

# Science Concept Cartoons®

## Sample Set 2

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Produced by Millgate House Education

# Science Concept Cartoons® Sample Set 2

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)



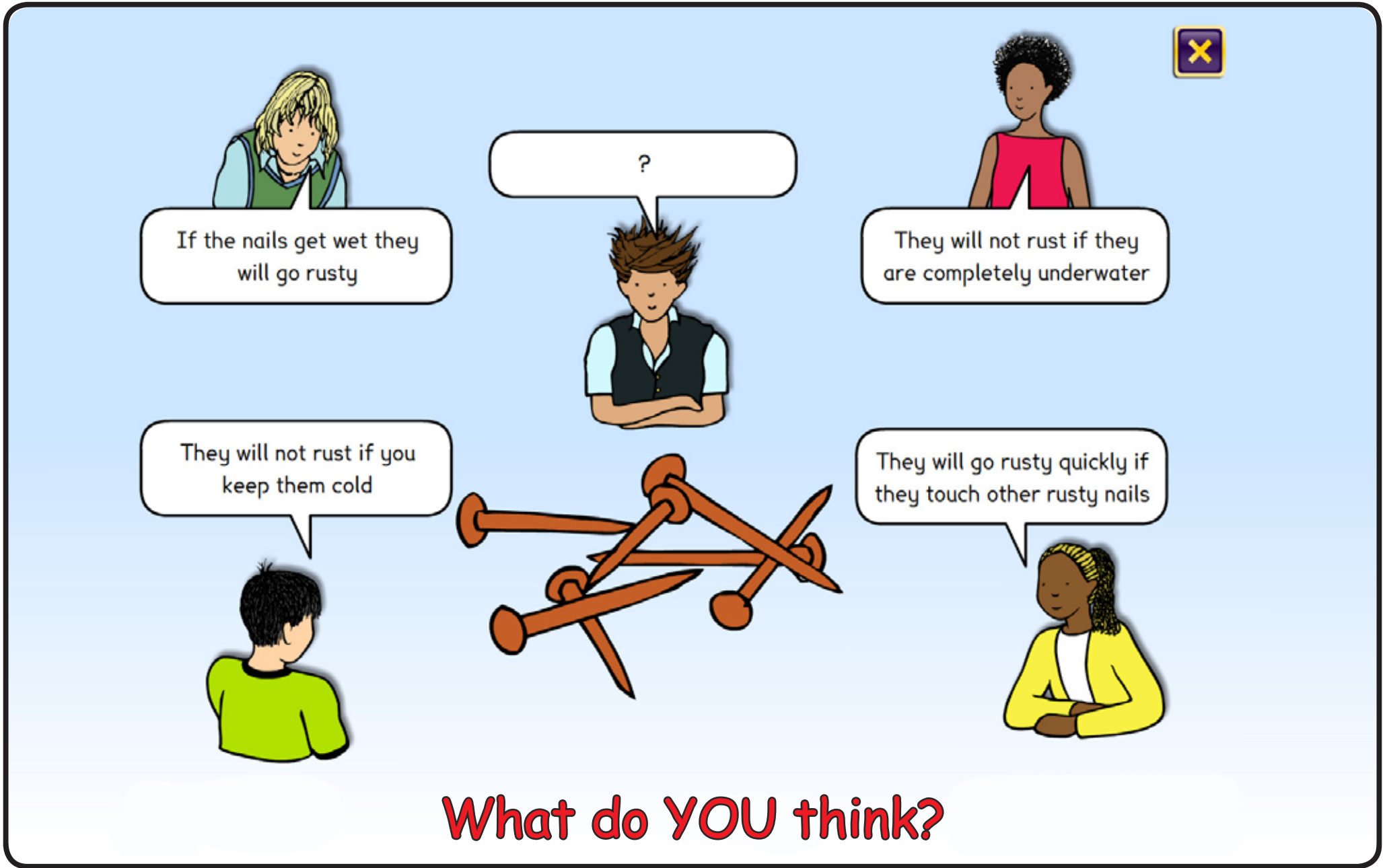
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# 4.4 Rusting



If the nails get wet they will go rusty

?

They will not rust if they are completely underwater

They will go rusty quickly if they touch other rusty nails

They will not rust if you keep them cold

**What do YOU think?**

## Follow up

You can set up a practical investigation to find out what makes nails go rusty. What do you think might make a difference? How will you separate each of the possible factors? Removing air completely is the most difficult. A layer of oil, paint or petroleum jelly will keep the air out, but it also stops moisture getting to the nail. Boiling water for a few minutes will remove the air, so you can do a comparison with a nail with water and no air. Does it make a difference if the water contains salt or other substances? What happens if you use iron, zinc or copper nails?

## Ideas

Iron nails go rusty if air and water are present, so wet nails usually rust fairly quickly. If they are completely underwater they will slowly go rusty, because water normally contains dissolved air. Cold conditions will slow down rusting. In salty water iron tends to rust more quickly. Although rust may look like a disease, it isn't, so touching another rusty nail doesn't make rusting more likely. Zinc or copper nails do not go rusty, though they will tarnish. If iron goes rusty, why do you think is it used? How might rusting be reduced?

For more information about Concept Cartoons visit <http://www.millgatehouse.co.uk/science/ccscd>