

Periodic Table Review

- Classify each of the following as a chemical or physical *property*:
 - Copper has a reddish-brown color
 - Ice floats in water
 - Sugar is soluble in water
 - Honey pours slower than water
- Classify each of the following as a chemical or physical *change*:
 - A candle burns
 - A cut apple turns brown if left out in the air
 - Italian salad dressing separates over time
 - As shoes wear out, holes appear in the soles
- Classify each property as a characteristic of a metal or nonmetal:
 - Shiny in appearance
 - Does not react with acids
 - Shatters easily
 - Electrically conductive
- Classify each of these elements as a metal or nonmetal:
 - Tungsten
 - Krypton
 - Antimony
 - Sodium
- List two characteristics that the noble gases share.
- List two characteristics of the alkali metal family.
- The melting points of sodium (Na) and rubidium (Rb) are 98°C and 39°C respectively. Estimate the melting point of potassium (K).
- Predict whether each of the following elements would be more likely to form an anion or a cation.

a. Na	d. Cu
b. Ca	e. O
c. F	f. Li

- Use a periodic table to complete the missing information in the chart below for each electrically *neutral* atom.

Element Symbol	# of protons	# of neutrons	# of electrons
	6	6	6
Ca		21	
		117	78
U		146	

- State the Law of Conservation of Matter.
- Explain why the phrases "using up" is misleading if the Law of Conservation of Matter is taking into account.
- Consider the equation:

$$\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightarrow 2\text{NH}_3(\text{g})$$
 - What is the coefficient for hydrogen gas?
 - What is the coefficient for NH_3 gas?
 - What is the coefficient for nitrogen gas?
- Balance the following equations:
 - $\text{Sn}(\text{s}) + \text{HF}(\text{aq}) \rightarrow \text{SnF}_2(\text{aq}) + \text{H}_2(\text{g})$
 - $\text{SiO}_2(\text{g}) + \text{C}(\text{s}) \rightarrow \text{SiC}(\text{s}) + \text{CO}(\text{g})$
- How many water molecules are in one mole of H_2O ?
- Find the molar mass of the following substances:
 - Limestone, CaCO_3
 - Tums antacids, $\text{Mg}(\text{OH})_2$
 - Aspirin, $\text{C}_9\text{H}_8\text{O}_4$
- Consider the chemical equation:

$$3\text{PbO}(\text{s}) + 2\text{NH}_3(\text{g}) \rightarrow 3\text{Pb}(\text{s}) + \text{N}_2(\text{g}) + 3\text{H}_2\text{O}(\text{l})$$
 - How many moles of NH_3 are needed to react with 3 moles of PbO ?
 - How many moles of N_2 are produced when 3 moles of PbO reacts with 2 moles of NH_3 ?
 - How many moles of H_2O would be produced if 6 moles of PbO reacted with 4 moles of NH_3 .

