This unit analyses the recycling habits of the class on a personal basis, and asks why it is important. It then investigates local community schemes to encourage recycling.

Students make presentations of their findings so that the whole class can consider what effect they can have on local issues.

As a result of their findings, students can look at the school’s policy on recycling and make recommendations for increasing its effectiveness. Then they can put their work into the context of national and global objectives on recycling.

This work fits the KS3 programme of study for both Science and Citizenship and is particularly appropriate Year 7.

**Lesson 1: Recycling**

**Aim of this lesson**
Investigate recycling on a personal and family level.

**Resources**
Sets (1 for each group) of black bin bags or carrier bags containing examples of the following contents of an average bin:

Styrofoam (plastic cup), plastic container, leaves, glass bottle, tin can, plastic bag, plastic soda bottle, paper, orange peel, milk carton, aluminium can.

**Risk assessment**
Carry out your own risk assessment and take suitable precautions. Do not rely on what is said here. Take care with rough edges and food scraps. Wash hands after handling, or provide disposable plastic gloves.

**Starter**
Before the lesson, collect the ‘contents of an average bin’ so that students can see the objects that they will have to sort out in the next section and put into plastic bin bags. One bag per group.

Tip the contents onto the tables in front of students so they can see. Ask students to sort the material into two groups – ‘bio-degradable’ and ‘non-biodegradable’. You might have to explain the terms first.
Ask the students to look at Resource 1 ‘Table of decomposition rates’ (page 2 gives the answers), and see if they can match the objects with the time taken for them to decompose. Students record their suggestions in the table.

**Main activity**

Go through the answers – some of the decomposition times are incredible! Ask students whether it is a good or a bad thing to throw all this rubbish away.

Ask students if they know what happens to the rubbish once the council takes it away. Ask students what they know about recycling schemes in the area.

Show a relevant TV programme or schools programme about recycling to set the scene.

Design a questionnaire to ask parents/ carers/ family how much recycling they do and what kind of things they recycle. You may need to be sensitive to individual students’ circumstances.

**Plenary**

Ask students to tell you what other things they regularly throw away that were not in the carrier bag at the start of the lesson. For instance, what happened to their old mobile phone if they got a new one for Christmas?

**Homework**

Ask parents/ carers/ family to fill out the questionnaire if appropriate. This is due back next lesson.
Recycling resource 1  How long does it take objects to decompose?

Look at the names of the objects in the list on the right.
In pairs, decide how long it takes each object to rot (decompose).
Write your answers in the table below.

<table>
<thead>
<tr>
<th>Decomposition rate</th>
<th>Name of object</th>
</tr>
</thead>
<tbody>
<tr>
<td>2–4 weeks</td>
<td>Paper, Milk carton</td>
</tr>
<tr>
<td></td>
<td>Orange peel, Aluminium can</td>
</tr>
<tr>
<td>1–3 months</td>
<td>Styrofoam (plastic cup)</td>
</tr>
<tr>
<td></td>
<td>Leaves, Glass bottle</td>
</tr>
<tr>
<td>6 months</td>
<td>Plastic container</td>
</tr>
<tr>
<td>5 years</td>
<td>Plastic soda bottle</td>
</tr>
<tr>
<td>10-20 years</td>
<td>Plastic bag</td>
</tr>
<tr>
<td>50-80 years</td>
<td>Tin can</td>
</tr>
<tr>
<td>80 years</td>
<td></td>
</tr>
<tr>
<td>100 years</td>
<td></td>
</tr>
<tr>
<td>450 years</td>
<td></td>
</tr>
<tr>
<td>500 years</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
</tr>
</tbody>
</table>
## Recycling resource 1  How long does it take objects to decompose?

### Answers

<table>
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<tr>
<th>Decomposition rate</th>
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<tr>
<td>450 years</td>
<td>Plastic soda bottle</td>
</tr>
<tr>
<td>500 years</td>
<td>Glass bottle</td>
</tr>
<tr>
<td>Never</td>
<td>Styrofoam</td>
</tr>
</tbody>
</table>

Lesson 2: Recycling projects

Aims of this lesson

- To analyse recycling habits on a personal basis
- To investigate local community schemes to encourage recycling
- To consider what effect students can have on local issues
- To consider national and global implications of recycling.

Starter

1. Look at the recycling questionnaire responses students carried out for homework.
2. Analyse the results individually.
3. Pool the results and analyse the class results.
4. Present the information in pie charts as a class poster.

Main activity

Tell the students they will be doing a project on recycling and citizenship. Either ask students to choose which aspect of recycling they want to investigate, or allocate projects to students at certain tables.

Remind students of the citizenship objectives they are covering in their projects. Decide how long you will give them to do the project. Will they have lesson time, and computer room access? What will they have to do or find out for homework? If they have to contact people, say at the local council offices, how much time will you give them to collect this information.

Brainstorm each project by giving each group or table a piece of poster or sugar paper on which to write down the different things they could find out, and who is to do what.

Give students lists of websites to look at (see Resource 2). Help students find the addresses of people to contact, and how to write a letter or email to contact them.

Plenary

Ask students why people should recycle more. Get them to consider what effect recycling has on world energy consumption and the using up of raw materials.

Homework

Collect information. Contact local councils. Look at websites for national and international campaigns.
Recycling resource 2 Recycling projects – websites

Local council such as

- [www.hertsdirect.org](http://www.hertsdirect.org)
- Waste aware tel. 08457 425000
- Waste Watch Wasteline on 08702430136
- Try contacting the following people at your council offices – Local Recycling Officer; Local Waste Contractor; Local Agenda 21 officer – they might also be able to visit your school and talk to you about local recycling schemes.

Local Issues


Recycling sites – general

- This site lets you put in your postcode so you can find where to recycle near you, and tips for recycling at home [www.recyclenow.com](http://www.recyclenow.com)
- [www.recyclezone.org.uk](http://www.recyclezone.org.uk)
- Games and puzzles at [www.olierecycles.com](http://www.olierecycles.com)
- [www.epa.gov/kids/garbage.htm](http://www.epa.gov/kids/garbage.htm)
- Put in your post code to find your local recycling bank at [www.recyclemore.co.uk](http://www.recyclemore.co.uk)

Sustainable development

- [www.wwf.org.uk](http://www.wwf.org.uk)
- [www.ellenmacarthurfoundation.org/](http://www.ellenmacarthurfoundation.org/)
- Use this site to find out about the EU landfill Directive and the Kyoto Protocol [www.channel4.com/science/microsites/E/environment](http://www.channel4.com/science/microsites/E/environment)

National and International campaigns

- [www.globalfootprints.org](http://www.globalfootprints.org)
- [www.greenchoices.org](http://www.greenchoices.org)
- [www.globaldimension.org.uk](http://www.globaldimension.org.uk)
- Try contacting environmental groups e.g. Greenpeace / Friends of the Earth
Specific recycling information

- [www.recyclingglass.co.uk](http://www.recyclingglass.co.uk)
- The Steel cans recycling information bureau at [www.scrib.org](http://www.scrib.org)
- [www.alupro.org.uk](http://www.alupro.org.uk)
- A-Z of different waste material at [www.defra.gov.uk/environment/waste](http://www.defra.gov.uk/environment/waste)
- [www.wasteonline.org.uk](http://www.wasteonline.org.uk)
- [http://www.thinkcans.net/](http://www.thinkcans.net/)

Recycling and schools

- [www.collect4schools.co.uk](http://www.collect4schools.co.uk)
- [www.eco-schools.org.uk](http://www.eco-schools.org.uk)
- How to produce less waste in school offices [www.wastebusters.org.uk/home/default.asp](http://www.wastebusters.org.uk/home/default.asp)
- [www.schoolsgarden.org.uk](http://www.schoolsgarden.org.uk)
- [www.globalactionplan.org.uk](http://www.globalactionplan.org.uk)
- Find out what happens to your old mobile phone after it has been recycled at [www.cmrecycling.co.uk/tools/flowchart.swf](http://www.cmrecycling.co.uk/tools/flowchart.swf)

Other

- [www.wasteaware.org.uk](http://www.wasteaware.org.uk)
- UK Nappy line to find out about reusable nappies 01983 401959
- Log onto [www.google.co.uk](http://www.google.co.uk) and type “recycle”
- What happens to some of the things that have been recycled – look at the following sites [www.rethinkrubbish.com](http://www.rethinkrubbish.com) and [www.recycledproducts.org.uk](http://www.recycledproducts.org.uk)
- Contact the Association for Beverage Carton Manufacturers and the Environment to find out about their collection of old, washed cartons for recycling
Lesson 3: Presentations

Aim of this lesson

• To collate the information students have collected as posters or PowerPoint presentations.

• To present this information to their peers

Starter

Re-join the original groups together with the information each student has collected. Provide poster material and other equipment as appropriate.

Main activity

Students decide how the presentation is to be delivered by everyone in the group to the rest of the class. The presentations are made by students themselves.

Other students have an opportunity to ask questions about the project, and to decide whether the project covers the citizenship objectives.

Students then decide if any of their findings can be promoted at a school level, and if so, they need to discuss this with the Citizenship coordinator (who might have been present at the presentations), to see if anything can be done.

Plenary

Students fill in a questionnaire about their participation in the project – see Resource 3.

Homework

Complete filling in the Resource 3 questionnaire.
## Recycling resource 3: Recycling and citizenship questionnaire

Name: ........................................................................................................ Form: ..................................................

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Were you surprised how long it took different objects to decompose?</td>
<td></td>
</tr>
<tr>
<td>Q2. At the start of this project, did you think it was important for your family to recycle materials?</td>
<td></td>
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<tr>
<td>Q3. What aspect of recycling did you look at?</td>
<td></td>
</tr>
<tr>
<td>Q4. What aspect of recycling did your group look at?</td>
<td></td>
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<tr>
<td>Q5. Did your project look at local, national or international issues?</td>
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<tr>
<td>Q6. How easy or difficult was it to find the information you needed for your project?</td>
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<td>Q7. Did your project change your mind about recycling?</td>
<td></td>
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<tr>
<td>Q8. If it did, explain how</td>
<td></td>
</tr>
<tr>
<td>Q9. If it did not, explain why not</td>
<td></td>
</tr>
</tbody>
</table>

continued overleaf
<table>
<thead>
<tr>
<th>Q10. What kind of things can you do at home or at school to get people to recycle more?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11. What did you enjoy most about this project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q12. How important do you think it is to recycle now that you have finished the project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
</tr>
</tbody>
</table>