

Session Leader Notes

Part 5: The environmental impact of waste

This lesson teaches Key Stage 3–4 students the environmental impact of improper waste disposal on ecosystems, wildlife, and human health, as well as the long-term effects of landfills, pollution, and plastic waste in oceans. The lesson is designed to build critical thinking skills, deepen students' understanding of waste-related issues, and encourage responsible behaviour toward waste and sustainability.

Recommended for:

Key stage 3–4 (Ages 11–16)

Session duration:

60 Minutes

Objectives

By the end of this lesson, students will:

1. Understand the environmental impacts of improper waste disposal on ecosystems, wildlife, and human health.
2. Explore the long-term effects of landfills, pollution, and plastic waste in oceans.
3. Evaluate the role of individuals and communities in reducing waste and mitigating environmental damage.
4. Learn how they can contribute to waste reduction through practices such as recycling, upcycling, and waste minimisation.

Recommended group rules

- Listen to each other.
- Treat each other with respect.
- Engage with and enjoy the learning.

Materials (what you need)

- **Provide at the start of the lesson:** Notebooks / Paper and Pens for taking notes of facts and figures.
- **For Slide 23:** Eco Investigation Sheet.
- **For Slide 24:** Pens and Paper for letter writing.
- **To End:** Certificate for all students for completing their Waste Management training.

Technical requirements

- A good standard of audio and visual for the group size for the short video on slides 5 and 26.

Lesson Outlines

Part 5: The environmental impact of waste

1. Introduction to the environmental impact of waste (10 minutes)

Start with a question:

"How does our waste affect the environment?"

"How does our waste affect animals on our planet?"

"Why should we care about waste management?"

- Lead a brief discussion asking students what they know about where waste goes after it's thrown away and how it affects the environment (following on from the previous lesson).

Introduction to key concepts:

Explain the major environmental impacts of waste:

- **Landfills:** Accumulation of waste that doesn't decompose, releases harmful gases like methane, and can lead to soil contamination.
- **Ocean pollution:** Waste, especially plastics, that enter the ocean, harming marine life and ecosystems.
- **Air and soil pollution:** Waste incineration and uncontrolled waste dumps can release toxic pollutants into the air and soil.

Video:

- A video that demonstrates the effects of waste on wildlife and ecosystems.

2. The impact of waste on wildlife and ecosystems (15 minutes)

Discussion on wildlife and ecosystems:

Present key facts and statistics about the state of local / global waste:

- The amount of waste generated annually.
- The percentage of waste that is recyclable but isn't being recycled.

Recap on the different impacts which include:

- **Environmental:** This includes water pollution (waste that gets into rivers, oceans, and lakes), soil degradation (chemicals from discarded waste that contaminates the earth and harms plants and animals), and air pollution (harmful gases released from burning waste).

Continues >



- Discuss how waste, especially plastic, affects wildlife. Examples include sea turtles mistaking plastic for jellyfish, birds ingesting plastic debris, or animals getting trapped in waste.
- **Key Point:** Emphasise that the consequences of waste extend beyond human impact and directly harm biodiversity.

Helping our environment –

This can be done as an activity if waste items are available. If not, share the slide and get the class to make note of the tips to remind them to do this when disposing of the items shown.

- Environmental impact assessment: Present a variation of waste (e.g., plastic bags, beer ties, plastic / paper straws) and ask students how we dispose of these and then how to make them safer.
- Show them what we can do to make things safer when throwing things away – (e.g. cutting beer ties and straws) get the students to do this and then get them to place them in the correct bins.

Discussion: Ask questions like:

- “What would happen if we put plastic in the compost bin?”
- “Why is it important to sort our waste properly?”

3. The impact of landfills, plastic waste, and pollution (10 minutes)

What about items that can't fit in our household bin?

- Explain how sometimes we have waste that cannot go in any of our household bins such as old furniture, fridge freezers, batteries, mobile phones and vapes etc.
- Discuss how when people are unsure what to do with these things they sometimes put them in their black bin, burn them in garden fires or even dump them on the streets themselves (this is known as fly tipping and is illegal).

Types of pollution:

Discuss the different types of pollution caused by waste:

- Air pollution: Harmful gases released from burning waste.
- Water pollution: Waste that gets into rivers, oceans, and lakes.
- Soil pollution: Waste that contaminates the earth and harms plants and animals.

So, what do we do with this waste?

Discuss how waste we cannot recycle can be taken to special bins in supermarkets or to the Household Waste Recycling Centre – give examples.

Continues >



4. Reducing waste and mitigating environmental damage (20 minutes)

The role of individuals and communities:

Discuss how individuals, communities, and businesses can reduce their waste footprint.

Key solutions include:

- **Reducing:** Reducing the use of single-use plastics and excessive packaging.
- **Reusing:** Repurposing items or donating them to avoid waste.
- **Recycling:** Separating recyclables and ensuring they are processed properly.
- **Composting:** Reducing organic waste by composting food scraps and garden waste.

Class activity - Eco investigation and problem-solving:

- Using all their knowledge gained in the last 5 lessons, split students into small groups and ask them to discuss how they would address the problem of waste in their school.
- Provide them with the eco investigation document and get them to fill out each question.
- Each group should come up with a list of potential solutions and strategies to reduce waste and protect their school environment.

Activity Part 2:

- Using these findings have the students each choose one or two impactful changes they could introduce to their school and get them to write a letter to their head of year / school head teacher of what they would like to change / introduce and why it is important.

5. Wrap-up and conclusion (5 minutes)

Recap key takeaways:

Review the main points discussed:

- The environmental impacts of waste on landfills, pollution, and plastic waste in oceans.
- The importance of reducing, reusing, and recycling to mitigate these impacts.
- How everyone can make a difference through daily actions.

Congratulations:

- At the end of the presentation you will find a short congratulations video that is to be played to the class.
- Certificates have also been provided to present to the students for completing the Waste Management course.

Reflection for Teachers:

Make sure to gauge the students' level of understanding by the end of the lesson and adjust future lessons if needed to further explore waste management and sustainability.

Keep the activities interactive and practical to ensure students can relate the lesson to their everyday lives.