

Problem Solving Steps

Pre-steps for Problem Solving

- **Use Pencil only to solve problems.**
- Record MLA heading (MYCD)
- *Copy word problem if necessary.*
- Record the template below on paper and include the formula, data, and answer blank.

Print word problem if necessary.

Formula: _____

Answer: _____

Data:

Steps for Problem Solving

1. Read the problem carefully to have an understanding of the *language*.
2. Read the problem for a second time or as many times as needed until you can answer the following question. “*What I am solving for in the problem?*”
3. After reading the problem and determining what the unknown is, label the unknown word (dimension) with the appropriate variable symbol, followed by a question mark. The label (variable symbol) should be above the word.
4. Record data.
 - First record the unknown variable symbol in the data column followed by a blank space.
Example: F = _____
 - Now re-read the problem (reading from left to right) and record each variable into the data chart, in order as it occurs in the passage/problem.
5. Use the STAAR formula chart to determine the **base equation** that will be used to solve the problem. Manipulate the **base equation** to determine the **derived equation** if necessary. Use a “;” to separate the two equations if necessary.
6. Skip a space under the Answer blank before recording the base/derived equation. (Be sure to skip a space between each step.)
7. Proceed by recording the unknown variable followed by the equal sign again and substitute the quantities into the variables. The units must be recorded with each number.
8. Calculate and record the answer.

Problem Solving Format

3. A student finds a shiny piece of metal that she thinks is aluminum.

In the lab she determines that the metal has a volume of 245 cm^3 and a mass of 612 g . The student knows she can calculate the density to determine if the metal is aluminum.

Round the final answer to the tenths place.

Formula: $D = \frac{m}{V}$

Data: $\frac{m}{V}$

$$D = \frac{\quad}{\quad}$$

$$V = 245 \text{ cm}^3$$

$$m = 612 \text{ g}$$

Answer: $\underline{2.5} \frac{\text{g}}{\text{cm}^3}$

$$D = \frac{m}{V}$$

$$D = \frac{612}{245} \frac{\text{g}}{\text{cm}^3}$$

$$D = 2.4979 \frac{\text{g}}{\text{cm}^3}$$