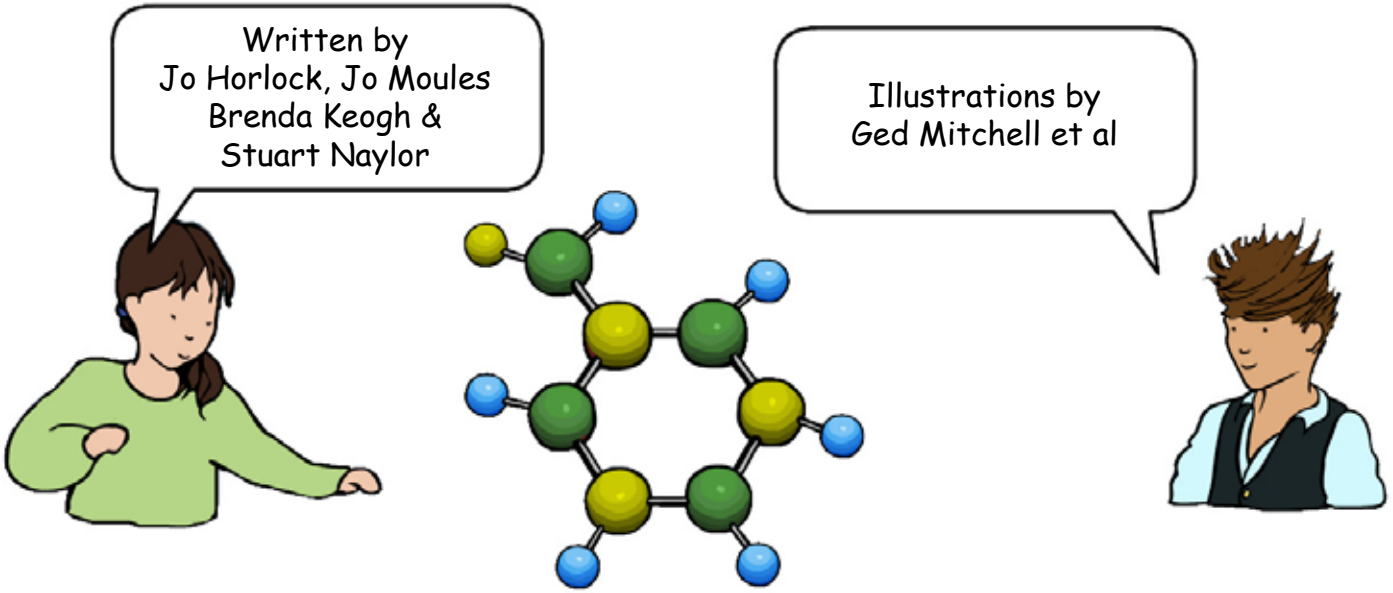
Science Concept Cartoons®

Set 2 - Sample Set 1



Produced by Millgate House Education

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Science Concept Cartoons® Set 2 - Sample Set

Concept Cartoons® are cartoon-style drawings that put forward a range of viewpoints about a particular situation. They are designed to intrigue, provoke discussion and stimulate thinking. Concept Cartoons make concepts problematic and provide a stimulus for developing ideas further.

Each Concept Cartoon can be used to stimulate a free standing discussion and enquiry. Alternatively, the Concept Cartoons can be linked together to form a larger topic or to create a project related to science.

Some Concept Cartoons may look as if they are too easy for some learners, but their deceptive simplicity can stimulate discussion about more challenging concepts and can often reveal some basic misunderstandings. Learners can create their own Concept Cartoons as a way of assessing and reviewing their current understanding.

Concept Cartoons do not always have a single right answer.

Each Concept Cartoon has support material, including ideas for follow up and some possible answers.

* Concept Cartoons are normally used to promote a group discussion.
* Ask learners to discuss why each character in the Concept Cartoon might hold their particular idea. Do they have any other ideas that might go in the blank speech bubble?
* Avoid being judgemental when learners are sharing their ideas. The uncertainty created by Concept Cartoons is productive.
* Provide an opportunity for learners to explore, challenge or consolidate the ideas raised through the Concept Cartoon(s).
* Provide time for learners to share their ideas.
* Have they changed their minds and why?

To learn more about Concept Cartoons and how they are used, visit:
www.millgatehouse.co.uk **Twitter: @MillgateHouseEd**

When printing out the Concept Cartoons please select the landscape setting on your printer options

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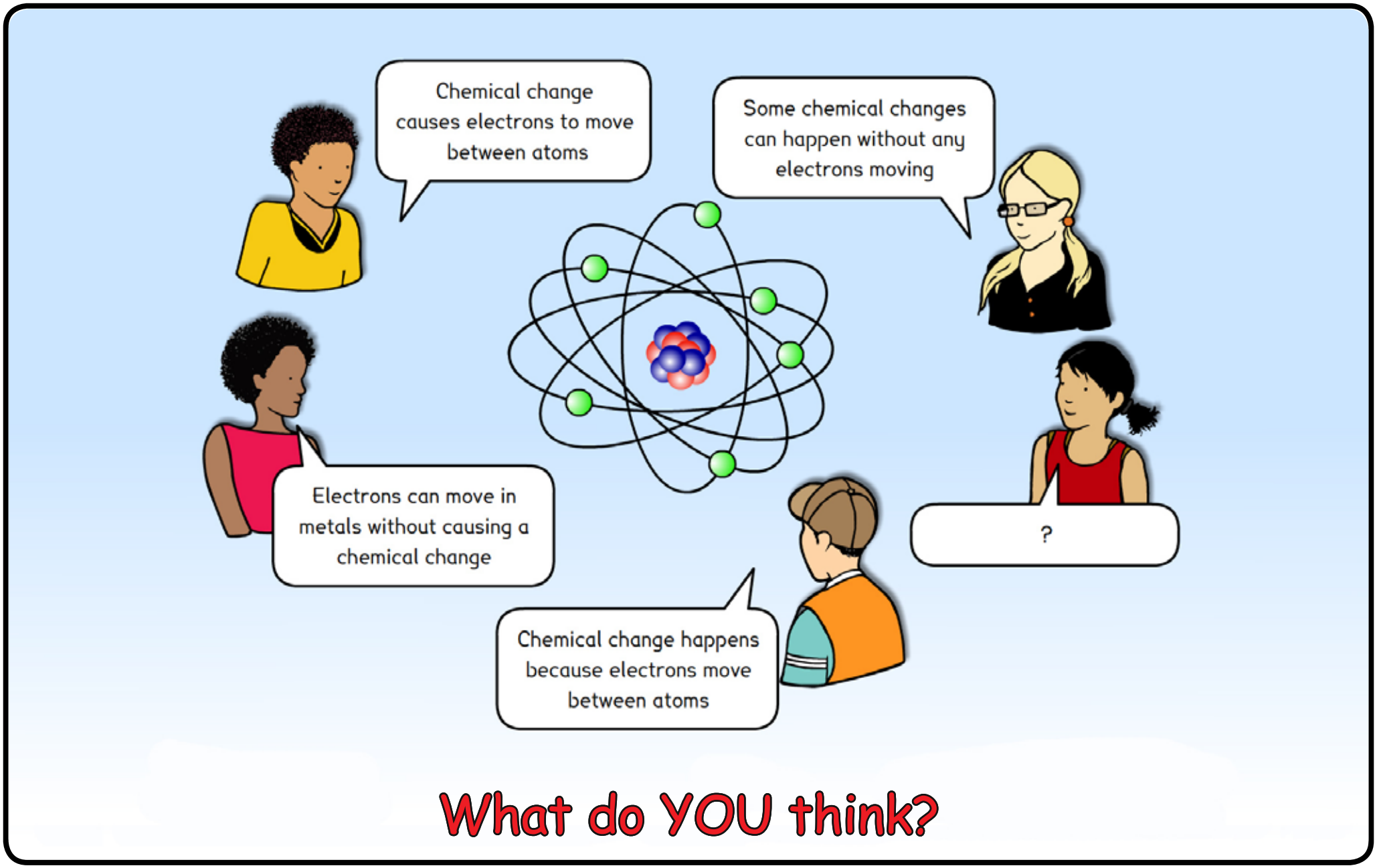
5.8 Electrons and chemical reactions



Follow up

Observe some chemical reactions, such as electrolysis of water or a candle burning. What are the chemical changes, and how do you know that a chemical change is happening? Talk about what makes chemical changes different from physical changes. Do some research to find out more about electrons and chemical change. The expression valence electrons may help you. Discuss why you think groups of elements in the periodic table have similar properties and react in similar ways. What do you think would happen in an electrical circuit if the movement of electrons causes a chemical change in the metal?

Ideas

Atoms are joined together by chemical bonds to form molecules. A chemical bond is formed when electrons are shared between atoms (covalent bonding) or when an electron moves from one atom to another (ionic bonding). A chemical reaction happens when new bonds, and therefore new substances, are formed. The chemical change doesn't cause the electrons to move between atoms; it happens because electrons have moved, or been shared differently, between atoms. Without this, chemical change would not happen. Metals conduct electricity because their electrons are free to move about amongst the atoms, and an electric current is the movement of these electrons. No chemical reaction takes place when the electrons flow through a metal, so metals are ideal to use in electrical circuits. Create a diagram to show what might happen to atoms and electrons when magnesium burns in air.