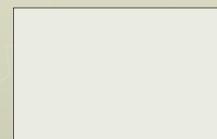


Elements, Compounds & Mixtures

First, fold your paper in half like this.

Not this.



You need three "flaps."

To cut "flaps," cut only the top half of the folded paper.



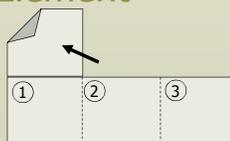
Do not write these numbers on your flaps!

There are three types of problems.

Elements	Compounds	Mixtures
<ul style="list-style-type: none"> • A Pure Substance • In an element, all atoms are identical. • One capital letter; Only one chemical symbol 	<ul style="list-style-type: none"> • A Pure Substance • A compound is a combination of 2 or more elements joined by chemical bonds • 2 or more capital letters; 2 or more chemical symbols 	<ul style="list-style-type: none"> • A blend of two or more kinds of matter, or a combination of pure substances <i>mixed</i> together. • A Mixture of element(s) and/or compound(s)

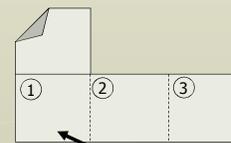
Inside flap 1 – Element

- ▶ You will find all elements on the periodic table.
- ▶ There are about 112-118 "confirmed" elements.



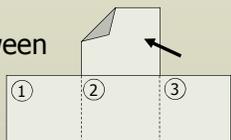
Inside flap 1

- ▶ **Element examples:**
 - He
 - C
 - S or S₈
- ▶ Some elements are diatomic; they occur in nature in groups of two
 - H₂ O₂ F₂ Br₂ I₂ N₂ Cl₂



Inside flap 2 – Compounds

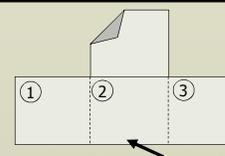
- ▶ What is the difference between a molecule and a compound?



Type of Substance	Can it have two or more types of atoms?	Can it have one type of atom?	Can it be an element?
Molecule	Yes	Yes	Yes
Compound	Yes – it has to!	No	No

Inside flap 2

- ▶ There are millions of compounds!
- ▶ **Compound examples:**
 - Water, (H₂O), H₂O₂
 - CH₃, C₂H₆
 - FeO, Fe₂O₃
- ▶ All compounds are molecules, but not all molecules are compounds.
- ▶ O₂ is a molecule, but it's not a compound.



Inside flap 3

Homogeneous Mixtures



- ▶ These mixtures may look like pure substances because they are completely mixed into a single phase.
- ▶ Also called ***solutions***, contain a solute dissolved in a solvent
- ▶ The solute is soluble in the solvent.
- ▶ Examples: air, salt water, brass, stainless steel

Inside flap 3

Heterogeneous Mixtures



- ▶ These mixtures contain two or more separate phases because the substances do not completely mix.
- ▶ The substances are considered insoluble.
- ▶ Examples: oil and water, chicken noodle soup, salt and pepper, rocky road ice cream, granite, chunky peanut butter