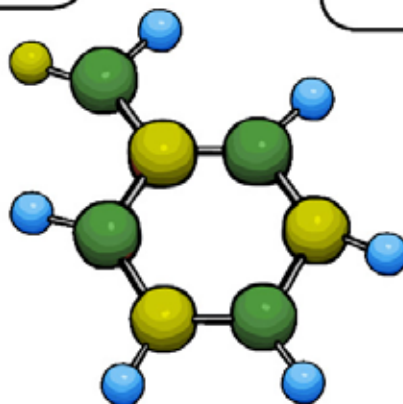


# Science Concept Cartoons<sup>®</sup>

## Set 2 - Sample Set

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Produced by Millgate House Education

# 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](http://www.millgatehouse.co.uk)



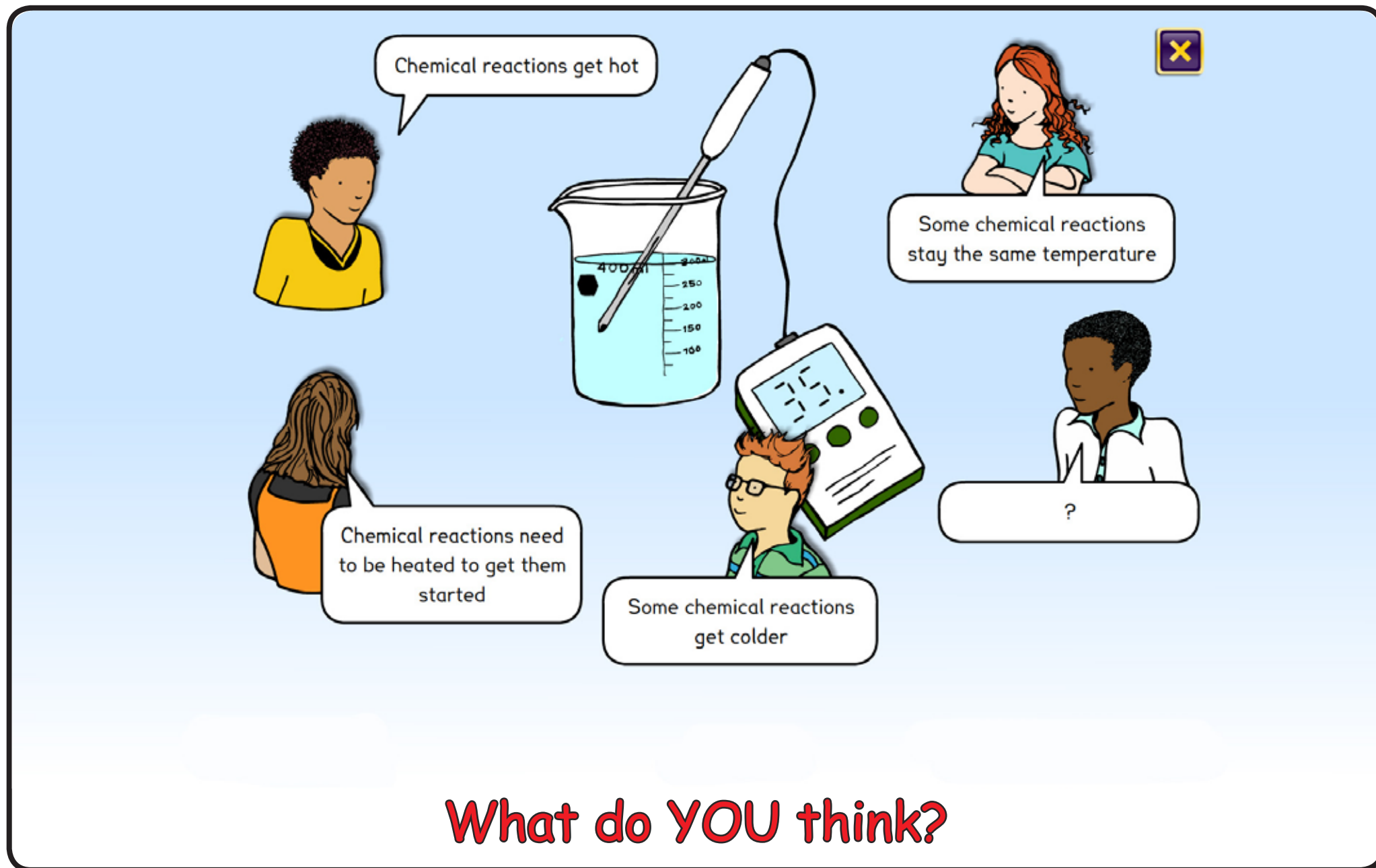
Twitter: @MillgateHouseEd

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

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## 5.11 Temperature change in reactions



Chemical reactions get hot

Some chemical reactions stay the same temperature

Chemical reactions need to be heated to get them started

Some chemical reactions get colder

?

**What do YOU think?**

## Follow up

Talk about some chemical reactions that you have seen. Do any of them get hot or cold? Mix some baking soda with vinegar and record the temperature. Find out whether the temperature changes as they react. Can you explain what is happening? What do you think exothermic and endothermic mean?

## Ideas

Chemical reactions involve a change in energy. Some chemical reactions get hot. For example, when something burns, a chemical reaction takes place where oxygen reacts with the fuel and releases energy as the chemicals combine. Putting some metals in acid causes a reaction that gets hot. Some reactions absorb energy. For example, if you react ethanoic acid (vinegar) with sodium hydrogen carbonate (baking soda), the temperature goes down. Energy is removed from the surroundings to make the reaction happen. Some reactions need to be at a high temperature to get started, but then they release energy and keep going by themselves, like burning magnesium. Some reactions don't involve any noticeable change in temperature. What kinds of energy changes take place in preparing and cooking food? Create a list of examples.