



Science lesson 4

- Teacher notes

Lesson 4 – Teacher notes

Learning aim:

To evaluate information and data to draw conclusions, present findings and develop an appreciation of sustainability.

Curriculum links and Skills Builder focus skills chart:

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| England The national curriculum (England) | Chemistry – chemical and allied industries Pupils should be taught about life cycle assessment and recycling to assess environmental impacts associated with all the stages of a product's life. |
| Scotland The National 5 Chemistry | Chemistry – Plastics – Addition polymerisation Plastics are examples of materials known as polymers. Polymers are long chain molecules formed by joining together a large number of small molecules called monomers. |
| Wales WJEC GCSE science (double award) specification | Chemistry – crude oil, fuels and carbon compounds Learners should be able to demonstrate and apply their knowledge and understanding of the environmental issues relating to the disposal of plastics, in terms of their non-biodegradability, increasing pressure on landfill for waste disposal, and how recycling addresses these issues as well as the need to carefully manage the use of finite natural resources such as crude oil. |
| Skills Builder Framework Focus Skills | |
| Creativity – The use of imagination and the generation of new ideas | Creativity step 6 I use creativity in the context of work. |
| Listening – The receiving, retaining and processing of information or ideas | Listening step 5 I listen to others and record important information as I do. |

Main skills developed and how:

- Teamwork – Students will work together to find evidence and draw conclusions.
- Assessment – Students will recognise the importance of peer review.

Equipment required:

- Calculators
- Highlighters
- Student worksheet
- PowerPoint

Suggested layout of the session:

8 minutes – Introduce the scenario to the class. Use key questions to check understanding and correct any misconceptions. Divide the class into groups/teams. Allocate groups to a material – glass, plastic or compostable. (If required, look through the graphs on the PowerPoint together as a class.)

10 minutes – Students should then read about their material as a group, discuss the charts in greater detail and complete the table on the worksheet. Each team of students needs to select a group representative to feedback their key findings to the rest of the class.

5 minutes – Invite each group to feedback 1 point for their packaging (so other groups with the same packaging can contribute) on positives and negatives for the environment and the customer.

2 minutes – Hold a class vote to decide which packaging should be used and then end with the silent reflection at the end of the PowerPoint. Welcome feedback.

Ways to differentiate:

- Students could calculate percentage differences between packaging to add further data to their feedback.

- Students could write an advert for eco-spa toiletries which includes information about why they are sustainable. They should choose the packaging of their choice.

How to extend the session – if required:

- Write a report to the Head of Sustainability, using the data, to explain which material they have selected and which materials they discounted, and why. They can make calculations to show the difference in cost, transport and production and include these within their report. This could be a verbal presentation activity.

