Introduction

Glass Guardians is a fun, exciting education project for 7-11 year olds, allowing them to explore the value of glass as a material, while encouraging them to see the importance of recycling glass for maintaining the world they live in. Enable pupils to learn about glass as one of the most sustainable and eco-friendly materials, and help them to become Glass Guardians!

In this pack:

- Assembly: Introducing Glass Guardians
- PSHE/Citizenship activity
- English activity
- Maths activity
- Science activity
- Competition/homework leaflet

Activity ideas

Assembly/tutor time: Introducing Glass Guardians

Launch Glass Guardians in your school using the **Glass Guardians PowerPoint presentation** in assembly or tutor time.

1. Raise your hand

Using slides 2-5, start by asking them to raise their hand if...

- they have a recycling bin at home
- they have someone who collects their recycling
- they help someone at home to take recycling to a recycling bank
- they think we should recycle more.

2. Which materials can be recycled?

Ask pupils if they can name some materials that can be recycled. If lots of your pupils have recycling bins at home, you may want to ask them to think about what kinds of things get put in. Alternatively, you can tell them some examples of materials that get recycled using the images on slide 7.

Ask pupils what the materials (cardboard, plastic, aluminium, steel, and glass) have in common. The answer is that they're all used for packaging. Using slides 9-10 ask pupils if they can think of reasons why we use packaging. As an extension you could ask them whether all packaging is completely necessary. For example, peanut butter, oil or eggs would be difficult to transport without packaging, but could other things use less or no packaging?

3. What is packaging made from?

Using slide 11, explain to pupils that packaging is made using natural resources:

- Cardboard is made from trees.
- Aluminium is made from a mineral that is mined out of the ground called bauxite, which contains aluminium oxide.
- Steel is made from iron and carbon.
- Plastic is made from oil.
- Glass is made from silica sand, limestone and soda ash.

4. What is the impact on the environment?

Inform pupils, using the information on slides 12 and 13, that there is an impact on the environment through the production of packaging materials as well as the disposal of them. Before showing them the next slide, ask them what they think we could do to minimise the impact on the environment. There are some suggestions on slide 14.

5. How is glass recycled?

Using the video on slide 15, show pupils how glass is recycled.

6. Become a Glass Guardian!

Slide 16 introduces the national competition. All pupils need to do is come up with a creative way to help persuade people to recycle more glass. They could design a poster, storyboard an advert, plan an event, or design an app that will help more people to understand the importance of recycling glass.

PSHE/Citizenship activity

Starter: Ask pupils to think about all the ways their community encourages people to recycle. This could be through advertising, providing recycling bins, holding events etc. They could write each idea on a post-it note and stick it to the board.

Task 1: In groups of 3-4, ask pupils to research glass and record what they find on the **PSHE/Citizenship activity sheet**. If you want to extend the activity, you could ask them to extend the table and add information for other recyclable packaging materials.

Some good websites you could recommend to pupils are:

- www.gpi.org/recycling/glass-recycling-facts
- www.wiseuptowaste.org.uk/recycle/why-recycle
- www.recyclenow.com/what-to-do-with/glass-0
- www.feve.org/about-glass/visions/environment/

Task 2: Hold a class debate about what they think is the most important reason that we should recycle more glass. You could split them into three groups to research and argue for each of these reasons:

1. It saves money for the local authority/community
2. It saves energy and reduces CO2 emissions
3. It preserves natural resources

Plenary: Despite these reasons, only 67% of glass was recycled in 2016. Ask pupils why they think this might be. What do they think is the most persuasive reason for getting people to recycle more glass?

English activity

Starter: Ask pupils to think of as many items as possible around their home that come in glass bottles or jars.

Task 1: As a class, read through the **Glass Guardians English activity sheet**. Ask pupils to create a comic strip or storyboard that depicts the steps taken to recycle glass. You could help them further by showing the video in the **Glass Guardians PowerPoint presentation**.

Task 2: Ask pupils to use what they have learned, and the facts on the activity sheet, to write a piece of persuasive writing that encourages people to recycle more glass packaging.

Plenary: Ask pupils to read out their piece of persuasive writing, and ask the rest of the class to peer assess the writing.

Maths activity

Starter: Ask pupils to guess how many tonnes of glass were recycled in 2016. They could write their answers on mini-whiteboards or a post-it note. The answer is 1,605,985.

Task 1: Using the **Glass Guardians Maths activity sheet**, ask pupils to work out approximately what percentage of each material was recycled in the UK in 2016.

Answers: glass = 65%; plastic = 45%; paper/card = 80%; aluminium/steel = 70%.

Please note: all figures have been rounded to the nearest five per cent.

Task 2: Ask pupils to make a bar chart using the statistics about glass waste and recycling. To stretch and challenge pupils further, you could ask them to write down two or three inferences they can make from the graph. You could also ask them to convert the amount wasted to the number of elephants or grand pianos. Alternatively, you could challenge them to work out the average amount of glass wasted per person in the UK.

Plenary: Ask pupils to think, pair and share ideas for how more glass could be recycled so that the target can be met.

Science activity

Starter: Ask pupils to match the keywords with the correct definitions on the **Glass Guardians Science activity sheet**.

Task 1: Ask pupils to label each packaging material with the properties they have using the keyword bank. As a stretch and challenge activity you could ask them to also label each packaging material with its purpose e.g. Glass is strong and transparent which makes it ideal to carry food and drink.

Task 2: Inform pupils that they're now going to focus on glass packaging. They will be investigating the hypothesis: 'Glass is an infinitely recyclable material.' Ask them to watch the video in the **Glass Guardians Powerpoint presentation**, and answer the questions on the activity sheet.

After you have watched the video and gone through the answers, ask pupils to think, pair and share the advantages to recycling glass. Then ask them to sum up the evidence for the hypothesis and write a conclusion. If pupils have completed the **English activity sheet** you could also have them refer to their cartoon strips.

Plenary: Ask pupils to work in pairs to come up with what they think is the most important reason that we should recycle more glass packaging. Feedback as a class.

Competition including homework activity

We're challenging pupils aged 7-11, across the UK, to use their creativity to come up with an amazing idea to encourage everyone in their community to recycle their glass bottles and jars.

After finding out about how glass can be recycled within their area (e.g. bottle banks, council collection), they should think about how to get everyone recycling it, and write or illustrate their idea on the entry form.

Will they spread the word about glass as the ultimate recyclable material through an eye-catching campaign poster, describe an idea for a community-wide event, or invent a new app to encourage glass recycling? The creative possibilities are as limitless as children's imaginations!

Just print off the Glass Guardians competition leaflet for more details on how they can enter.