

Name: _____
Mr. Willis
Conceptual Physics: _____
Date: _____

Unit I
Introduction to Conceptual Physics
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I

My Measurer Activity

Objective: To understand why standard units are valuable, to convert metric units and figure derived units.

Procedure

1. Choose an object and list it here: _____
2. Take that object and measure the length of the room. Record the number of object lengths along the length of the room. Remember to always indicate units as well as quantity (ie. 37 books) length of the room (objects): _____
3. Take the same object and measure the width of the room. Record the number of object lengths along the width of the room. _____
4. Take the same object and measure the height of the room. Record the number of objects lengths along the height of the room. _____
5. Use a metric ruler to carefully measure the length of your object. Record how many centimeters long the object is: _____

Analysis

6. To find the room's measurements in centimeters just multiply the length of your object (in centimeters) by the number of objects measured along the length, width and height of the room.
length of room (in centimeters): _____ *width of room (in centimeters):* _____
height of room (in centimeters): _____
7. To convert centimeters to millimeters multiply the measurements above (#6) by 10. (1 cm = 10 mm)
length of room (in millimeters): _____ *width of room (in millimeters):* _____
height of room (in millimeters): _____
8. To convert centimeters to meters multiply the measurements above (#6) by 0.01. (1 cm = 0.01 m)
length of room (in meters): _____ *width of room (in meters):* _____
height of room (in meters): _____
9. Area can be measured in **derived** units of square meters. To determine the area of the room in square meters multiply the length of the room (in meters) by the width of the room (in meters).
Area = length x width
area of room (in square meters or m²) = _____
10. Volume is also a derived unit that is calculated as cubic meters. To determine the volume of the room in cubic meters multiply the area of the room from above (#9) by the height of the room in meters.
Volume = length x width x height
volume of room (in cubic meters or m³) = _____