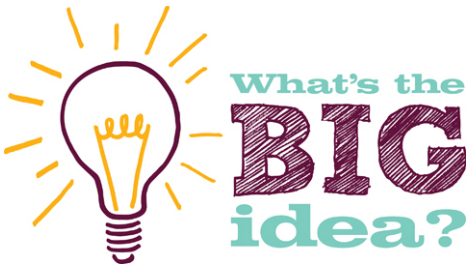
You need to know the content of this sheet. 100%

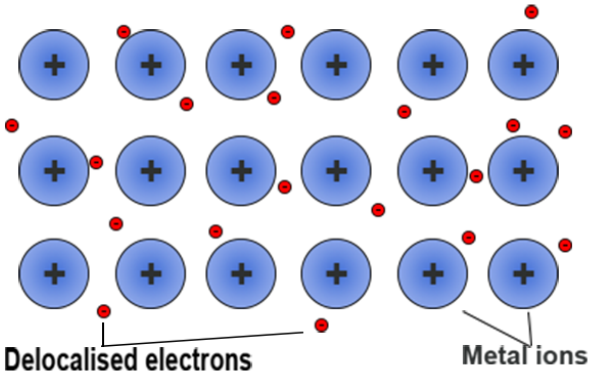
100% Sheet
METALLIC BONDING

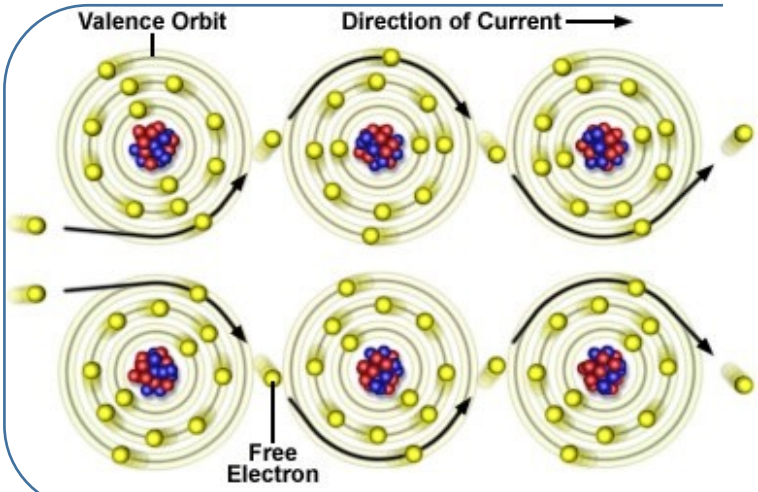


Matter

All material in the Universe is made of very small particles.

Metallic bonding is a lattice of POSITIVE METAL IONS surrounded by a sea of DELOCALISED ELECTRONS



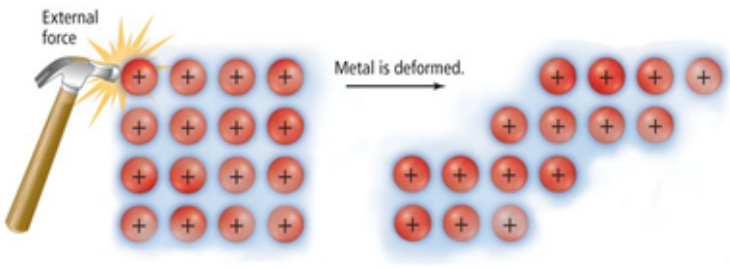


Metals can conduct electricity as a solid because they have CHARGE THAT CAN MOVE.
The negatively charged outer electrons are delocalised and free to move.
The negative electrons will move towards the positive terminal of a power source

Unlike the ionic lattice, Metallic bonding is a lattice of POSITIVE METAL IONS surrounded by a sea of DELOCALISED ELECTRONS which allows the lattice to be malleable and change shape.

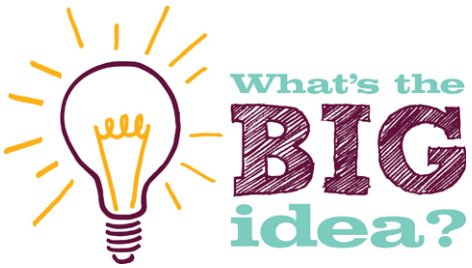
Metallic Bonds

Metals are malleable because they can be hammered into sheets. Metals are ductile because they can be drawn into wires. Mobile electrons surrounding positively charged nuclei make metals good conductors of electricity and heat. As the number of delocalized electrons increases, so does hardness and strength.



You need to apply your knowledge

100% Sheet
METALLIC BONDING



Matter

All material in the Universe is made of very small particles.

Copper is useful because it is malleable, ductile and a very good conductor of electricity. Copper is a typical metal.
Describe the structure and bonding in a metal. You may wish to draw a diagram to help you to answer this question.

Explain why copper is malleable by referring to its structure. Give a use for copper that relies on its malleability

Explain why copper is used in electrical wiring by referring to its structure

When metal corrode they react with oxygen from the air. Why does corrosion alter the properties of metals?