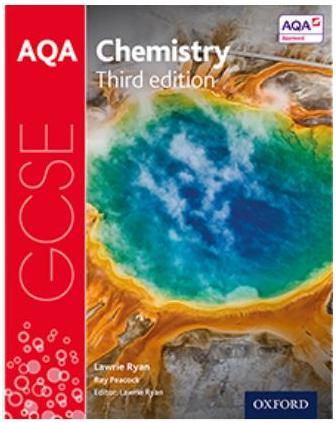
Extended Homework Task

Chemistry C3 Structure and bonding

Aiming for Grade 8

Name ……

Please hand in a completed printed version at the end of the topic



The online text book access to support this homework can be accessed through your Kerboodle account at www.kerboodle.com.

The username is your first initial and sir name (no gap).

If you have not accessed the book before the password will be the same as your username. If you have logged on before you will have changed the password to your own choice.

Click onto the science 9-1 tile and then onto the digital book.

Resources to support this homework can be found in the online student book

- **Structure and bonding pages 36 to 61**

Aims

This activity will give you practice in using experimental results to identify the bonding and structure in unknown substances.

Learning outcome

After completing this activity, you should be able to:

- Analyse and explain experimental results in detail to decide what bonding and structure must be present in unknown substances.

Task

1 Use the experimental results below for substances **A**, **B**, and **C** to decide on the bonding and structure for each one. Write your answers below.

	Appearance	Dissolves in water?	Conducts electricity?	Melting point in °C
substance A	white powder	yes	yes: in aqueous solution and when molten	3000
substance B	colourless gas	no	no	–85
substance C	black powder	no	no	1200

substance **A**: _____ *(1 mark)*

substance **B**: _____ *(1 mark)*

substance **C**: _____ *(1 mark)*

2 Write a **<u>detailed explanation</u>** of how you determined the answers for substances **A**, **B**, and **C**.

You should make sure you explain in detail the different types of bonding and structure that exist, and also why they would give the results shown in the table.

Where possible you should use particle diagrams to illustrate your explanations.

Substance A *(3 marks)*

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Substance B *(3 marks)*

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Substance C *(3 marks)*

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3 Name a substance that behaves in an anomalous way to other substances that have the same type of bonding and structure. How is it anomalous? *(1 mark)*

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4 Explain why this unusual behaviour occurs. Include a diagram in your answer. *(3 marks)*

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