

This week, it is 'British Science Week'





PRIMARY ACTIVITY PACK

Innovating for the future
5-14 March 2021
britishscienceweek.org

A range of activities and
ideas to be run with students
up to the age of 11

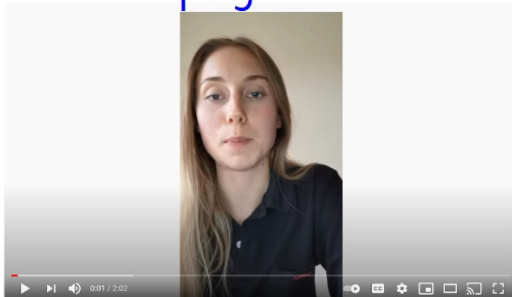


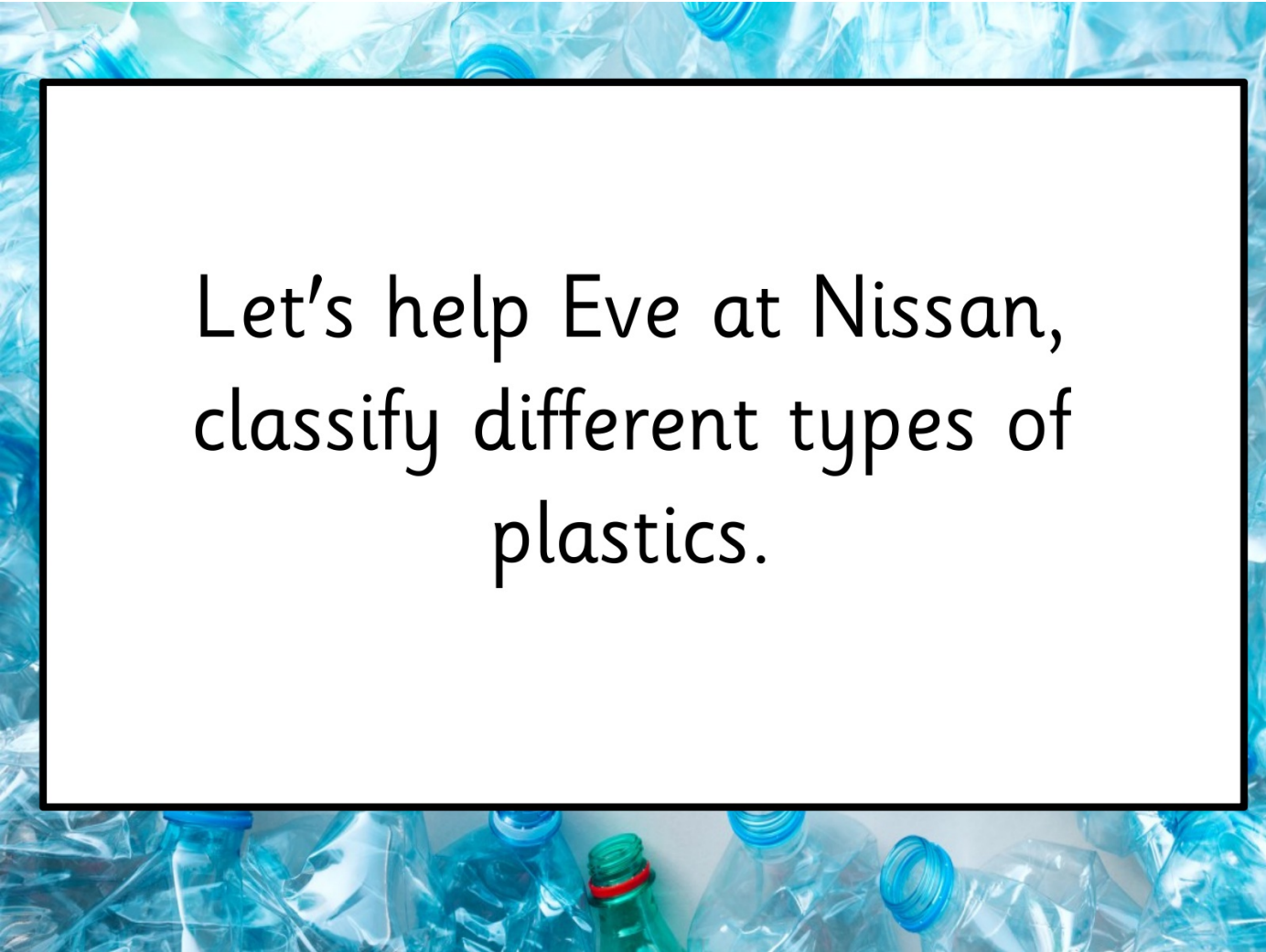
Eve Davison is an engineer at a car factory in the north-east of England.

Classifying plastics is an important part of this job

Why?

Click the link on the virtual page to watch



The background of the slide is a collage of various plastic waste. It includes several clear plastic water bottles, some with blue caps, and a significant amount of crumpled, translucent plastic film. The overall color palette is dominated by light blues and whites, with a small green bottle with a red cap visible near the bottom center.

Let's help Eve at Nissan,
classify different types of
plastics.



Innovating for the future

Which plastic?

INEOS



About this activity

Different types of plastic are used to make many everyday objects but do you know which plastic is which? Learn how to help the environment as you carry out simple tests and use a chart to identify different plastics for recycling. You will also find out how one company supports a recycling scheme to reduce the amount of single-use plastic sent to landfill sites.

You are going to need these plastics to conduct your experiment. Don't worry if you can't complete it today because you need to gather your materials.

Just send in your work as soon as you have done the experiment.

Time

1 hour

Kit list

✓ Ask an adult to cut out four plastic samples (approximately 6cm by 2cm) and number them 1 to 4 with a permanent marker. Use the following items:

Sample 1:
shower gel bottle.

Sample 2:
clear packaging used for greeting card multi-packs or gift sets.

Sample 3:
white foam container used for takeaway food

Sample 4:
clear fizzy drinks bottle

✓ 1 litre bowl or container filled with $\frac{1}{2}$ litre of cold water



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Innovating for the future

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- 1 Think about the objects you use every day that are made from plastic. Did you know that there are many different types of plastic, each one useful for different things?



Innovating for the future

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INEOS



2 Why is this a negative effect?

Plastic is often thrown away after one use and this can have a negative effect on our environment by ending up in landfill sites or as litter pollution.



Innovating for the future

Which plastic?

INEOS



CENTRE FOR INDUSTRY REACTION COLLABORATION

- 3 Consider the 'sustainability' of plastics; in other words, how often they can be reused and recycled so that we can keep using them for longer.



Innovating for the future

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INEOS



CENTRE FOR INDUSTRY REACTION COLLABORATION

- 4 Gather your numbered plastic samples.

Time

1 hour

Kit list

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CENTRE FOR INDUSTRY REACTION COLLABORATION

- 5 Half fill your container with water and place sample 1 under the water before letting it go. Do the same for the rest of the samples. Observe and record which plastics float and which sink.



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Which plastic?

INEOS



- 6 Using the same samples (removed from the water) fold each piece of plastic backwards and forwards to see what happens - some plastics snap under pressure; others simply fold into a crease whilst some plastics show a white line called stress whitening.



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Which plastic?

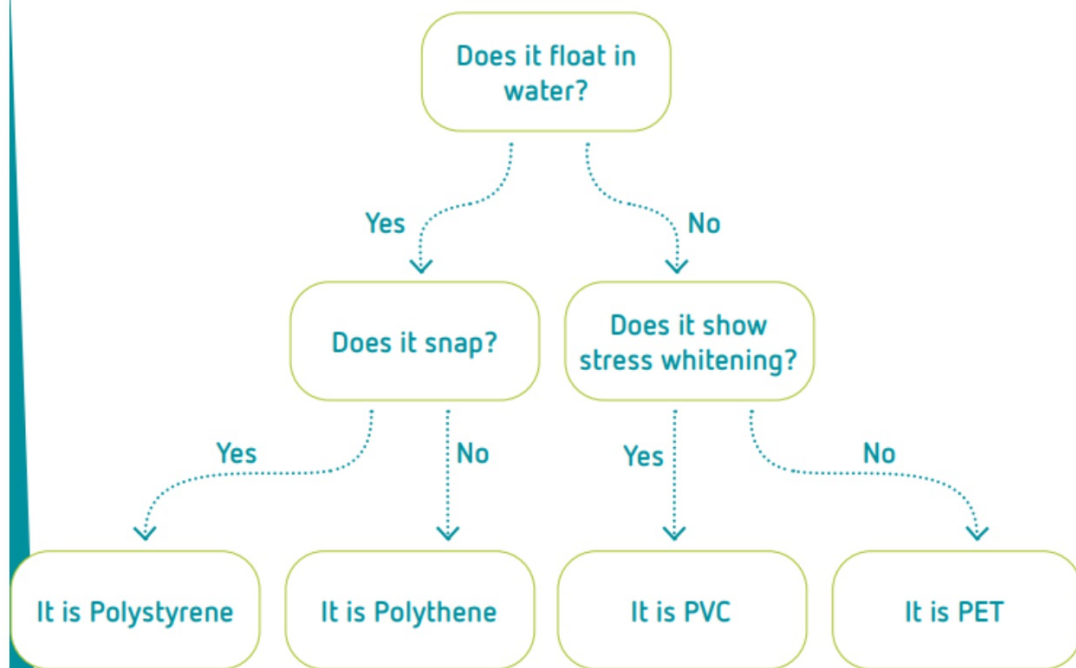
INEOS



7 Record your results.

8 Use this classification key to identify which type of plastic is which:

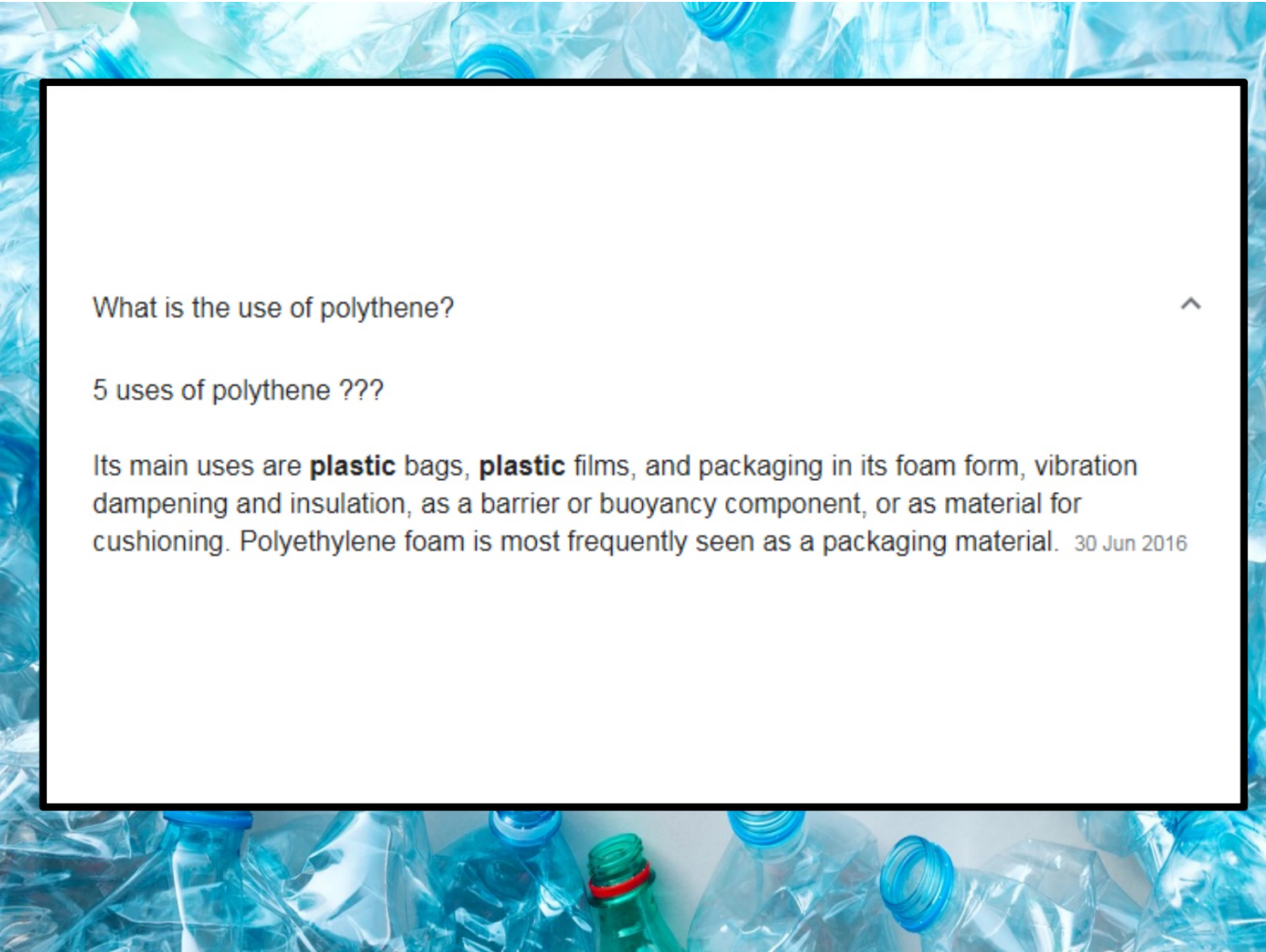
Can you identify and sort four different types of plastic in order to send any waste materials to the correct recycling centres?





What is polystyrene used for? ^

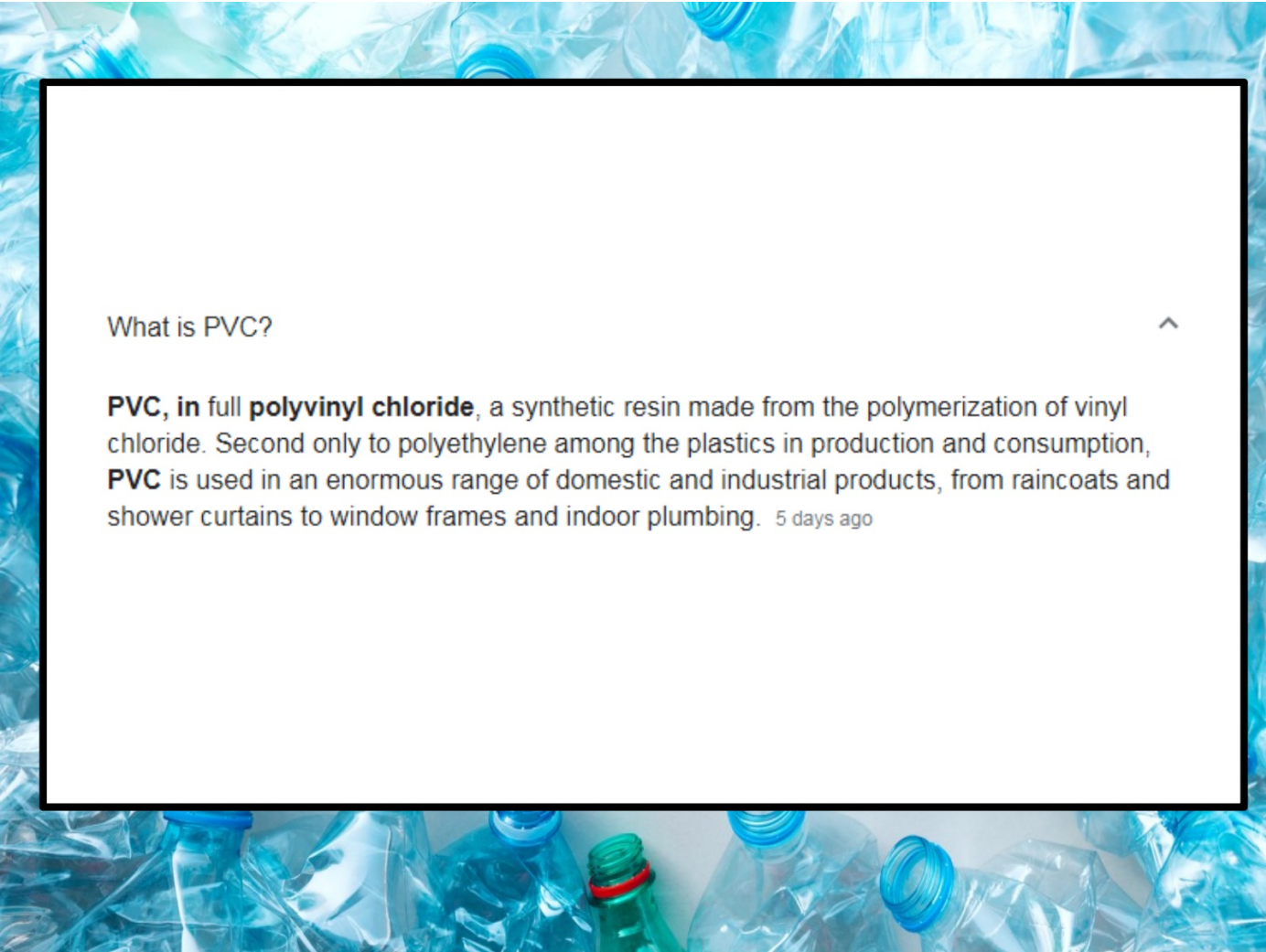
As a hard, solid plastic, it is often **used** in products that require clarity, such as food packaging and laboratory ware. When combined with various colorants, additives or other plastics, **polystyrene** is **used** to make appliances, electronics, automobile parts, toys, gardening pots and equipment and more.



What is the use of polythene? ^

5 uses of polythene ???

Its main uses are **plastic** bags, **plastic** films, and packaging in its foam form, vibration dampening and insulation, as a barrier or buoyancy component, or as material for cushioning. Polyethylene foam is most frequently seen as a packaging material. 30 Jun 2016



What is PVC? ^

PVC, in full polyvinyl chloride, a synthetic resin made from the polymerization of vinyl chloride. Second only to polyethylene among the plastics in production and consumption, **PVC** is used in an enormous range of domestic and industrial products, from raincoats and shower curtains to window frames and indoor plumbing. 5 days ago



What is PET plastic used for? ^

PET, which stands for polyethylene terephthalate, is a clear, strong and lightweight **plastic** belonging to the polyester family. It is typically called "polyester" when **used for** fibers or fabrics, and "**PET**" or "**PET Resin**" when **used for** bottles, jars, containers and packaging applications.



	Plastic A	Plastic B	Plastic C	Plastic D
Does it float?				
Does it snap?				
Does it show stress whitening?				
What plastic do you think it is?				

polystyrene polythene Polyvinylchloride polyester

