

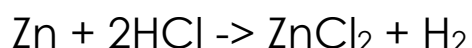
Name \_\_\_\_\_

**Question: Gas production**

Circle the most accurate answer

1. Which of the following statements best describes carbon dioxide gas
  - a. It is a clear, odourless gas that goes 'pop' near a flame
  - b. It is a clear, odourless compound that can put out a flame
  - c. It is a clear, odourless element that can put out a flame
  - d. It is a clear, odourless gas that is lighter than air
2. Which of the following statements best describes oxygen?
  - a. It is a clear, odourless element that is produced by plants
  - b. It is a clear, odourless gas that can put out a flame
  - c. It is a clear, odourless gas that is lighter than air
  - d. It is a clear, odourless compound that is produced by plants
3. Which of the following statements best describes hydrogen?
  - a. It is a clear, odourless gas that is heavier than air
  - b. It is a clear, odourless gas that is used by plants to produce oxygen
  - c. It is a clear, odourless, abundant element that goes 'pop' near a flame
  - d. It is a clear, odourless compound that can put out a flame
4. When you bubble or blow carbon dioxide through lime water it:
  - a. Turns from clear to a yellow colour
  - b. Turns from clear to a blue colour
  - c. Turns from clear to a white colour
  - d. Does not change colour

5. The presence of a CATALYST in a chemical reaction:
- a. Increases the rate of a chemical reaction while undergoing change
  - b. Decreases the rate of a chemical reaction with no change to the catalyst
  - c. Increases the rate of a chemical reaction with no change to the catalyst
  - d. Decreases the rate of a chemical reaction while undergoing change
6. Hydrogen gas is produced via the following reaction; zinc + hydrochloric acid  $\rightarrow$  zinc chloride plus hydrogen. Which of the following statements is true about this reaction?



- a. Zinc chloride is a reactant and hydrochloric acid is the source of the hydrogen
- b. Hydrogen is a product, zinc is a reactant and hydrochloric acid is the source of the hydrogen
- c. Zinc is a product and zinc chloride is a reactant
- d. Hydrochloric acid is a product and zinc chloride is a reactant

7. Which of the following statements best describes a FAIR TEST?
- a. There are three (3) variables involved; uncontrolled, dependent and co-dependent
  - b. Requires at least TWO factors to be changed at a time while keeping all other conditions the same
  - c. Requires ONE factor to be changed at a time while keeping all other conditions the same
  - d. Requires ONE factor to be changed at a time while changing all other conditions
8. When graphing your data which of the following statements is most correct
- a. The dependent variable is measured on the horizontal axis
  - b. The dependent variable is measured on the vertical axis
  - c. The independent variable is measured on the vertical axis
  - d. Both a and c are correct

### Question Gas Production

When collecting gas released from a chemical reaction it is collected by a method called the **Downward displacement of water**

Chose from the following to label the apparatus in Figure 1

Test tube, rubber tubing, ice cream container, marble chips, water, rubber stopper, bench, hydrochloric acid

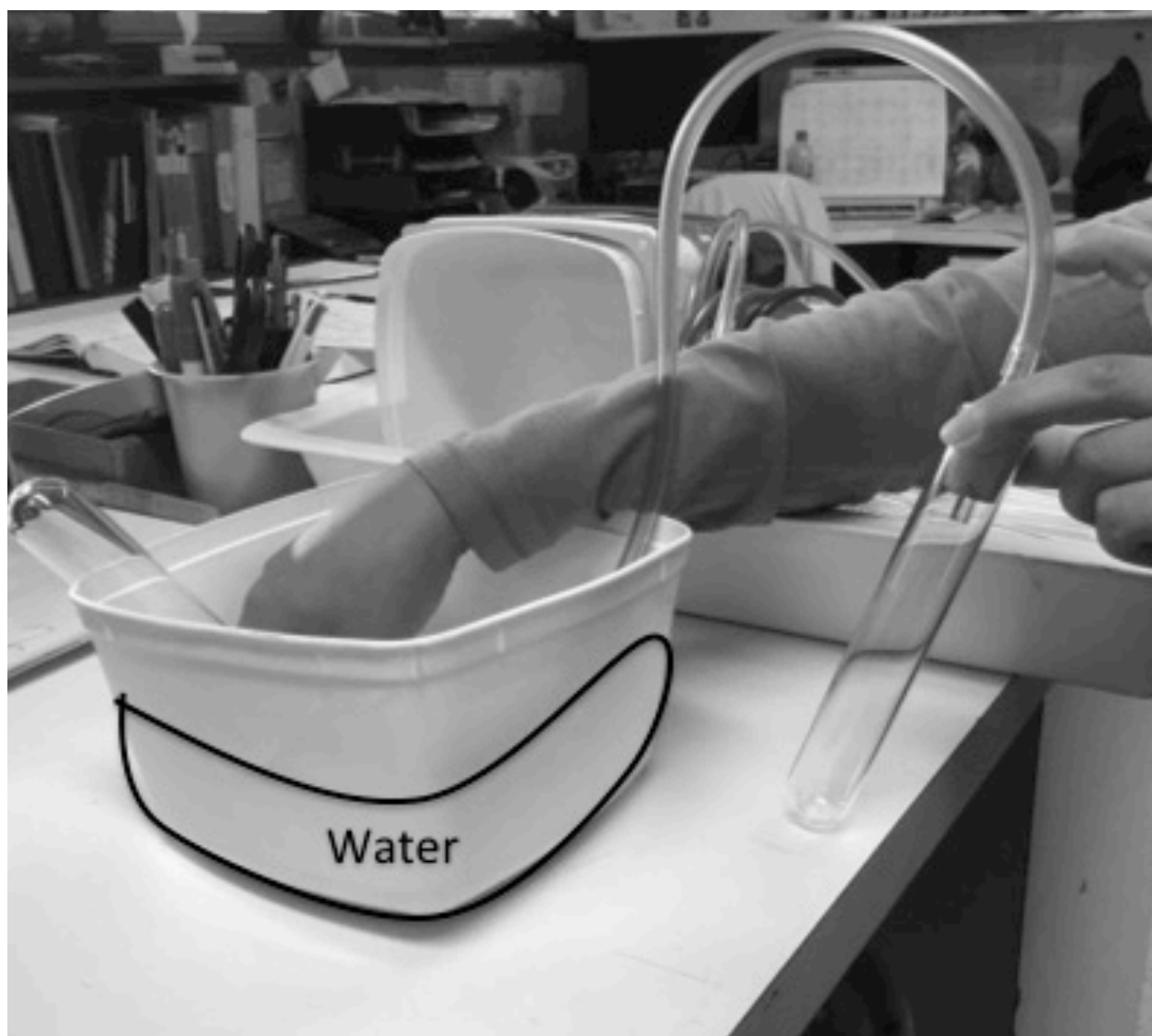




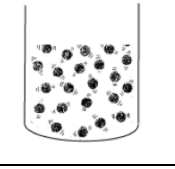
Figure 1

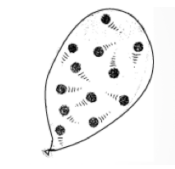
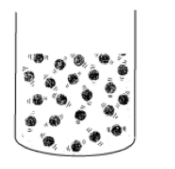

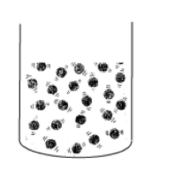
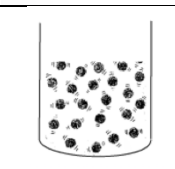
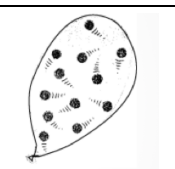
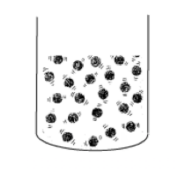

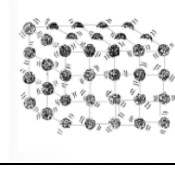
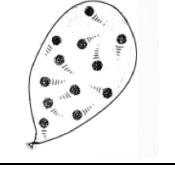
**Question: Kinetic Theory of matter**

Particles in all phases of matter vibrate.

Choose from the following to **fill** in the gaps in the following Tables.

Gas, solid, slow, fast, liquid, really fast, melting, evaporation, freezing, condensation, sublimation

	Physical State	Particle movement
		
		
		

	Process
 → 	
 → 	
 → 	
 → 	
 → 	

### Question: Atoms and Elements

Answer the following questions with either **True** or **False**

1. An Element is a substance made up of MANY types of atoms	
2. Sulphur is an element	
3. Zinc sulphide is an element	
4. Metals are malleable and ductile	
5. Non-metals conduct electricity	
6. Carbon is a metallic element	
7. Non-metals are brittle	
8. Metals conduct heat	

### Question: Molecules and Mixtures

Fill in the blanks in the following Figure 2.

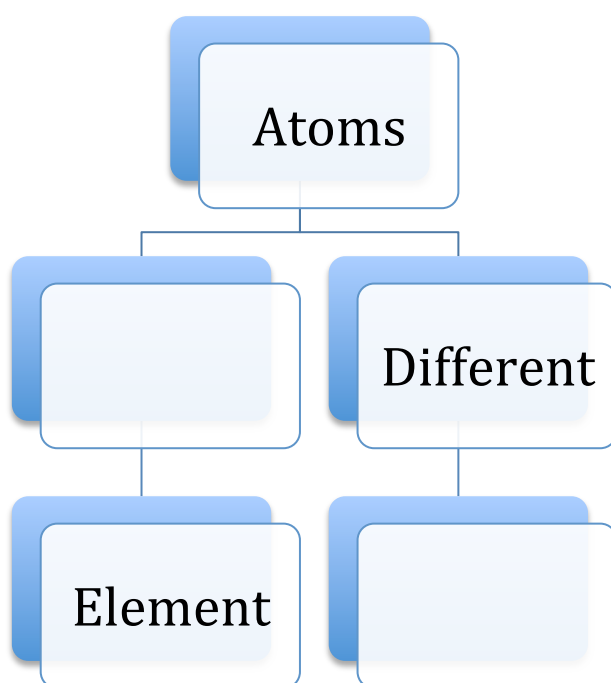
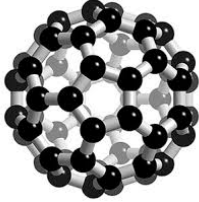


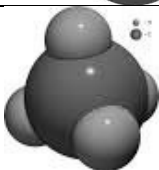
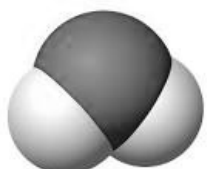
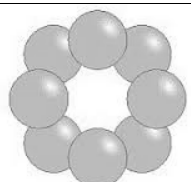
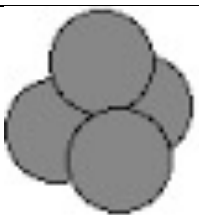
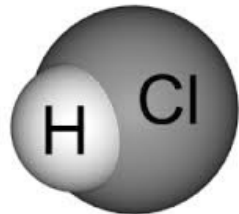


Figure 2

### Question: Molecules and Mixtures

State if the following substances are Molecular Elements OR Molecular Compounds

 C <sub>60</sub>	
 CO <sub>2</sub>	
	
 CH <sub>4</sub>	
 H <sub>2</sub> O	
 S <sub>8</sub>	
 P <sub>4</sub>	
	

### Question: Iron and Sulphur



**Figure 3 Mixture of iron and sulphur (left) and Iron and sulphur heating (right)**

Answer the following questions about iron and sulphur

1. Explain how you could separate the iron and sulphur mixture (Figure 2).

Include what you understand about mixtures in your answer.

2. Is the heated iron and sulphur a Mixture or a Compound. Give a reason for your answer that includes what you know about chemical changes. Include a WORD equation of what is happening.

**Question Chemical Formula**

Complete the Table with the number of atoms of each element in the molecule.

Name	Formula	Sodium atoms (Na)	Hydrogen atoms (H)	Carbon atoms (C)	Sulfur atoms (S)	Oxygen atoms (O)	Nitrogen atoms (N)	Chloride atoms (Cl)	Phosphorous atoms (P)
Glucose	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>								
Sea Salt	NaCl								
Ammonia	NH <sub>3</sub>								
Formic acid	C <sub>2</sub> H <sub>3</sub> COOH								
Hydrochloric Acid	HCl								
Carbon Dioxide	CO <sub>2</sub>								
Water	H <sub>2</sub> O								
Vinegar	CH <sub>3</sub> COOH								
Bicarb Soda	NaHCO <sub>3</sub>								
Methyl alcohol	CH <sub>3</sub> OH								
Nitric acid	HNO <sub>3</sub>								
Energy molecule ATP	C <sub>10</sub> H <sub>16</sub> N <sub>5</sub> O <sub>13</sub> P <sub>3</sub>								
Insulin	C <sub>256</sub> H <sub>387</sub> N <sub>65</sub> O <sub>79</sub> S <sub>6</sub>								

### Question: Ionic Compounds

1. When a metal atom binds chemically to a non-metal atom this is called a \_\_\_\_\_ compound.
2. The non-metal atom has a name change. The atom iodine changes to \_\_\_\_\_.
3. If zinc binds to chlorine you get the compound \_\_\_\_\_.
4. Copper sulphide is made up of \_\_\_\_\_ atoms bound to \_\_\_\_\_ atoms.
5. When lead binds to bromine you get the compound \_\_\_\_\_.
6. Potassium iodide is made up of \_\_\_\_\_ atoms bound to \_\_\_\_\_ atoms.

### Question: Hypotheses

Carbon dioxide is a pollutant (green house gas). Use all the information learnt about carbon dioxide production, uses and detection to design an experiment that will be able to detect if carbon dioxide is being produced in an underground cave that you want to explore. Write an hypothesis.

## Question: The Periodic Table

Answer the following questions

Periodic Table of the Elements																	
1	H	2											13	C	N	O	18
2																	He
3	Na	Mg	3	4	5	6	7	8	9	10	11	12				S	Cl
4	K	Ca						Fe			Cu	Zn					
5																	

Figure 4 Periodic Table

1. Which period is nitrogen found in? \_\_\_\_\_
2. What substance is represented by Mg? \_\_\_\_\_
3. What group is copper found in? \_\_\_\_\_
4. Which side of the periodic table are the metals found? \_\_\_\_\_
5. What period is calcium found in? \_\_\_\_\_
6. What substance is represented by K? \_\_\_\_\_
7. Is hydrogen a metal or non-metal? \_\_\_\_\_
8. If you combine sodium and chloride what ionic compound do you end up with? \_\_\_\_\_
9. What group is sulphur found in? \_\_\_\_\_
10. What group is zinc found in? \_\_\_\_\_
11. When you combine hydrogen and oxygen what molecule do you get?  
\_\_\_\_\_

12. If we know that the air we breathe is 70% nitrogen and the elements get heavier the further down the periodic table that are found, use this information to explain why helium is often used in balloons to make them float higher?