

5C – STORE LABELS AND MODEL BUILDING

INQUIRY

Can you identify the chemical compounds on the ingredient lists of common household items?

MATERIALS

- Molecular Model Set
- Variety of household items
- Periodic table

PERIODIC TABLE OF ELEMENTS

essential CHEMISTRY PASCO

Legend:

- atomic number
- symbol
- atomic mass
- name
- alkali metals
- alkaline earth metals
- transition metals
- non-alkali metals
- non-metals
- halogens
- noble gases
- metalloids



BACKGROUND

A variety of chemical compounds can be found around us every day. By inspecting the ingredients list of your snack, food packaging, cleaners or shampoos, you'll find a wide range of chemical compound names included in the mixture held within the container. You will use the common household items available in class to determine which ones contain compounds you may have heard of or experienced in class so far. You will then familiarize yourselves with the chemical structures and properties of these compounds.

SAFETY

Follow these important safety precautions in addition to your regular classroom procedures.

- Use caution with household items.
- Some household items contain chemicals that may be harmful.

PROCEDURE

1. Inspect the ingredients lists of the household items provided by your teacher. Find as many chemical names as indicated by your teacher.
2. Record the chemical formula of the compound in Table 1 on your answer sheet.
3. Identify the household products that have the chemical compounds listed and record them in Table 1.
4. Build a model of the ingredient and draw a diagram of the molecule in Table 1.

PROCEDURE**Molecule Building notes:**

- If all atoms are bonded but there are still empty holes, add more long bonds and bend them as needed to create multiple bonds.
- The short bonds are the least flexible while long bonds are the most flexible.
- Use the purple bonds to indicate that there is an ionic attraction between ions.
- Refer to the Color Key for Molecular Model Set for atoms.
- It is possible to run out of holes for bonds on ionic compounds.
- If an atom is not listed in the color guide found in the Molecular Model Set or in the following table, use the color for an atom found in the same group/family.

Color Key for Molecular Model Set

Color	Element
Black	Carbon
White	Hydrogen
Red	Oxygen
Blue	Nitrogen
Orange	Phosphorus
Yellow	Sulfur
Green	Chlorine
Purple	Sodium

ANALYSIS

Complete the analysis on your answer sheet.

QUESTIONS

Answer the questions on your answer sheet.