

Lockerbie Academy



S1 Science

Elements, Compounds and Mixtures

Homework Booklet



Homework 1

From Lesson 1- Research and Design



Use the **internet** or **books** from a library to research the element below (Your teacher will give you an element research)



Make a data card showing the following information about your element:

- Name and chemical symbol 2
- Melting and boiling points 2
- Use 1
- What are the properties of this element? 2
- What other information have you found out about your element? 1

Homework 2

Chemical Symbols

- Write the title '*Chemical Symbols Homework*' and today's date in your notes. Underline them with a ruler.
- Copy the table below into your jotter using a ruler.
- Use the periodic table in your jotter notes to fill in the missing symbols and names of elements in the table.

Element name	Chemical Symbol
Oxygen	
Helium	
	Mg
	H
Carbon	
* Tin	
	Cl
* Sodium	
	Kr
*	Ag
* Lead	

11

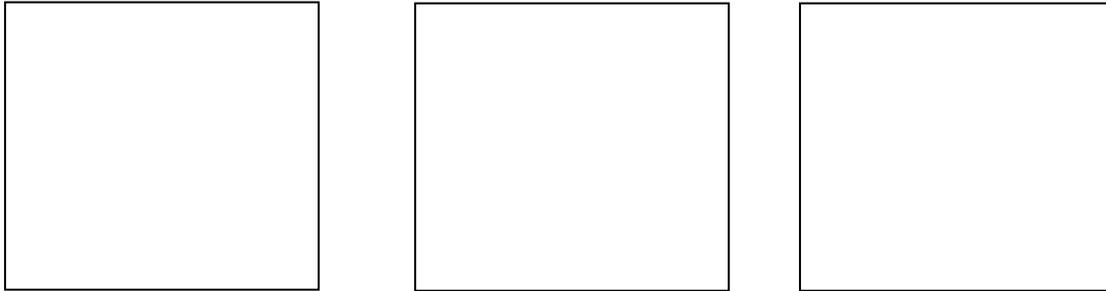
- Four elements in the table above are marked with an '*'. Choose one of these elements and find out why it has an odd chemical symbol.

1

Homework 3

From Lessons 3, 4 & 5

In the boxes below, draw three diagrams to show how particles are arranged in a solid, a liquid and a gas.



Solid

liquid

gas

3

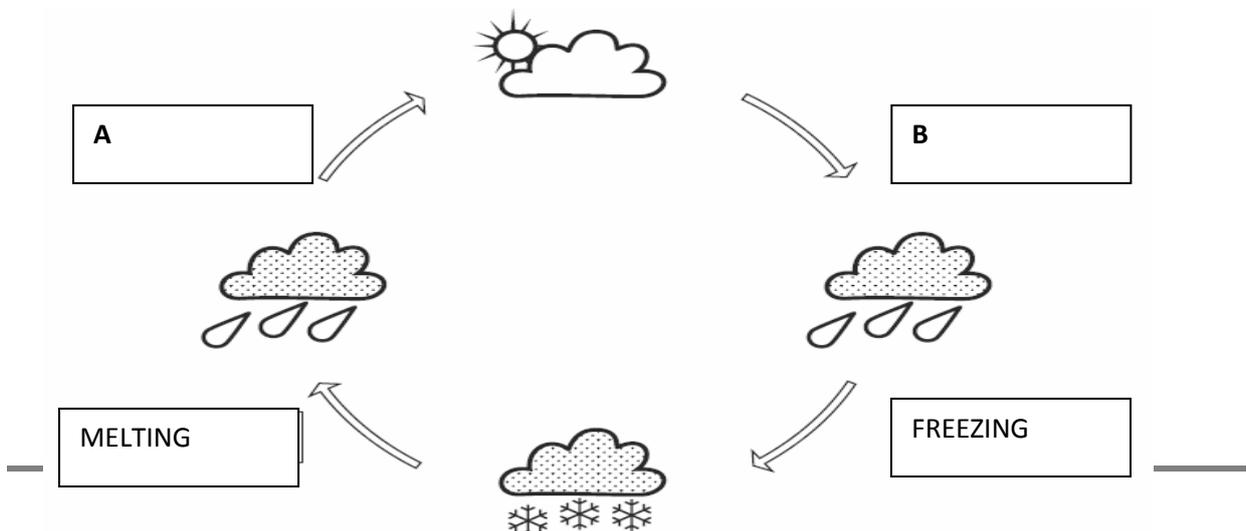
2. Copy and complete the table below by putting ticks in the boxes that describe each state of matter. The first one has been done for you.

State of Matter	Particles Close Together	Particles Far Apart	Arranged in Rows	Not Arranged in Rows
Solid	✓		✓	
Liquid				
Gas				

2

3. Complete (A, B) in the diagram to show the missing processes when matter changes state.

2



Look at the melting and boiling points data in the table below:

Substance	Melting point ($^{\circ}\text{C}$)	Boiling point ($^{\circ}\text{C}$)
Aluminium	660	2467
Ice	0	100
Alcohol	-117	79
Iron	1535	2750
Copper	1083	2567
Polythene	110	no data
Mercury	-39	357

1. Which substance in the table has the **lowest melting** point? 1
2. Which substance has the **highest boiling** point? 1
3. In cold weather, which freezes first, water or alcohol? 1
4. Room temperature is about 25°C . Which of the substances in the table is a liquid at this temperature? 1
5. Why do you think there is 'no data' for the boiling point of polythene? 1
6. A piece of copper metal is put into an oven at a temperature of 1900°C . What will happen to the metal? 1
7. If the oven temperature is increased to 3000°C what will happen to the copper? 1

Homework 4

From Lesson 9 - Solutes, Solvents & Solutions



1. If you dissolve salt in water, the water is the:
 - a. Solute
 - b. Solvent
 - c. Solution

1

2. Sparkling water consists of carbon dioxide dissolved in water. Which answer describes the carbon dioxide in this situation?
 - a. Solute
 - b. Solvent
 - c. Solution

1

3. Acetone is used to remove nail polish because the polish:
 - a. Is insoluble in acetone
 - b. Dissolves in acetone but not in water
 - c. Dissolves in water but not in acetone

1

4. As the temperature of water rises, the solubility of salt:
 - a. Increases
 - b. Decreases
 - c. Stays the same

1

5. As the temperature of water rises, the solubility of sugar:
 - a. Increases
 - b. Decreases
 - c. Stays the same

1

6. Write a short paragraph describing what happens to salt when it is put into water.

2

Homework 5

Lesson 12 - Research



Choose one of the methods of separating mixtures you have seen or used in Chemistry (using a magnet, filtering, evaporation and distillation).

Use the internet or the library to research an everyday use or an industrial use for your chosen separation technique.

Design a poster to show what sort of mixtures your chosen method is used to separate and how the method works.



Homework 6

From Lesson 15 - EVALUATING

After carrying out the experiment to separate salt from sand write an evaluation about your work that lesson. Include your answers to the following questions in your report:

- What did you do?
- What did you find out?
- What went well?
- What did you find difficult? - were you successful at overcoming your difficulties?
- What would you change or do differently next time?
- Is there anything else you thought about before / after / during the lesson that is relevant and you want to mention?