

# *THAT'S RIGHT, THE METRIC SYSTEM*

**Directions:** Each person in your table will use the equipment available today to measure and answer the following questions that focus on **using the metric system for measuring**. You can start on any part you want as long as you do all five (in other words, **do not** all start on temperature or there will not be enough space for all). Remember, the metric system is **based on 10**. This means you can convert to other metric units by moving the decimal point left or right. You can use your textbook for help in converting and your notes. Put your measurements in scientific notation when dealing with really large numbers ( $1 \times 10^{-6}$  Kilograms). **USE THE CORRECT UNITS.**

## DISTANCE

1. Measure your height using the meter stick. Have **your partner measure you (not you)** and record that number in **centimeters**. Convert your height to **millimeters**, **meters** and **kilometers**. Are you **the tallest** in millimeters, centimeters, meters, or kilometers?
2. Measure your arm span from tip of one finger to the other. Have your partner help you measure and record the number in **centimeters**. Convert your height to, **millimeters**, meters and **kilometers**.
3. Measure the length and width of one of the tables in **cm**. Convert to **mm**, **m** and **km**.

## MASS

0. Zero the balance before use. Turn knob under metal pan until both white marks line up.
1. Get the mass of a **science workbook (not your notebook)** using the balance. What is its mass in **grams**? Convert its mass to **milligrams**, **centigrams**, and **kilograms**.
2. Get the mass of your pencil *or* pen in **grams**. Convert its mass to **milligrams**, **centigrams**, and **kilograms**.
3. Get the mass of **eight** large paper clips. Give their weight in **milligrams**, and **grams**. What is the mass of **one** paper clip in **milligrams (do by calculating and not by weighing it, then check by putting it on the balance)?**

## VOLUME

0. Where do you take the reading on a graduated cylinder filled with a liquid? (*Answer: meniscus or bottom of curve*)
1. Use the ruler to measure the **volume (cubic centimeters (cm<sup>3</sup>))** of the plastic container (**not** the graduated cylinder). You will need to measure the **Length x Width x Height** of the container to get its **approximate** volume.
2. How many **milliliters** of water are in the water bottle? Convert to **centiliters** and **liters**.
3. What is the volume of the **glass orb (the marble)** in **milliliters**?

## TEMPERATURE

1. Use the thermometer to determine the temperature of the ice water. Leave it in for **one minute**, and then record the temperature in **degrees Celsius**.
2. Take the thermometer out of the water and use it to measure the **temperature of your thumb**. Hold it on your thumb for **one minute**, and then record the temperature in **degrees Celsius**.
3. Using the thermometer with the **BLACK MARK** at the top, record the air temperature at your desk in **°Celsius**. All you need to do is **read the temperature** on the thermometer. **Please do not touch or eat.**

## TIME

1. Time how long your partner can go before blinking. Record **their name** and **time (in seconds)** on your paper.
2. Using the stopwatch see how fast you can stop and start the stopwatch. Write down (**make a data table**) the time for each of your **ten trials on your paper**. Now, **take the average of the ten times**. You can use a calculator.
3. The class is **50 minutes long**. Convert this to **seconds** and **hours**.