Metallic bonding and the structure of iron

Learning objectives

1. Describe the bonding in iron.
2. Explain the properties of iron using ideas about bonding.

True or false?

These statements refer to the structure and properties of iron.

Read each statement carefully. Put a tick in one of the boxes to show whether you think it is true or false.

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| **No.** | **Statement** | **True or false?** | **Group answer** |
| 1 | Iron has a type of bonding called metallic bonding. |  |  |
| 2 | The structure of iron is an example of a giant molecule. |  |  |
| 3 | In the structure of iron there are positive ions. |  |  |
| 4 | The atoms in iron are held together by ionic bonds. |  |  |
| 5 | In the structure of iron, some electrons can move round the solid. |  |  |
| 6 | If iron is heated to a very high temperature, it will become a gas. |  |  |
| 7 | Iron can conduct electricity because iron atoms can slip over their neighbours and move through the solid. |  |  |
| 8 | Iron conducts electricity because it contains a ‘sea’ of electrons. |  |  |
| 9 | Iron expands when it is heated because iron atoms get bigger. |  |  |
| 10 | Iron is a silvery grey metal because iron atoms are silvery grey. |  |  |