Lab: Metric Olympics

Class Set

Background

The Olympic motto is Citius—Altius—Fortius, which is Latin for "faster, higher, stronger." The intended meaning is that one's focus should be on bettering one's achievements, rather than on coming in first. Each of the five Olympic rings (see upper right) is a different color. Together, they represent the five inhabited continents, although no particular ring is meant to represent any specific continent. (The Americas are treated as one continent.) The rings are interlaced to represent the idea that the Olympics are universal, bringing athletes from the entire world together. The ancient Greeks believed that fire was given to mankind by Prometheus, and considered fire to have sacred qualities. Eternal flames burned in front of Greek temples, flames lit using the rays of the sun. Greek rituals also included torch relays, although this was not actually part of the ancient Olympic Games. The Olympic flame is lit in front of the ruins of the Temple of Hera in Olympia, emphasizing the connection between the ancient Games and the modern Games.

The Olympic Oath is taken by one athlete and one judge from the home nation during the Opening Ceremony of every Olympics, acting on behalf of all the competitors and judges.

Please read this Olympic oath silently to yourself…

"In the name of all the competitors I promise that we shall take part in these Olympic Games, respecting and abiding by the rules which govern them, committing ourselves to a sport without doping and without drugs, in the true spirit of sportsmanship, for the glory of sport and the honor of our teams"

Measurement is extremely important in sports, especially when athletes are performing at the Olympic level. Accurate measurement becomes critical in terms of the height of jumps, times of races, and mass of weights.

Materials

Paper plates, drinking straws, marbles, meter sticks, metric ruler, cotton puffs, large sponge, large bucket, graduated cylinder, graph paper, digital scale and worksheet

Procedure

1. There are a total of 6 stations with a different task at each. Each station will have a task card with complete instructions and materials.
   *(**Note: There are 2 set-ups of each station to help with overcrowding…)*

2. There is **NO** practicing of events!

3. When measuring, round all values to the nearest 10^{th}. If you measured 1.55 grams, you would round to 1.6 grams.

4. Read **ALL** the instructions BEFORE you start!

5. Before you begin the task, you must make and **RECORD** an ***Estimated Value*** of how you think you will perform at this station in the data table. (this is an educated guess)

6. After your guess has been recorded, you may begin the event at the station you are at.

7. After you perform your event, you must measure and **RECORD** your ***Accepted Value*** results in the data table. (This is the value you just got from doing the event.)

8. Calculate the difference between your **Estimated Value** and your **Accepted Value** result. **RECORD** this in the ***Difference from accepted value*** column.

9. Calculate your percent deviation and **RECORD** it in the ***Percent (%) deviation from accepted value*** column. Formula: (Accepted Value – Estimated Value) / Estimated Value

10. **Clean-up!** When you finish the task at that station, place all materials back the way you found them.

11. Do not rotate until you are told to do so.

12. Each group will work at one station. When time is called, your entire group will rotate to the next station.

13. When you arrive at the next station, follow the directions on the card.

14. Repeat this procedure until all stations are visited in order.

15. After all stations are completed, go back to your seat and look at all of the values in the ***Accepted value*** column. **Compare** with your partner and whomever had the better score in each event will fill out an index card with: *(*between you and your partner you will fill out 6 cards TOTAL)*

Event: _____
Name:_____
Score: _____

16. Place your index card in the designated bin.

Data:

This is a sample data table, write on your OWN paper!

Metric Olympics Data Table

Event	Estimated Value	Accepted Value	Difference from accepted value	Percent (%) deviation from accepted value
Paper Plate Discus	cm	cm		
Straw Javelin	cm	cm		
Cotton Ball Shot Put	cm	cm		
Right handed sphere grab	g	g		
Left handed sponge squeeze	ml	ml		
Big Foot Contest	cm2	cm2		
Total	X	X		X

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Student Sheet

Data Table:

Event	Estimated Value	Accepted Value	Difference from accepted value *YOUR SCORE*	Percent (%) deviation from accepted value
Paper Plate Discus	cm	cm		
Straw Javelin	cm	cm		
Cotton Ball Shot Put	cm	cm		
Right handed sphere grab	g	g		
Left handed sponge squeeze	ml	ml		
Big Foot Contest	cm2	cm2		
Total	X	X		X

Analysis Questions:

1. Analyze your "Score" in the Total row on your data table. Is a low score good or bad? Explain.

2. Describe why it is so important to take accurate measurements, not only in this lab, but in life. In your answer describe an example in everyday life on the importance of taking accurate measurements.

3. Think about the Olympic Games…Imagine yourself as an Olympic athlete. What are the implications on being 1 second slower in your race or 1 centimeter too short in your long jump event? Think about the repercussions of an inaccurate measurement of your event. Describe the repercussions of getting a measurement wrong in the Olympics for an athlete. (Think BIG picture, during and even after the Olympics…)