Name:_____Date:_____Class:_____

Student Worksheet

The Metric System from Big to Small

At your school, tryouts for the school basketball team are coming up. The new coach, who just came here from Spain, has decided that in order to tryout for the team you must be at least 153 centimeters tall.

Materials

- large sheet of butcher paper and a pencil OR chalk and a clear spot on a sidewalk
- metric tapes and rulers
- string, (~3 m long)

Question Can you try out for the team?

Make a Prediction

_____

_____

_____

Procedure

1. Lie down on a large piece of paper or on the ground, like the drawing below. Your partner will do step 2.
2. Draw an outline around your partner so that it looks like what police do at a crime scene involving murder. Make sure that the line is close to the body!
3. Look at the table on the next page. Will you be able to make these measurements? If not, repeat steps 1-2 to make the image clearer.
4. Measure each body part using metric units. Record your answer in the table on the next page.

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Record Your Observations

Data Table: The Metric System from Big to Small

Body Part	Meters (m)	Centimeters (cm)	Millimeters (mm)	Micrometers (μm)	Nanometers (nm)
Top of head to bottom of heel					
Tip of shoulder to tip of middle finger					
Top of hip bone to bottom of heel					
Back of heel to front of big toe					
Center of knee cap to bottom of foot					
Circumference of widest part of head					
Tip of elbow to tip of middle finger					
Shoulder width					

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Analyze the Results

1. Complete the table by converting this measurement into the other metric units. For example, if your subject's length is 1.9 meters, then you would convert the 1.9 meters to 190 centimeters, 1900 millimeters, etc. Micrometers and nanometers can be written using scientific notation.
2. Once all of the measurements are taken and the table is complete, take the data from the table and label the full-size figure on the butcher paper with the unit of measurement you feel appropriate for each body part. Be sure to plan out beforehand how you will label the diagram to make sure it is easily readable and neat.
3. After completing the labeled diagram, show it to your teacher for approval then, in your groups, answer the questions below.

Draw Conclusions

1. Compare your measurements across each row. How are they similar? How are they different?

2. How should you determine which metric unit is best to use for a particular body part measurement?

3. Why do you think the scientific community and most countries in the world use the metric system rather than the English system (the system we use in the U.S.)?

4. In your opinion, which system is better, the English system or the metric system? Why?

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