Activity: Mysteriously Melodramatic & Maniacal Metric Measurements

Summary
In this activity, students predict the measurements of objects using metric units. They then take the actual measurements and compare them to their predictions.

Resource Type: Activity
Grade Level: High school

Objectives
By the end of this lesson, students should be able to
- Take measurements using metric units.

Chemistry Topics
This lesson supports students’ understanding of
- Measurements
- SI units

Time
Teacher Preparation: 20 minutes
Lesson: 1 hour

Materials
For each group:
- Meter stick
- Thermometer
- Graduated cylinder
- Large beaker

Safety
- While outside, must remain in view of your teacher at all times.
- Do not approach any parked or moving vehicles.

Teacher Notes
- This activity works well as a competition, assigning points for teams based on how closely their predictions match actual measurements.
- If using the activity as a competition, make sure rules for scoring are made clear before beginning the activity.
- Students may have difficulty figuring out how to measure the volume of a hand, particularly if this activity is used at the beginning of the school year. It may be helpful to have a discussion about volume measurements prior to the activity.

FOR THE STUDENT
Student Activity Sheet: Mysteriously Melodramatic & Maniacal Metric Measurements
Lesson

Safety
While outside, you must remain in view of your teacher at all times. You may not approach any parked or moving vehicles.

Materials
- Meter stick
- Thermometer
- Graduated cylinder
- Large beaker

Procedure
PART I: MAKING PREDICTIONS
For each of the following items, make a prediction for the measurement of the item using the unit given. You must write your answers in PEN. You may not cross out an answer or change it at any time. You will have 3 minutes to make your predictions.
1. The length of the building in meters: __________________
2. The height of the exteriors doors in decameters: ______________
3. The height of an exterior step in millimeters: _______________
4. The temperature outside, in the shade, in Kelvin: ______________
5. The volume of water a solo cup can hold in milliliters: __________
6. The area of a parking space in square meters: _______________
7. The area of the building in square meters: _______________
8. The height of the building in meters: ______________
9. The volume of the building in cubic meters: _______________
10. The volume of your smallest groupmate’s hand in milliliters: __________
11. The temperature of your groupmate’s armpit in Celsius: __________

PART II: MAKING MEASUREMENTS
Take a meter stick, a thermometer, graduated cylinder and this handout with you. Measure each of the items and record the measurement in the correct units. You must record your answers in pen. You may not cross out an answer or change it at
any time. You will have 25 minutes to make your measurements. Any items you have not made a measurement for will cost you points in the game.

1. The length of the building in meters: __________________

2. The height of the exterior doors in decameters: ______________

3. The height of an exterior step in millimeters: ______________

4. The temperature outside, in the shade, in Kelvin: _____________

5. The volume of water a solo cup can hold in milliliters: __________

6. The area of a parking space in square meters: ______________

7. The area of the building in square meters: ______________

8. The height of the building in meters: ______________

9. The volume of the building in cubic meters: ______________

10. The volume of your smallest groupmate’s hand in milliliters: __________

11. The temperature of your groupmate’s armpit in Celsius: __________

Conclusions
How close were your predictions to the actual measurements?

Do you think you would have been closer if you were using English measurements (foot, yard, Fahrenheit)? EXPLAIN YOUR ANSWER.