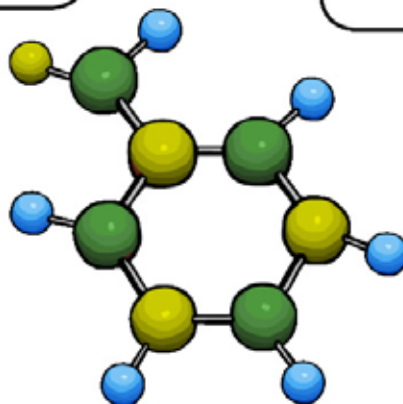


# Science Concept Cartoons®

## Set 2 - Sample Set

Written by  
Jo Horlock, Jo Moules  
Brenda Keogh &  
Stuart Naylor

Illustrations by  
Ged Mitchell et al



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)



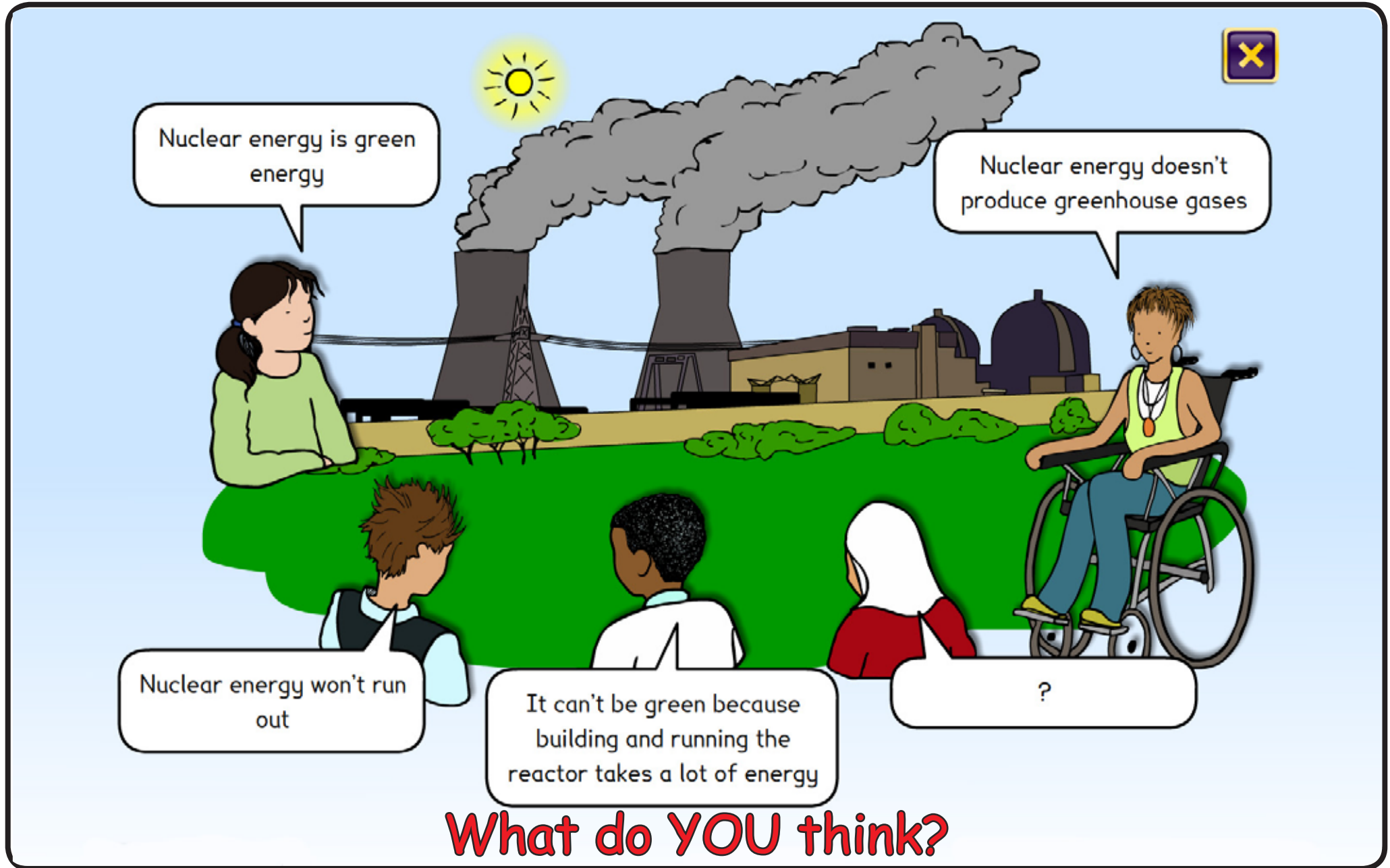
Twitter: @MillgateHouseEd

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

Copying of this material is permitted only within the purchasing institution.

Millgate House Education cannot accept any responsibility for any disruption to, or loss of, data which may occur when using this material.

### 3.6 Is nuclear energy green?



## Follow up

What do you think people mean when they talk about green energy? Get hold of some information about nuclear energy. Use more than one source to get a range of views. Find out what nuclear reactors use as fuel. Is it a fuel in the same way that fossil fuels are? What kind of waste do they produce and what happens to the waste?

## Ideas

Nuclear reactors use radioactive substances to heat water, which is then used to generate electricity. Nuclear reactions release lots of energy without using much nuclear fuel. Nuclear fuels will last for thousands of years, but they have to be mined and processed and this requires energy. Nuclear power stations take a lot of energy and resources to build, and they are dangerously radioactive when they are too old to use anymore. They don't produce greenhouse gases like carbon dioxide, but they do produce radioactive waste that has to be processed carefully. Some of the waste needs to be stored for hundreds or even thousands of years before it is safe, and nuclear accidents can be very serious. Overall nuclear reactors are much more energy efficient than coal, gas or oil. Make a table to show the advantages and disadvantages of nuclear energy compared to other possibilities. Imagine you are the Minister for energy policy. Use your table to write a brief policy statement about whether to invest in nuclear power stations in the future. Do others agree?