come last if you were putting these in serial order from tallest to shortest.

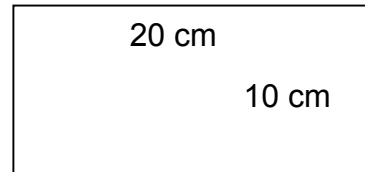
- A.) A
- B.) B
- C.) C
- D.) E

9.) Capacity is \_\_\_\_\_.

- A.) The amount of space that can be filled within an object.
- B.) The distance of 2 steps.
- C.) One-hundredth of a meter
- D.) The distance of 1 step.

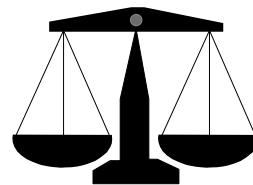
10.) What is the area of the rectangle below?

- A.) 200 square cm.
- B.) 300 square cm.
- C.) 400 square cm.
- D.) 500 square cm.


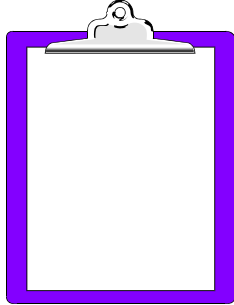
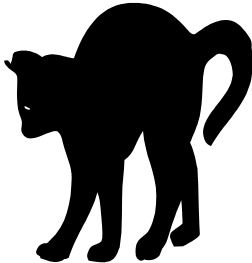



11.) Look at the balance. Pretend that there is one object in each basket. What do you know about the objects?

- A.) The objects have equal masses.
- B.) The object on side A has more mass.
- C.) The object on side B has more mass.
- D.) The object on side B has less mass.



12.) Measure the height and width of the following objects. Write your measurements in the correct spaces.

<p>A.</p>  <p>Height: _____ cm. Width: _____ cm.</p>	<p>B.</p>  <p>Height: _____ cm. Width: _____ cm.</p>
<p>C.</p>  <p>Height: _____ cm. Width: _____ cm.</p>	<p>D.</p>  <p>Height: _____ cm. Width: _____ cm.</p>

13.) Which object is the highest? \_\_\_\_\_

14.) Which object is the widest? \_\_\_\_\_

15.) Which object is as wide as it is high? \_\_\_\_\_

16.) Do any of the objects have greater height than width? \_\_\_\_\_  
If yes, which ones? \_\_\_\_\_

## **GLOSSARY**

Area:	the total surface measured in square units.
Balance:	an instrument for determining mass by the equilibrium weights suspended from opposite ends of a horizontal bar.
Capacity:	the amount of space that can be filled.
Centimeter:	one hundredth of a meter.
Cubit:	an ancient linear unit usually from 17 to 21 inches measuring from the elbow to the tip of the middle finger.
Dimensional:	showing width, length, and thickness.
Distance:	the extent of space between two points.
Double pace:	the distance covered in two steps.
Fulcrum:	the support of point that a lever rests on when it is lifting something.
Hand span:	the distance between the thumb and fourth finger on a hand in which the fingers are spread apart.
Height:	the distance of the lowest point and the highest point of a person or object that is standing upright.
Length:	the linear extent of an object measured from end to end.
Level:	a horizontal position or condition.
Mass:	the amount of matter in an object.
Measurement:	the process of measuring or being measured.
Meter:	the basic unit of length in the metric system.
Non-standard:	a unit of measurement that is not a uniform scale.
Observe:	to become aware of an object or event by using any of the senses to identify properties.
Pace:	the distance covered in a step.

Reading:	to register or indicate, as in a thermometer
Serial order:	arranged in a series.
Strategy:	a detailed plan for reaching a goal.
Tepid:	moderately warm.
Temperature:	measure of warmth or coldness of an object.
Thermometer:	an instrument for measuring temperature.
Washer:	a flat ring of metal used to hold a nut or bolt more tightly in place.
Width:	measurement from side to side.