



Surrey Environment Partnership
YOUR COUNCILS WORKING TOGETHER

an initiative by
ypte
young people's trust
for the environment

TEACHER'S GUIDE TO LESSONS ON WASTE, RECYCLING AND THE ENVIRONMENT IN SURREY

INTRODUCTION

What is this guide?

Thank you for downloading this teacher's guide to lessons on waste, recycling and the environment in Surrey. This guide and the associated slides were produced by the Surrey Environment Partnership (SEP) in collaboration with the Young People's Trust for the Environment (YPTE). You are welcome to modify it by adding your own slides to the presentations or deleting ones you don't need.

The lessons have been designed to support learners in Upper Key Stage 2 (Years 5 and 6) with understanding how to recycle household waste and the beneficial effects that recycling can have, both locally and for the environment as a whole. The lessons explain how it is important to conserve natural resources, many of which are non-renewable. Children learn that the creation of new resources create greenhouse gas emissions, which can accelerate climate change. They draw links between recycling and helping to protect the environment.

SEP comprises Surrey County Council and the eleven district and borough councils in Surrey. It aims to manage Surrey's waste in the most efficient, effective, economical and sustainable manner. Discover more about SEP at <https://www.surreyep.org.uk> or get in touch at: comms@surreyep.org.uk

YPTE wants to encourage more and more young people to learn about taking care of our world and their website is a great starting point for this. You can

find lots more supporting information by visiting the 'Explore' section of <https://yppte.org.uk>

This package of lesson plans consists of four lessons:

- **Lesson 1:** Waste and the environment
- **Lesson 2:** Waste reduction
- **Lesson 3:** Food waste: recycling and reduction
- **Lesson 4:** Recycling right - contamination

Links to National Curriculum

- Science
 - Compare and group together everyday materials on the basis of their properties (*Year 5, Properties and changes of materials*).
- Citizenship
 - Understand that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment. (*Key stage 2*).

Notes to teachers

- These teaching notes and activities run alongside PowerPoint presentations and all slides are referred to in the notes. The information can be adapted to suit different learners at different stages by adding/deleting slides on the presentation and varying the level of detail used from the teacher notes.
- Although these lessons are designed to run in sequence, you may choose to teach each as a standalone session. If choosing this approach, it would be helpful to refer back each time to the slides from lesson 1 which explain the impact that waste can have on climate change.
- Activities given are suggestions only. The main purpose of these resources is to provide key information and visual aids for teachers to adapt to their needs.

LESSON 2: WASTE REDUCTION

Learning Objectives

- Children will understand that the more items we use, the more resources and energy must be used to create them.
- They will begin to understand the link between use of resources and climate change.
- Children will be able to suggest some ways to minimise the waste that they create.

Suggested starter activity

Slide 3: Working in groups, ask students to list everything they have 'used' since getting up that morning. This would include objects they will use more than once such as their toothbrush, the clothes they are wearing and any devices they have interacted with, such as a phone or the television. It also includes consumables such as toothpaste and the food they have eaten.

Allow a short time to compile a list (you may like to do this against a clock) then take a suggestion or two from each group and add these to a list on the board.

Slide 4: KEY QUESTIONS: What materials are these items made from? Did they have packaging materials around them? What were these made of? Add suggestions to the list in simple terms, such as:

Toothbrush - plastic (did it come in packaging? Where did that go?)

Jumper - cotton (did it have tags or labels, or come in a bag?)

Cornflakes - corn, packaging materials (cardboard, plastic)

Phone - plastic, metals / minerals, glass (don't forget the packaging!)

Teacher notes for Powerpoint presentation

Learners should be starting to see that we are surrounded by many objects and that we use up a range of different products when going about our daily lives.

Slide 5: Each and every thing that we use requires raw materials. Some of these are grown as crops. This might include food ingredients such as wheat and corn, but it also includes trees used for wood and cotton plants used for fabrics. (Slide shows a cotton field and a field of wheat.)

Slide 6: Other materials used, such as metals and the minerals in our phones are mined from the ground. Plastics are made from oil which is pumped from reserves deep below the surface of the Earth. Many of these resources are precious, rare and hard to reach.

Slide 7: As well as their raw materials, everything that we use requires energy to produce it. The factories that make and process our goods all use lots of electricity. **KEY QUESTION: Why is conserving energy so important?**

Slide 8: Most of the electricity is generated by burning fossil fuels in power stations. Coal, oil and natural gas are all known as fossil fuels. Although renewable energy sources such as wind and solar power are increasing, in 2020 84% of global energy production still came from burning fossil fuels.

Slide 9: Fossil fuels get their name because they are made from decayed organic matter that has been trapped deep under the Earth's surface for hundreds of millions of years. Heat from the Earth's core, together with the pressure from being buried so deep underground, combined over millions of years to form them into the fuels that we use. Since these fuels took so long to form, they are running out far faster than they can be replenished. One day, they will run out altogether.

Slide 10: Another big problem is that when fossil fuels are burned, the carbon that was once part of the living organism, and that has been trapped in the ground, is released.

Slides 11-12: Carbon dioxide is released into the atmosphere as a waste product when fossil fuels are burned. It then acts as an invisible blanket, trapping heat from the sun and warming the Earth - this is called the greenhouse effect. The more fossil fuels that are burned, the thicker the blanket becomes and the more heat is trapped.

A more detailed explanation of the greenhouse effect can be found on YPTE's video which can be downloaded using this link: <http://yppte.org.uk/videos/the-greenhouse-effect>

Slide 13: The more items we use, the more resources and energy are used to create them. Over time, this leads to the depletion of our planet's limited resources and accelerates climate change. Yet many of the items that are produced end up being thrown away. By 2050, the world is expected to generate 3.40 billion tons of waste annually, a dramatic increase from today's already huge 2.01 billion tons. While in Surrey, most waste is burned to create

energy, elsewhere lots of waste ends up in landfill sites, huge rubbish tips buried in and sitting on top of the ground.

Slide 14: Surrey residents produce over **500,000 tonnes** of waste a year. This is equivalent to the weight of **50 Eiffel Towers!**

Slide 15: Waste management is an expensive process. Councils have limited budgets from the government and they have to use the money for lots of different purposes. When items are thrown away, it costs councils money to dispose of them that could be spent on things like care for older people instead.

Slide 16: One of the best ways to avoid food waste is to plan meals before shopping so that you only buy what you need. This does take a bit of forward thinking but can save money and prevent waste in the long run.

Slide 17: Use up left-overs whenever possible and if there are still food scraps, make sure they go into a food caddy bin and not in with general waste.

Slide 18: KEY QUESTION: How can you avoid creating unnecessary waste?

It can be really hard to avoid when we are encouraged to buy more and more new things. The best way to avoid throwing things away is not to buy unnecessary items in the first place! Instead, try to make the most of all the things that you already own.

Can learners think of examples of items that manufacturers encourage people to buy new versions of on a regular basis? (You might discuss mobile phones and other tech items, team football strips - or new fashions generally.) What happens to the items that are no longer wanted?

Slide 19: Are there members of the class who know how to sew? Do they have family members who are able to fix clothes or broken items? It was once very common for people to mend things when they broke, but nowadays, these items are often just thrown away. Extending the life of objects by mending them is a great way to avoid creating unnecessary waste.

Slide 20: Ask students if they have ever received a parcel that came with a large amount of packaging. Can they think of food items that come with a lot of wrapping? What happens to that packing?

People are beginning to realise that even 'recycling' plastic doesn't get rid of it altogether. It will still be on the planet for hundreds, maybe thousands of years. At the moment, 40% of the plastic waste we create is from food packaging that is used only once. Avoiding items that come with a lot of packaging helps to cut down on rubbish.

Slide 21: DISCUSSION ACTIVITY - Work in pairs.

Some of the most common single-use items thrown away include cling film, tin foil, disposable nappies, face masks, plastic bottles and carrier bags. Can you think of alternatives that could be used instead? (For example: reusable containers for food, beeswax wraps for sandwiches, reusable drinks bottles, washable nappies and fabric face masks designed to be washed and used again and again.)

Slide 22: There are lots of other ways to reduce the waste you produce as well. Re-using items as much as you can helps keep them from being thrown away. A plastic bottle could become a watering can for houseplants, a scoop to use for dried foods, or a planter for seeds. Can students think of other uses? There are a range of craft activities using recycled materials on the Surrey Environment Partnership website at: <https://www.surreyep.org.uk/reduce-reuse-recycle/schools/craft-activities/> that you might like to try with the class.

Slide 23: If you have younger family members, you can help to give items such as clothes and toys a longer life by passing the things that you have grown out of down to a sibling or cousin. You can also gather clothes that you have grown out of together and offer them to other families on websites such as [Freecycle](https://www.freecycle.org/), or by selling them online, via eBay, [Kidclo](https://www.kidclo.com/), [Vinted](https://www.vinted.com/) or local sales sites.

Passing outgrown school uniforms on to other pupils is another great way to stop old clothes being thrown away. You can always guarantee that someone else in your school will need the same school jumper!

Slide 24: Another way to pass your unwanted clothes on to others who can still get plenty of wear out of them, is to donate them to a charity shop. Buying second hand clothes yourself also reduces the massive demand for new garments being manufactured each year. You can usually find clothes in a huge range of different styles and putting them together into outfits that you have come up with yourself is a great way to develop your own personal style!

Slide 25: The average person in Surrey throws away 154 kilograms of rubbish a year. This is heavier than a giant panda! If we all work to cut the amount of

waste that we produce individually, together we can have a big impact on reducing this amount.

Slide 26: How can we reduce our waste at school?

KEY QUESTION: At which points during the school day do we generate the most waste?

- Break / snack time?
- Lunch time?
- At the end of practical activities?

What sort of waste are we generating at these times (in terms of materials)? Where does the waste currently go? Could this waste be better managed?

ACTIVITY: If possible - carry out a bin audit in the classroom. Using gloves and a suitable table or floor covering, find out what was thrown away in the class bin / recycling bin the previous day. You may be able to do this with an outdoor waste bin, perhaps bringing the contents into the hall to investigate.

Suggested follow-up activities

Set a home 'Binterrogation' challenge

Use the [Surrey Environment Partnership - Binterrogator](#) tool (shown on Slide 27) to identify what type of waste is being thrown away at home. Students needn't go through the bin at home - as an alternative, they can simply keep the print-out near the bin for a set period and record items **before** they are about to be added to the bin (allowing them to be redirected as necessary!)

You may ask students to bring in a completed Binterrogator sheet for discussion, or you may prefer to ask for an example of something that was about to be thrown away that ended up being re-used or recycled instead.

Set up a Clothes Swap Shop

This is a brilliant way to recycle unwanted clothes. Set up a Swap Shop at school. Ask everyone to bring in unwanted clothes. For each item of clothing they bring in, they receive points or a voucher, which they can use to 'buy' clothes that have been brought in by someone else. It's a fantastic way of passing uniforms on, but it's great for clothes in general too, and the adults can join in! Running the shop provides excellent business experience for the team of children who manage it too!

Mend and Repair Day

Invite members of the community into school (or arrange video links) to help

students learn how to mend their clothes. This can be an excellent chance to encourage parents and grandparents into the school to share skills.