

Metallic bonding

Learning objectives

- 1 Describe the metallic bonding model using words and diagrams.
- 2 Explain how the metallic bonding model leads to the common properties of metals.
- 3 Develop your extended writing skills.

Introduction

You can probably list many of the properties of metals. In this activity, you will describe the metallic bonding model and explain how this leads to particular properties.

Instructions

1. Stick the structure strip in the margin of your exercise book/paper.
2. Follow the prompts to write a summary of the metallic bonding model. You might need to use a textbook, revision guide or website to help you. Take care to write in full sentences, describing the question within your answer and using appropriate keywords.
3. When you have finished the structure strip, you should have a good knowledge of the metallic bonding model. Now tackle the question below to apply your knowledge to a new context.

Keywords

You may wish to use some of the following words in your responses:

Metallic, ion, electrostatic, malleable, conductor, delocalised.

Follow-up question

Copper is used to make saucepans. Use your understanding of the metallic bonding model and general knowledge to explain this use of copper.

4 marks

Structure strip Metallic bonding	Structure strip Metallic bonding	Structure strip Metallic bonding	Structure strip Metallic bonding	Structure strip Metallic bonding
Draw a labelled diagram of the metallic bonding model and write a short description.	Draw a labelled diagram of the metallic bonding model and write a short description.	Draw a labelled diagram of the metallic bonding model and write a short description.	Draw a labelled diagram of the metallic bonding model and write a short description.	Draw a labelled diagram of the metallic bonding model and write a short description.
Explain how the charge on a metal ion can be found from its electronic structure and therefore the periodic table. Describe how this influences the metallic model.	Explain how the charge on a metal ion can be found from its electronic structure and therefore the periodic table. Describe how this influences the metallic model.	Explain how the charge on a metal ion can be found from its electronic structure and therefore the periodic table. Describe how this influences the metallic model.	Explain how the charge on a metal ion can be found from its electronic structure and therefore the periodic table. Describe how this influences the metallic model.	Explain how the charge on a metal ion can be found from its electronic structure and therefore the periodic table. Describe how this influences the metallic model.
Metals generally have a high melting point. How does the metallic bonding model explain this property?	Metals generally have a high melting point. How does the metallic bonding model explain this property?	Metals generally have a high melting point. How does the metallic bonding model explain this property?	Metals generally have a high melting point. How does the metallic bonding model explain this property?	Metals generally have a high melting point. How does the metallic bonding model explain this property?
Metals can conduct electricity. How does the metallic bonding model explain this property?	Metals can conduct electricity. How does the metallic bonding model explain this property?	Metals can conduct electricity. How does the metallic bonding model explain this property?	Metals can conduct electricity. How does the metallic bonding model explain this property?	Metals can conduct electricity. How does the metallic bonding model explain this property?
Metals are malleable. Define the term malleable. How does metallic bonding explain this property?	Metals are malleable. Define the term malleable. How does metallic bonding explain this property?	Metals are malleable. Define the term malleable. How does metallic bonding explain this property?	Metals are malleable. Define the term malleable. How does metallic bonding explain this property?	Metals are malleable. Define the term malleable. How does metallic bonding explain this property?
Metals are thermal conductors. How does metallic bonding explain this property?	Metals are thermal conductors. How does metallic bonding explain this property?	Metals are thermal conductors. How does metallic bonding explain this property?	Metals are thermal conductors. How does metallic bonding explain this property?	Metals are thermal conductors. How does metallic bonding explain this property?