

Review 1

Chemistry - Key Stage 3

Particles - Lesson 7

Miss Mason



Review questions

1. Identify the 3 states of matter and the 4 changes of state.
2. Define diffusion.
3. Identify 2 properties of a solid and provide reasons for these properties.
4. Identify 2 properties of a liquid and provide reasons for these properties.
5. Identify 2 properties of a gas and provide reasons for these properties.
6. Describe how gas pressure is caused in a sealed container.
7. What is meant by 'conservation of mass'?
8. Describe the structure of a word equation.
9. Describe how temperature can affect the rate of diffusion.
10. Explain why water is a liquid at room temperature.



Key word practise

- Match up the following key words to their correct definition

1. Melting

2. Condensing

3. Diffusion

4. Solute

5. Solvent

6. Reactants

7. Altitude

a) Substances that we start off with in a chemical reaction (found on the left hand side of the arrow)

b) The process in which a solid turns into a liquid

c) A substance that others can be dissolved in

d) The movement of particles from an area of higher concentration to an area of lower concentration

e) The process in which a gas turns into a liquid

f) The height of an object in relation to sea level

g) A substance that can be dissolved



Key word practise

- Match up the following key words to their correct definition

1. Boiling

2. Freezing

3. Products

4. Solution

5. Kinetic

a) Movement

b) The substances that we end up with in a chemical reactions due to new combination of particles (found on the right hand side of the arrow)

c) The process in which a liquid turns into a solid

d) The process in which a liquid turns into a gas

e) Produced from the combination of a solute being dissolved in a solvent



Copy and complete

- As we decrease the volume of a container, the particles are forced to move _____.
- This means the particles have less space to move around in and are going to have more frequent c_____ with each other and the walls of their c_____.
- This therefore increases the amount of p_____ being exerted.



Exam-style question (gas pressure)

Maria has a bottle of air freshener. Most of the contents of this bottle is liquid but some of it is gas.

Maria knows that these gas particles exert a pressure to the walls of this bottle.

a) ***Explain how the gas particles cause this pressure.***

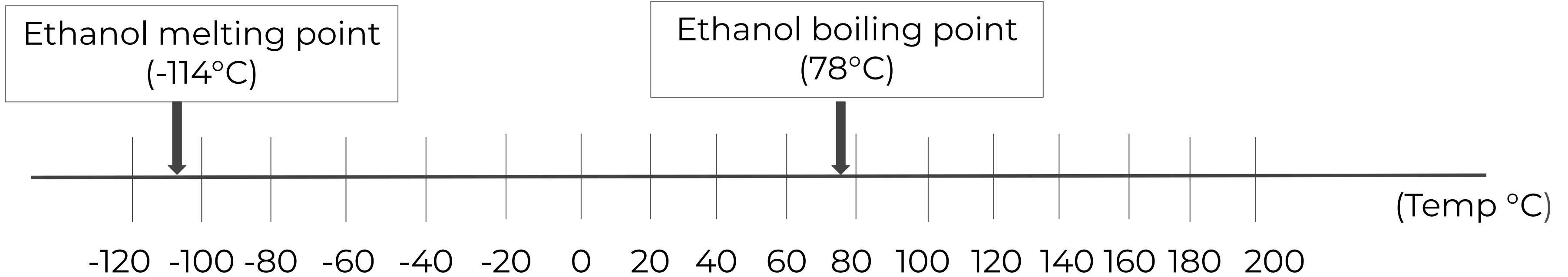
b) ***Explain why, if we were to reduce the volume of this air freshener bottle, the pressure inside would increase.***



Melting and boiling points

The melting and boiling point of ethanol are marked on the scale below.

a) Draw arrows on the scale to show the temperatures at which water melts and boils



b) When water is a gas, what is the physical state of ethanol?

c) When ethanol is a solid, what is the physical state of water?

d) What is the physical state of ethanol at -40°C?



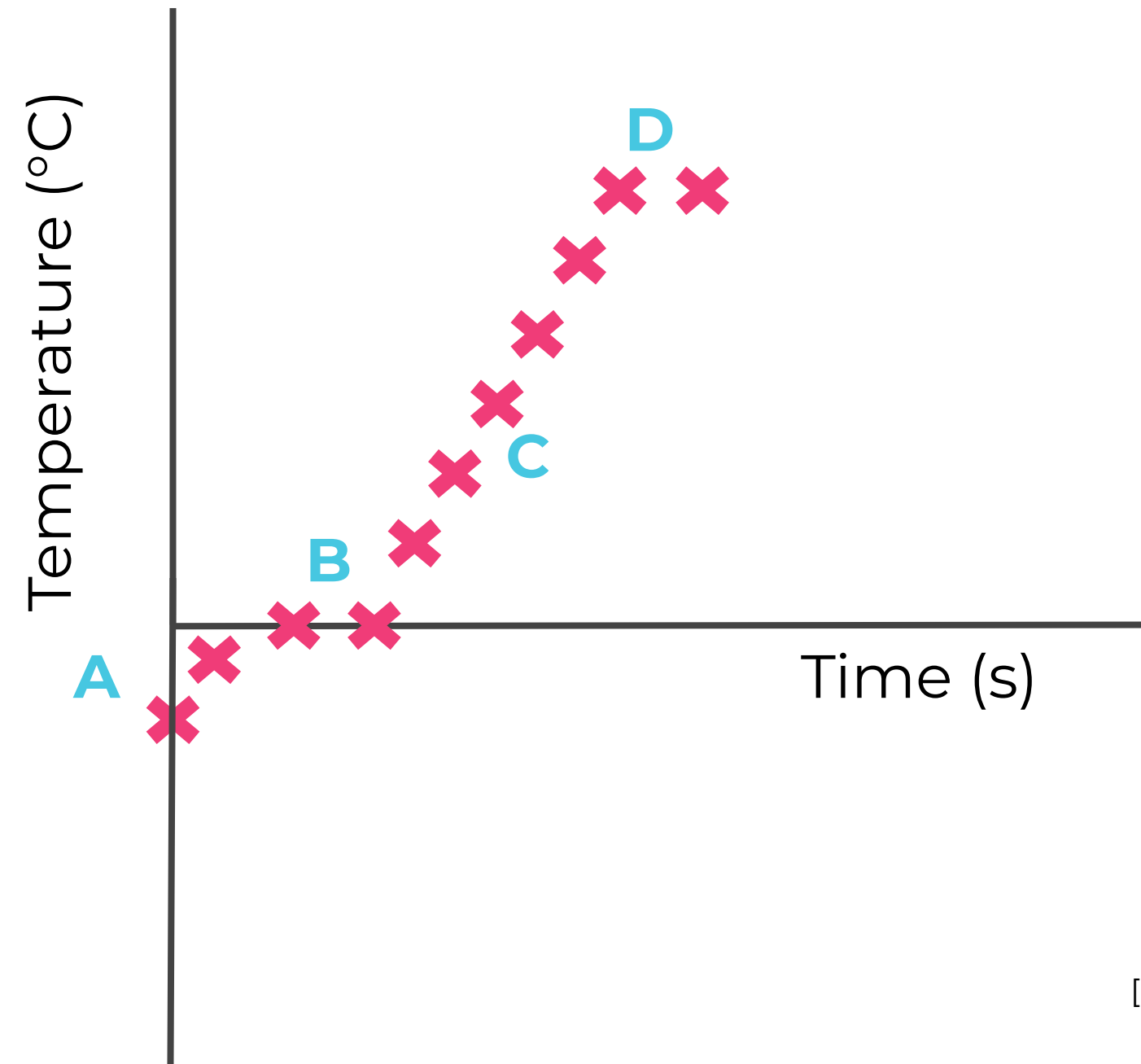
Exam-style questions (changes of state)

An ice cube was placed into a beaker and heated over a 20 minute period. The temperature of the ice was measured every 30 seconds and recorded.

The ice cube started off at a temperature of -10°C and finished at 103°C .

Use this information and the graph to help you answer the following questions.

- a) What was the temperature difference between the start and end of the experiment?
- b) Which letters on the graph show:
- When melting occurs
 - When boiling occurs
 - When the substance is a liquid



[Source: Oak]



Exam-style questions (changes of state)

Substance	Melting point (°C)	Boiling point (°C)
Nitrogen	-210	-196
Sodium	98	883
Oxygen	-218	-189
Ethanol	-114	78

Use the information in the table to help you answer these questions.

(You may use the name of an element more than once and some questions have more than one correct answer)

- a) Which element is liquid at 60°C?
- b) Which element is a solid at 20°C?
- c) Which element is a gas at -193°C?
- d) Which element is a solid at at -220°C?

