

LETTER TO PARENTS

Cut here and paste onto school letterhead before making copies.

SCIENCE NEWS

Dear Parents,

Our class will be learning metric measurement over the next several weeks using the **FOSS Measurement Module**. We'll explore the need for standard units, and work with the metric units and tools used by scientists worldwide. Our approach will be to introduce the metric system as the language used by scientists to communicate the results of their observations and experiments.

It has been found that students learn metric units (liter, gram, meter, degree Celsius) quicker and more thoroughly when they are introduced as an independent, integrated system— not converted from the English customary units (foot, pound, quart, degree Fahrenheit). Our goal is that the metric concepts will have their own frame of reference in your child's mind, and that in time he or she will think metric.

Knowing how to measure is important in everyday life as well as in scientific endeavors. Watch for the Home/School Connections sheets that I will be sending home from time to time. These homework assignments suggest ways for your whole family to review the metric measurement already in common usage in the U.S., and to extend your use of metrics into areas that are less familiar. At this time the U.S. is the only major country in the world that does not use metric measurement as its national standard. It is only a matter of time before the U.S. adopts the metric system, and the students in our class will be ready.

We are looking forward to several weeks of activities designed to provide an interesting introduction to metric measurement. If you have any questions or comments, or have some metric measuring tools you would like to share with the class, please drop me a note.

Metric Measurement Units	
The Meter... is about the height of a typical doorknob above the floor.	The Liter... is about the volume of water in a nice big water balloon.
The Gram... is about the mass of a standard paper clip.	Degree Celsius Room temperature is about 24°; body temperature is about 37°.

Comments: _____

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 1: THE FIRST STRAW

Marny and Max wanted to estimate the length of the playground. It was not important that they have an exact measurement, but they wanted some idea of how big it was for a field day event they were planning.

Marny decided to measure it by walking across the playground. She marked off one walking step and found it was 50 cm long.

Max decided to measure using the wheel on his wheelchair. Marny measured the circumference of the wheel and found out that it was 2 m around. Then they walked and wheeled across the playground to see how big it was.

If Max counted 40 full turns of his wheel from one end of the playground to the other, how many walking steps did Marny take to cover the same distance?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 2: WEIGHT WATCHING

Seventy-five years ago, pharmacists weighed medicine on balances like the ones you have been using. The mass pieces were very expensive, so a pharmacist would buy as few mass pieces as possible. If a pharmacist had 1-g, 3-g, and 9-g mass pieces, he or she could weigh out any number of grams from 1 g to 13 g. Show how you could measure all of the masses from 1 g to 13 g using only the three mass pieces given.

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 3: TAKE ME TO YOUR LITER

Some students were raising crayfish in their classroom. The students set up the habitat in a large bus tray. They used 12 liters of water to fill the tray. To keep the water fresh, they needed to replace one-third of the water every 3 days.

How much water did they use for the crayfish habitat in a month (30 days)?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 4: THE THIRD DEGREE

A girl was planning to visit one of two cousins for her vacation. She was having a hard time deciding which one to visit, so she decided she would check the newspaper for the next 5 days, then visit the cousin who lived in the city with the highest average temperature.

She recorded these temperatures the third week of September.

	Dallas	Miami
Monday	31°C	29°C
Tuesday	30°C	30°C
Wednesday	36°C	32°C
Thursday	28°C	32°C
Friday	30°C	32°C

Which cousin do you think she decided to visit?

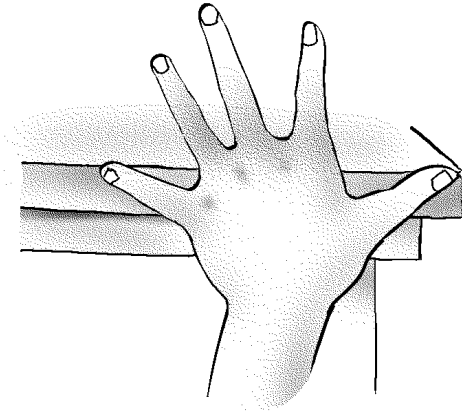
Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 1: THE FIRST STRAW

Find a home partner to work with you. (Try to choose someone who is not close to your age.) Make a list of five objects that you would like to measure. Then choose a body part to use as a measurement unit. For example, you might measure the kitchen table using a thumb-to-pinkie unit. First you measure the table using your hand, then your family partner uses his or her thumb-to-pinkie unit to measure the same length that you did. Fill in the chart below, then answer the question at the bottom of the page. Be sure to fill in your name and the name of the person who worked with you.



OBJECT	UNIT	(ME)	(HOME PARTNER)

Look at the chart above. Do you think it's a good idea to use different parts of your body as a measuring unit? Why or why not?

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 2: WEIGHT WATCHING

Have your family help you make a list of measurements that people need to use in daily life. Once a day, ask each family member if they can think of something they did that required something to be measured. Make your list below.

TYPE OF MEASUREMENT	USED FOR...

What kind of measurement does your family use most often?

Can you think of any other measurements that people might need to use that you have not listed above?

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: TAKE ME TO YOUR LITER

Gather eight different products you use at home. Fill in the chart below with the name of the product, the type of container it comes in, and the measurement that is marked on the label. An example is given on the first line of the chart.

PRODUCT	TYPE OF CONTAINER	LABEL MEASURE
soft drink	aluminum can	355 ml

How are these products packaged? Are they filled to capacity, or is air space left in the package?

When do manufacturers label packages with liters or milliliters, and when do they label them with grams?

Do you think it is better to label packages with the volume, the capacity, or both?
