

## Chemistry 11.1

### Goals:

- Contrast covalent bonding with ionic bonding
- Describe and use the VESPR model when constructing covalent compounds
- Predict names of covalent compounds when given the formulas and formulate the elements and numbers of each from the names

### Bellwork:

- 1) What do these elements have in common: C, O, Br, Cl, N, P, Se, I
- 2) Hydrogen can also be lumped in with this group. Why do you think this is the case

### Plan:

- Review ionic compounds, how opposite charges come together
- Contrast this with covalent bonding, how elements share/fight over the electrons
- Class demo...taking vs sharing
- VESPR model...draw representations of dot structures
- Guided practice: show bonding between C and Cl, O and S, and N and N, O and Cl together
- Naming conventions: uses of prefixes for covalent compounds
- Practice covalent naming (kahoot)

HW: Covalent naming practice worksheet

## Chem 11.2

Goals: Review covalent naming

### Plan:

- Kahoot review: covalent naming
- Polar vs non-polar compounds
  - Compare based on the molecules and which elements are more polar
  - "Tug of War" analogy with polarity of the bonds
- Prelab: paper chromatography with food colors and inks

HW: Read lab, be ready with prelab preparation

## 11.3

Goals: investigate polarities of different molecules through paper chromatography

## Chlorophyll extraction

Name \_\_\_\_\_ Hour \_\_\_\_\_

Safety: This lab does use rubbing alcohol, which is a poison. Food and drink are not permitted in this lab.

Chromatography is a very common technique for the separation and identification of molecules. In this lab, we will separate chlorophylls from spinach leaves. Our first experiment will be to examine the workings of chromatography of ink, before looking at chlorophyll/

Experiment 1.

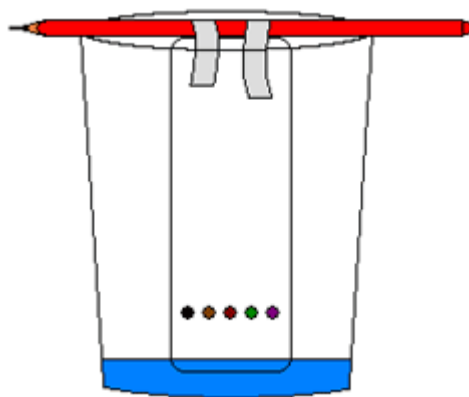
Step 1. Find an empty beaker and pencil.

Step 2. Cut a strip of filter paper approximately 8cm long

Step 3. Tape the filter paper to the pencil so that the bottom of the paper is just above the bottom of the beaker

Step 4. Put several marks in different colors of ink about 2cm above the bottom of the filter paper.

Step 5. Carefully put in enough isopropyl alcohol to your beaker so that the bottom of the paper is soaking but the ink is not. The setup should look like the diagram below.



Step 6. Wait approximately 10 minutes, wait until the ink has separated into colors.

Step 7. Make observations below about the composition of the ink.

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Experiment 2/3:

Set up two other experiments investigating chromatography. However, you must change one variable with each new test (cannot be identical to experiment 1)

Write down the procedures for your two experiments, make sure to note what variable you are changing for each one. Hypothesize how your set-up will affect your results.

Experiment 2:

Methods:

Hypothesis:

Results:

Experiment 3:

Methods:

Hypothesis:

Results:

Post lab questions:

- 1) Polar molecules tend to want to move with the liquid up the paper. Based on this, which colors were the most polar? Which were least polar?
- 2) Were any of the colors a mixture? How could you tell?
- 3) If you had more money in the budget or more time than a single class period, how would you amend your experiments to investigate something else with chromatography? Describe why your investigation would be worthwhile.