Chem!stry

Name: …… **( )**

Class: ……

Date: …… **/** …… **/** ……

Atoms, Elements Compounds and Mixtures – Worksheet 2

Introduction:

All matter is composed of tiny particles that are in a constant state of motion. The smallest particles are given names such as *proton*, *neutron* and *electron*. These are arranged into slightly larger (but still very small) particles called *atoms*, *ions* and *molecules*. **Figure 1** shows some diagrams that Chemists might use to represent atoms and molecules.

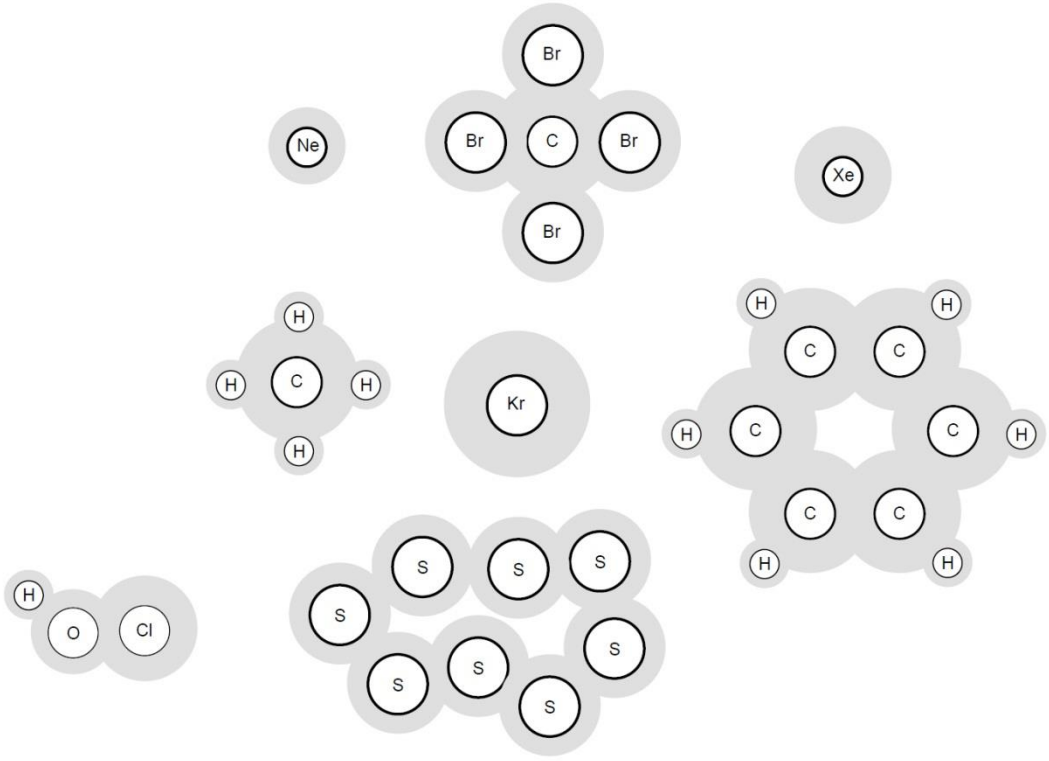


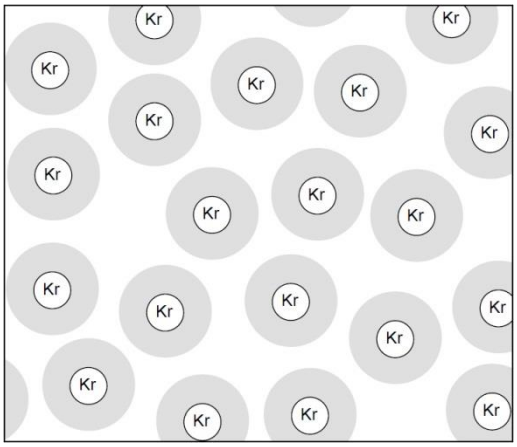
Figure 1. Possible ways that Chemists might use diagrams to represent atoms and molecules.

The letters are symbols that are used by Chemists to represent different atoms. There are many different types of atoms and molecules. The structures of the different chemicals that are shown in **Figure 1** show only a few examples.

Activity Part 1:

On pages 3 and 4 you are presented with 12 different substances. Classify each one as either an *element*, a *compound* or a *mixture*. For mixtures you can elaborate and state what type of mixture it is – *e.g.* it could be a mixture of two elements.

Substance One:



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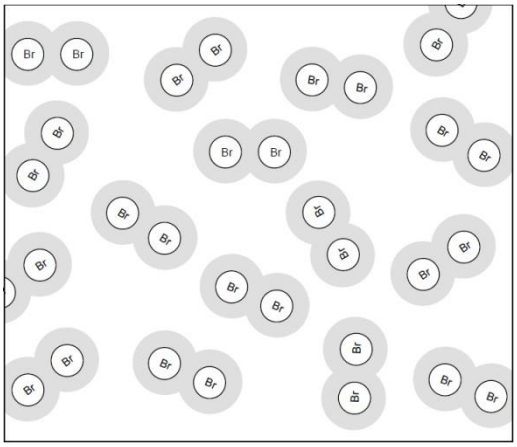

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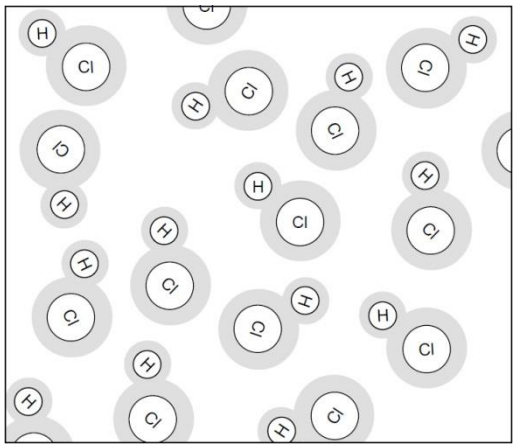

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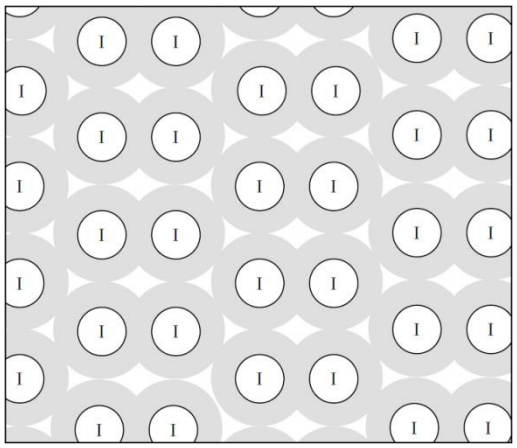

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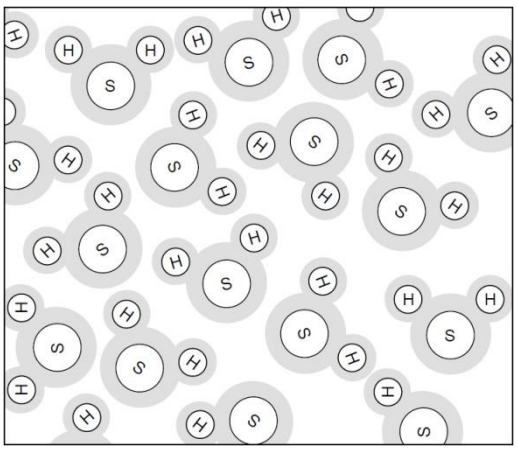

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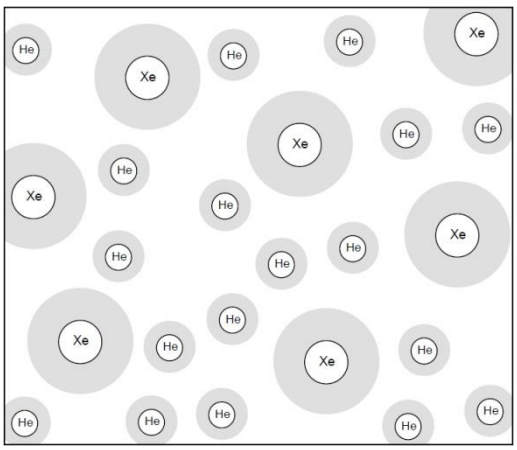

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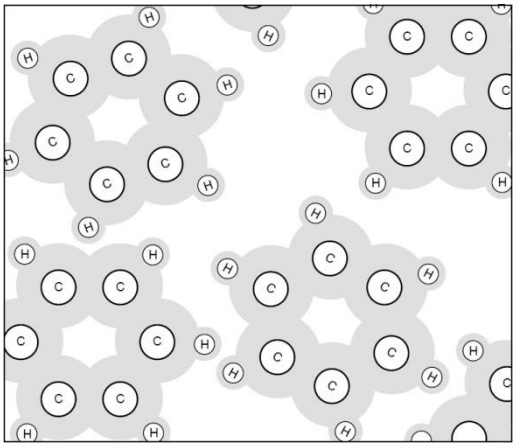

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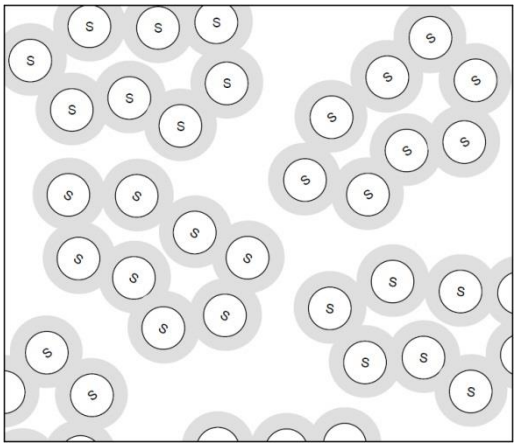

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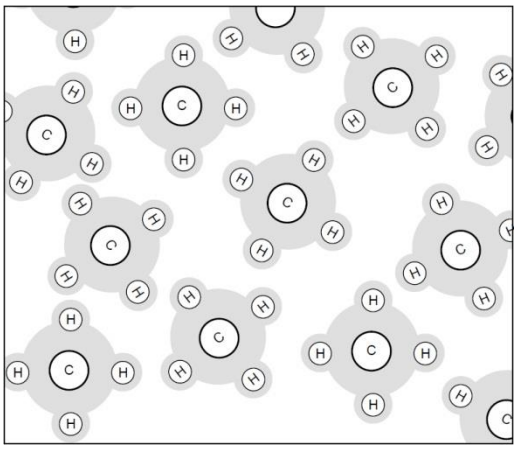

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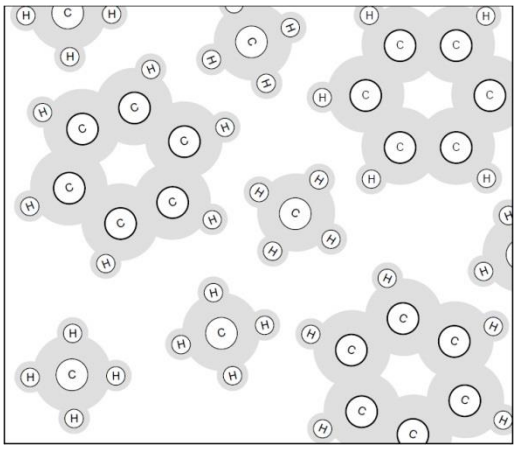

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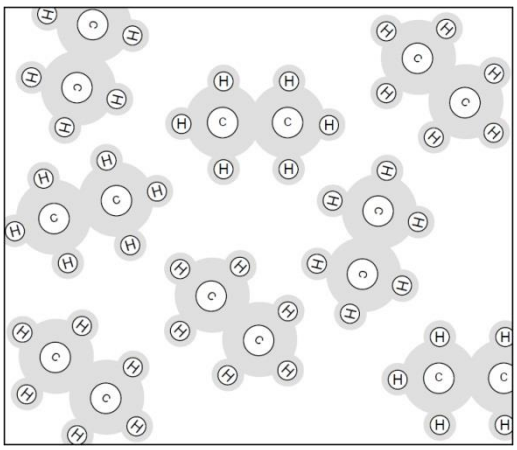

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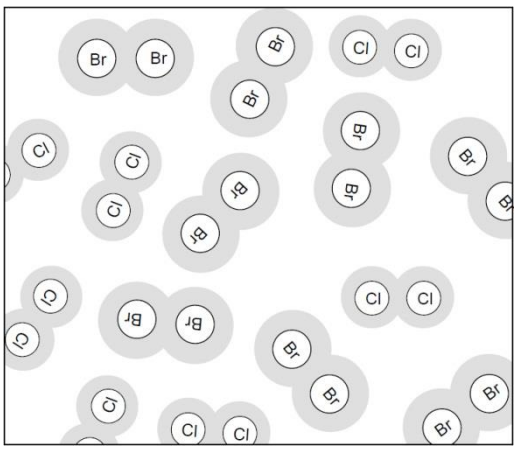

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Activity Part 2:

Reflect on how you classified the 12 different substances on pages 3 and 4. Identify what the substances that you classified as *elements* have in common, and think about the ways in which they are different from *compounds* and *mixtures*. Use this information to define what an *element* is. Repeat this process to define *compound* and *mixture*.

Using clear and concise scientific language, describe what an *element* is:

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Using clear and concise scientific language, describe what a *compound* is:

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Using clear and concise scientific language, describe what a *mixture* is:

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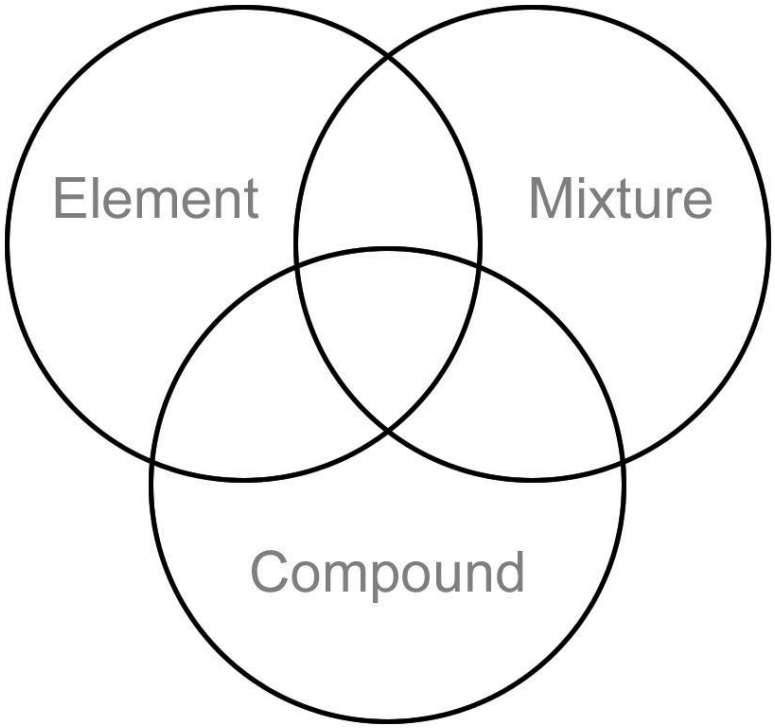
Activity Part 3:

Label the following Venn Diagram to highlight the similarities and differences that exist between *elements*, *mixtures* and *compounds*.



- Based on a document produced by the *Royal Society of Chemistry*, London, England.