

## Physical Science 20

### Can you...?

- Do operations with significant digits?
  - $(3.40)(2.000)$
  - $4.004/0.00224$
  - $19,000 + 7,540$
  - $8,000.0 - 721$
  - $(3.51 \times 10^4)(2.111 \times 10^5)$
- Expand scientific notation?
  - $2.559 \times 10^{12}$
  - $9.38 \times 10^{-7}$
- Contract scientific notation?
  - 0.0000000382
  - 90,220,000,000,000,000,000,000,000
- Convert from grams to moles?
  - 34.2 g of calcium
  - 528.8 g of sodium
  - 0.056 g of aluminum
  - 101,220.5 g of  $\text{CaSO}_4$
- Convert from moles to grams?
  - 23.2 moles of carbon
  - 2.1 moles of oxygen gas
  - 99 moles of  $\text{NH}_4\text{NO}_3$
  - 28.1 moles of water
- Identify the number of molecules?
  - 2.33 moles of strontium
  - 8.4 moles of  $\text{H}_2\text{SO}_4$
  - 562.2 g of carbon
  - 321.3 g of water
- Identify the total number of atoms?
  - $3.35 \times 10^5$  molecules of  $\text{H}_2\text{O}$
  - 4.5 moles of  $\text{CaCl}_2$
  - 32.9 g of aluminum
  - 925.88 g of  $\text{Ca}(\text{NO}_3)_2$
- Perform a percent-error calculation?
  - A chemical reaction between carbon and oxygen should theoretically produce 32.5 g of carbon monoxide, but only produces 30.8 g. What is the percent error for this reaction?
- Identify the parts of a laboratory write-up?
  - Where do tables get located?
  - What needs to be shown in the analysis section?
  - Where are sources of error noted?
- Name binary ionic compounds?
  - $\text{K}_2\text{O}$
  - $\text{MgBr}_2$
  - $\text{PbCl}_2$
  - $\text{Al}_2\text{S}_3$
  - $\text{Fe}_2\text{O}_3$
- Write binary ionic formulas?
  - Calcium chloride
  - Lithium bromide
  - Strontium oxide
  - Lead (II) fluoride
  - Silver sulphide
- Name binary covalent compounds?
  - $\text{CO}$
  - $\text{H}_2\text{O}$
  - $\text{CCl}_4$
  - $\text{N}_2\text{O}_3$
- Write binary covalent formulas?
  - Carbon tetrabromide
  - Dinitrogen trisulfide
- Name polyatomic ionic compounds?
  - $\text{Na}_2\text{SO}_4$
  - $\text{NH}_4\text{NO}_3$
  - $\text{Al}_2(\text{CO}_3)_3$
- Write polyatomic ionic compounds?
  - Sodium acetate
  - Calcium phosphate
  - Iron (III) chromate