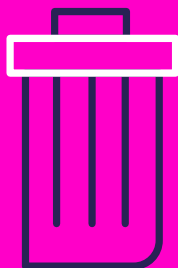
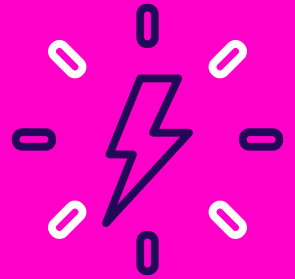
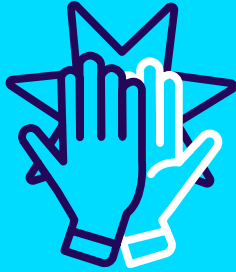
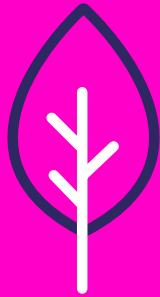


Schools Connect

Zero waste

Tackling climate change through student leadership



ZERO WASTE

Tackling climate change through student leadership

WHAT YOU WILL FIND HERE

An example of how you can support the development of pupils' core skills such as student leadership and personal development, and creativity and collaboration.

This learning unit is designed to explore the United Nations Global Goals for Sustainable Development, and in particular Goal 13 – Climate Action. This can be done in the context of English, citizenship, geography or other subjects. The materials can be used either with or without an overseas partner school, and instructions are provided on how to best use the resources.

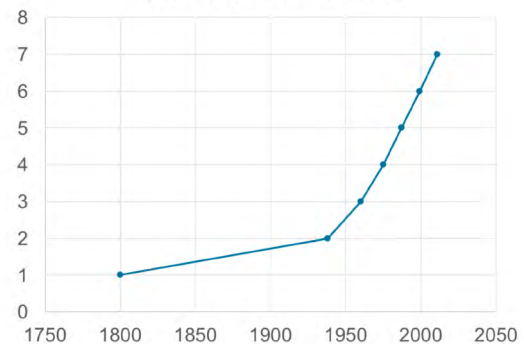
A planning template has been created which supports designing this learning unit, allowing the adaptation of the materials that have been provided. This template also enables the evaluation of the collaborative project, if two partner schools work together on this unit.

OVERVIEW

Since the 1700s and the beginning of the industrial revolution, our dependency on fossil fuels has affected every part of the modern world, with coal, gas and oil powering almost every aspect of our transport, manufacturing and domestic lives. Combined with this, the world's population has increased significantly since the 1940s, directly correlating with the technology innovations from the world wars. Since the 1970s, scientists have started to really understand (and agree) how carbon emissions have and are affecting our planet, its ecosystem and its climate – and not for the better.

The dramatic increase in population has led to greater production of food and manufacturing, and greater use of transport. It has led to a greater production of physical waste, and carbon emissions, such as exhaust fumes, to the point where the average world citizen produces 4.2 tonnes of carbon per year. Meanwhile an average tree absorbs only one tonne of carbon per year.

World population (Billion)



This may be a conceptually challenging topic to teach and discuss with children, as the scale of the problem may appear too large or unsolvable. We would like to suggest that this topic can be framed in a positive and optimistic way. It is possible to focus on the progress that has already been made in countries around the world with regard to waste reduction and processing. This macro change in mindset is a result of lots of micro, localised adjustments.

Pupils can explore the multiple causes of climate change and learn about the approaches that are being taken to mitigate it. In order to provide focus, purpose and connection to the issues, waste management is used in this unit as the principle discussion point as it is something that all communities all over the world can change – today and tomorrow.

Pupils can design and implement mini-projects to help reduce personal carbon footprints by considering waste management solutions in local communities.

The learning materials that have been created may be adapted to the context of each school and the needs of specific students. Some learning activities can be left out in order to enable deeper learning through other activities.

AGE RANGE

9-16 years

TIME

Ten lessons of 60 minutes each. Core lessons one to five are for all pupils, optional lessons six to ten are for older pupils, or for those pupils you wish to stretch further.

LEARNING OBJECTIVES AND CURRICULUM ALIGNMENT

This unit is designed to support the development of both knowledge and skills. The knowledge is about the causes of and potential solutions to climate change as part of the Global Goals for Sustainable Development. Among the skills that can be learned through this unit are core skills such as student leadership and personal development, and collaboration. We would recommend for each teacher to identify opportunities within the school's curriculum where this knowledge and these skills can be taught, whether it is English, citizenship, geography or other subjects.

DRAFT LEARNING OBJECTIVES

Student leadership: the process by which individuals empower others to make change, sometimes as role models, sometimes as catalysts for personal development in others.

Collaboration: working in teams to design a mini-project to support better waste management in the community.

PLANNING THE UNIT AND COLLABORATING WITH COLLEAGUES

Summary

Here are the suggested steps for planning the unit and collaborating with other teachers in your school or a partner school:

1. What do we want pupils to learn?
2. What would be the best way for them to learn this?
3. How will we know what they have learned?
4. What resources do we need?
5. What did pupils learn during the unit?
6. What other reflections do we have about the unit?



Zero waste

Tackling climate change through student leadership

Please use the planning template on page 3 to reflect further on these questions.

Learning materials that have been created for this unit:

Lesson 1: Introduction, what we already know about this topic, what we would like to find out, what we will be learning during this unit.

Lesson 2: Learn about carbon emissions, sustainability and climate change; explore data about carbon emissions and population.

Lesson 3: Explore leadership tools which can be used for identifying multiple causes and solutions and learn about the work of the Eco-bricks project which has managed to significantly reduce local mis-management of waste.

Lesson 4: Work individually to explore case studies on increasing effective waste management, and start to create a case for change within the community.

Lesson 5: Finish a summary of the case study describing the causes of climate change and the solutions that have been highlighted, present the summary to the large group.

Lesson 6: Explore what pupils can do to address poor waste management in their community, learn about Eco-schools, begin working with the seven steps toolkit.

Lesson 7: Collaboratively discuss a variety of ideas around how the problem being addressed could be solved.

Lesson 8: Plan the steps for the project, including resources, budget, people, and responsibilities; prepare for implementation between lessons eight and nine.

Lesson 9: Reflect on the project; what pupils learned about the situation, about collaborating with team-mates and about themselves.

Lesson 10: Share the results of the mini-project.

TEACHER'S PLANNING TEMPLATE

This can be used individually, in collaboration with colleagues in your school or your own country, or with teachers teaching the same unit in your own country or another country.

Question	Notes	Your thoughts
<p>1. What do we want pupils to learn?</p>	<p>Think about the most important learning objectives for this unit.</p> <p>Read through the materials that have already been created and consider what is most important for your pupils to learn.</p> <p>Reflect on the objectives suggested around student leadership and creativity and collaboration. Revise them if necessary.</p> <p>Consider the standards of your National Curriculum and reflect on which standards can be met through the <i>Zero Waste</i> learning unit.</p> <p>Be realistic about the time that you have available for this unit and what can be achieved in that time.</p>	
<p>2. What would be the best way for them to learn this?</p>	<p>Given the learning objectives you have decided on, think about the learning activities that would be most effective for your pupils, for example:</p> <p>What is the best way for them to learn about the current state of carbon emissions and waste management in their community, country and internationally?</p> <p>How to learn about the facts (data), and personal experiences (stories) that illuminate different aspects of the current situation.</p> <p>How to learn about the various causes of climate change.</p> <p>How this could be used as an opportunity to practise student leadership; for example, to participate in discussion by taking different roles.</p> <p>How to learn about the potential solutions to the issues of climate change and waste management, especially those that have been very successful.</p> <p>How to design a project that addresses waste management in their community.</p>	

Question	Notes	Your thoughts
<p>3. How will we know what they have learned?</p>	<p>Given the learning objectives you have decided on, think about assessment.</p> <p>How will you find out what your pupils already know about this topic before the beginning of this unit?</p> <p>Consider what sort of evidence you would need to see that pupils have learned the knowledge, skills or attributes you would like them to learn.</p>	
<p>4. What resources do we need?</p>	<p>Given the learning activities you are planning, think about the resources you will need.</p> <p>People – who would you like to engage in the unit, so that pupils can learn more about the causes of climate change and potential solutions?</p> <p>Written materials, music, art – what additional materials would be beneficial to your pupils in this unit?</p> <p>Places – where would it be useful for your pupils to learn during this unit?</p>	
<p>5. What did pupils learn during the unit?</p>	<p>During and after the unit, think about what pupils learned as part of this unit.</p> <p>To what extent did pupils meet the learning objectives of this unit?</p> <p>What other, surprising things did pupils learn?</p> <p>Were pupils confused by anything?</p>	
<p>6. What other reflections do we have about the unit?</p>	<p>During and after the unit, think about what went well with this unit and what could have been done differently, for example:</p> <p>Which learning experiences were particularly valuable?</p> <p>Were the learning activities appropriate? What worked well?</p> <p>What would you do differently next time?</p>	

LESSON 1

Introduction

PUPILS WILL:

- see pictures related to climate change and waste management around the world
- reflect on what they already know about this topic and discuss what they would like to find out
- analyse data about carbon emissions and the progress that has been made in various parts of the world
- find out what they will be learning as part of the unit.

NOTES ON CORE SKILLS

The first lesson is a great opportunity to share with pupils that this learning unit will be about core skills such as student leadership and creative collaboration. Experience and research suggest that when teachers make pupils aware of the skills that they are learning, whilst they are learning them (metacognition), then the cognitive impact is greater.

For example, a teacher might say:

“In this unit, we will be learning about the problem of waste management; how it affects climate change, what it looks like in various countries and how some countries are trying to mitigate it. At the same time, we will practise how to work with others, discuss and take different leadership roles, as well work collaboratively. We will explore this issue from the perspective of people who live in poor countries but also others who live in some of the richest countries.”

Notes on knowledge

Pupils’ awareness of the world, continents and countries will be expanded through the analysis of an infographic of the world on page 7. It may be worth spending some time comparing the infographic with a world atlas in order to secure pupils’ understanding of world geography.

Step 1

1. Share with pupils the pictures from the image gallery found from page 32 onwards. The images display the impact of poor waste management around the world. If possible, print out the pictures and share
2. **Resource sheet 1** on page 24 contains a KWL template.
3. Ask pupils what they already know about climate change and how the pictures represent the problem of climate change. Write down their ideas in the ‘Know’ column.
4. Ask pupils what they want to find out. Write down their ideas in the ‘Wonder’ column.

Step 2

1. Share with pupils the World mapper image on page 7. If working with younger children, you may have to highlight specific parts of the graphic or help them to interpret it. Look at the other [World Mapper images](#).
2. Write additional ideas in the ‘Know’ and ‘Wonder’ columns.

Depending on the questions pupils have already put forward, you may offer additional questions, such as:

- Why have some regions and some countries made much more progress in tackling carbon emissions than others?
- In some countries the situation appears to have become worse, why is that?
- What carbon emission factors can affect certain countries and not others? Do you have any examples?

Step 3

1. Discuss with pupils what we will be learning during this unit and how.
2. Share with pupils the expected learning outcomes (please update the objectives if necessary).

Student leadership – the process by which individuals empower others to make change, sometimes as role models, sometimes as catalysts for personal development in others.

Creative collaboration – working in teams to design a mini-project to support better waste management in the community.

3. Discuss with pupils what these objectives mean.

What does leadership mean? Ask for pupils' ideas. You might suggest that it means that we will look at how individuals or groups of people could become role models or planners to address the issue of waste management on behalf of a larger group of people. We will look at some of causes of climate change and pollution. We will look at multiple solutions that may be available to help reduce waste. We will look at waste management in different contexts and in various parts of the world, including poorer and wealthier countries.

What does creative collaboration mean? Ask for pupils' ideas. You might suggest that it means working in teams, coming up with a variety of potential ideas and solutions, and designing a project that tackles waste management in their community.

Potential collaboration with partner school

Discuss with colleagues in the partner school how you could explore multiple perspectives on climate change and waste. Perhaps pupils could:

- share pictures of different ways that people reuse and recycle in their community, and describe some of the most popular methods
- compile and share a summary about the problems of waste in their community
- read the summary that the partner school has created
- brainstorm questions about waste in the partner school's community or country that you would like to find out about during the unit.

World Carbon Emissions 2015 with country sizes adjusted to reflect CO2 emissions

We advise you to print this
A3 so as to make all text legible

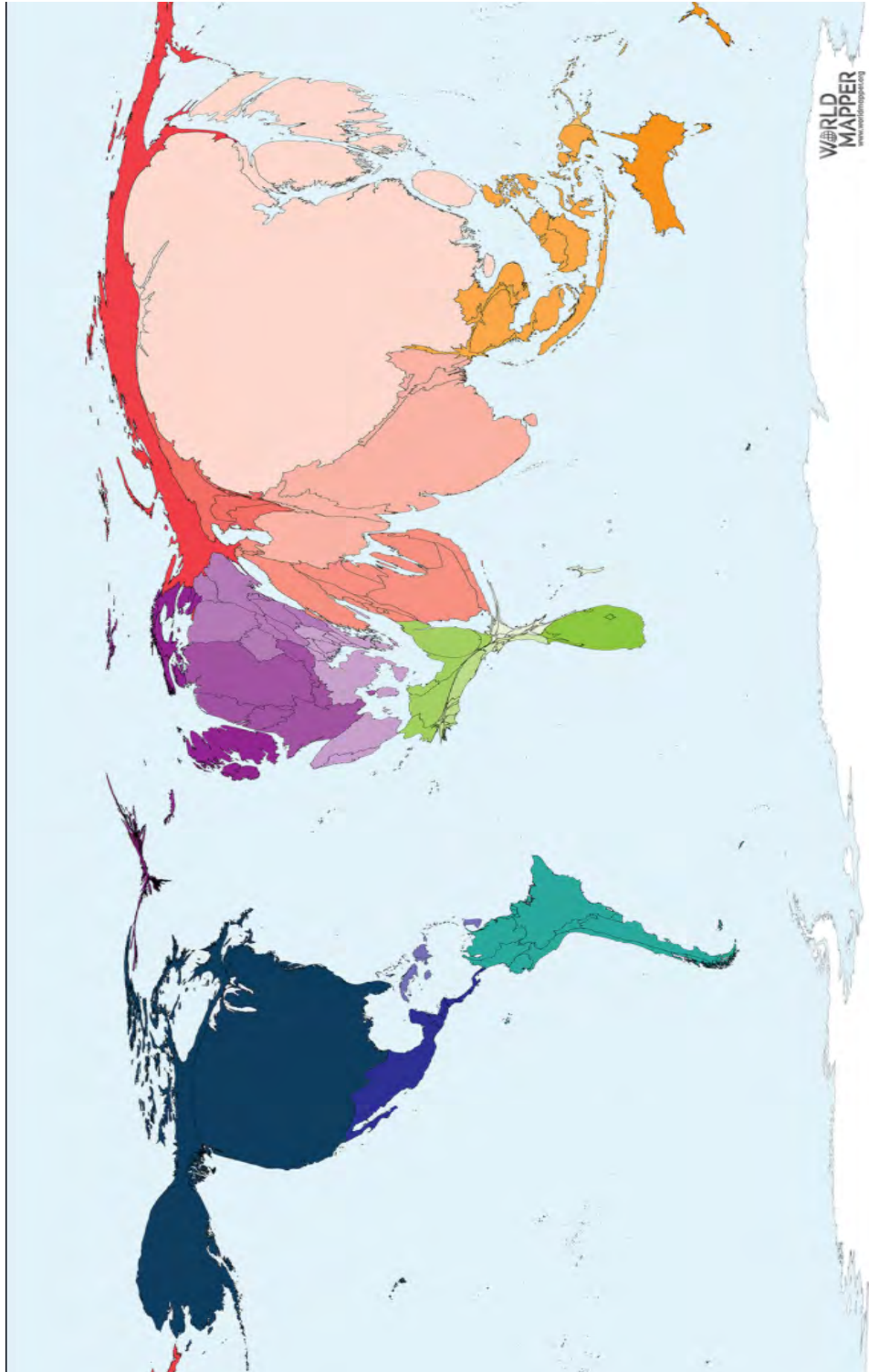


Photo credit: World Mapper (September 2018)
Source: https://worldmapper.org/maps/carbon-emissions-2015/?_sft_product_cat=pollution
Copyright: Creative Commons <https://creativecommons.org/licenses/by-nc-sa/4.0/>

CARBON EMISSIONS AROUND THE WORLD



Vocabulary

To decrease your carbon emissions – or your carbon footprint – is to reduce the amount of carbon-dependent materials you use. This includes how you dispose of existing products by reusing them or recycling them. Carbon dioxide (CO²) is produced by everything that we do directly, or indirectly, but some activities, such as flying, and the production of some materials such as plastic, emit large amounts of CO² into the atmosphere.

To help with visualising this, a tonne of carbon dioxide gas would fill the cube in the image above.

Key figures

Please note that the following figures date from January 2011.

The average global citizen generates 4.5 tonnes of CO² per year. China, by contrast, emits 6.7 tonnes per person, and Senegal only 0.43 tonnes.

Some of the world's smallest countries and islands emit the most CO² per person – the highest being Qatar with 35.7 tonnes per person.

Inspiring progress

Sweden has reduced its carbon per capita by 36% since 1990 to 3.9 tonnes per person in 2013.

Standing still

The US is still number one in terms of per capita emissions among the big economies – with 16.5 tonnes emitted per person.

Some key points on pure emissions alone

China emits more CO² than the US and Canada put together – up by 171 per cent since the year 2000. This could be linked to the dramatic increase in economic growth, industry or living standards (with more people owning cars than ever before).

The UK is now fifteenth on the list, reducing its production by eight per cent in one year, and is now behind Iran, South Korea, Japan and Germany.

India is now the world's third [biggest emitter of CO²](#), pushing Russia into fourth place.

Source: <http://www.theguardian.com/news/datablog/2011/jan/31/world-carbon-dioxide-emissions-country-data-co2>

LESSON 2

What's the problem?

PUPILS WILL:

- learn about how a region in India has managed to significantly improve waste management and the local economy (for all ages)
- learn about how Sweden is recycling 99 per cent of all waste (for older students)
- learn new words related to climate change, carbon emissions and waste management
- learn about the Sustainable Development Goals
- prepare to observe how poor waste management affects their community.

NOTES ON CORE SKILLS

Part of student leadership and personal development is the ability to engage in a group discussion, working collaboratively as a team and empowering others, without necessarily being at the front. The *DeBono Thinking Hats* model is one way for pupils to understand how to generate ideas from each other and work out solutions.

Notes on knowledge

Opportunities to develop students' sense of place within the world is important here. The activities below will help to increase subject knowledge in both physical and human geography, as well as map reading and the use of geo-political data.

Step 1

1. Share with pupils the glossary handout found on **Resource sheet 2** on page 25. They can use the glossary to find the meaning of certain waste-related words. For example, when the text on India says that there was a reduction in landfill waste from 20 per cent in 2011 to 60 per cent in 2015, what does this mean?
2. Pupils should read **Resource sheet 3** case study on page 26 about tackling poor waste management in India which has resulted in one of the fastest growing landfill issues in the world and show the [video](#)¹ about how it has been tackled. For a greater challenge, read the Sweden case study from **Resource sheet 4** on page 27.
3. After pupils have read the text, facilitate a conversation about the lessons learned. You might use some of the questions below:
 - What do you think about India's achievement of reducing waste and landfill?
 - It could not have been simple to create *I Got Garbage*, what would the project needed to have done to connect different people who could potentially help?
 - Where would they have started?
4. Student leadership involves working with others to understand a problem, evaluate it, draw out lessons learned and come up with methods for local implementation. Using *DeBono's Thinking Hats* model **Resource sheet 5** on page 28 look at the different factors that contributed to the positive changes, the hesitations, and the options they may have considered.
 - Are you surprised by the government's interventions to tackle the problem of excess landfill? Why?
 - What else would you like to find out about India's efforts to tackle waste?
 - Sweden case study: what are the commonalities of the success and differences between the two approaches?

Step 2

1. Use **Resource sheet 6** on page 31 showing data from 20 countries on waste and recycling². Encourage pupils to look at some of the data about waste collection and recycling in greater detail and link it to the examples of Sweden and India. Three questions are included below. Feel free to come up with additional questions that pupils would find interesting and useful.

- The first chart shows the amount of waste generated by the top 20 waste producing countries in the world. What surprises you about this list? Can you locate the countries on a world map? Might the geography of the country have anything to do with waste disposal?
- The second chart looks at the top 20 countries which are better at recycling. Which countries appear on both charts? Are there countries which appear on the recycling chart but not on the waste chart?
- The third chart looks at the top 20 cities in the world which have the highest levels of waste generation. Are there any countries here which appear on both the country waste generation and the recycling charts? Why might some cities be listed as the worst offenders but the countries they are in do not appear on the country waste chart?

2. One potential activity is to think about how to visualise some of the data included on the slides **Resource sheet 6**. For example, how to visualise the amazing progress that some smaller developing countries have made compared to the large international rich countries. Some examples of visualisations can be found at the [Atlas of Air Pollution](#)³, the [Waste Atlas](#)⁴ or the UNEP [infographics on carbon emissions and recycling](#).⁵

Step 3

1. This part of the lesson is optional. Explain to pupils that tackling climate change is one of the Sustainable Development Goals. Show one of these videos for [younger](#)⁶ or [older](#)⁷ students about the importance of global goals.

Step 4

1. Ask pupils to observe and think about waste in their own community. How it affects people, who it affects most, and why. These observations will be conducted by pupils over the next few days, and they will inform the mini-project that they will be doing in the second half of the learning unit.

Potential collaboration with partner school

Pupils could share with their partner school what they found most surprising when exploring data about carbon emissions and waste in various parts of the world.

Pupils from each partner school could share further questions they came up with, having learned about the current state of carbon emissions and waste management.

LESSON 3

Case study to explore causes and solutions

PUPILS WILL:

- explore a tool for student leadership, called the Golden Circles, to address why change needs to happen, not just what change is required
- learn about the work of Eco Bricks in different countries, and its solution to tackle waste by reusing plastic bottles creatively
- make a visual mind map to describe how Eco Bricks could be used in their local community.

NOTES ON CORE SKILLS

Another aspect of leadership is the ability to communicate why something is important, not just what to do or how to do it. Understanding that as a leader people look to you for inspiration and reasoning is an important lesson. It is not enough to just communicate what to do, but also why it is important in the first place. Martin Luther King did not write the 'I have a plan' speech, he wrote 'I have a dream'; he sold the vision.

Notes on knowledge

Pupils could use atlases and world maps to locate the Eco Bricks project on the planet and think about how the physical geography and human scale might affect the success of the project, for example taking in to account factors such as population, economy and transport links.

Step 1

1. Explain to pupils that when we want to change the way people think about something, or if we need them to help us achieve something, then it is useful if they understand why something is important, and perhaps why it is more important than what they are currently doing. You have to convince them that not only is it important to believe something else, but that they are going to benefit from changing their mindset.
2. It might be useful at this point, and if time allows, to briefly examine the *Golden Circle* work of Simon Sinek. Explain to pupils that his theory is that people will accept change more readily, and work harder towards a goal if they fully understand not only what they are required to do, but more importantly why they are required to do it. Sinek's TED talk on the subject can be found [here](#),⁸ [further information](#)⁹ and an [executive summary](#)¹⁰ are also available to help with your planning.
3. First, let us watch a [video](#) about the work of Vision Eco Bricks.¹¹
 - Did anything surprise you about the video?
 - What did you learn?
 - What were you confused about?

Step 2

Ask pupils to look through the [Plastic, the Environment & Ecobricks guide](#). Even though it is a long document, it is very pictorial. This could be done online, individually or as a whole class.

1. When pupils have read the guide, they should write down their thoughts on two questions:
 - What is the connection between the pollution of our bodies and the pollution of the planet?
 - What does the Ecobrick initiative help to achieve that other solutions have failed to do thus far?

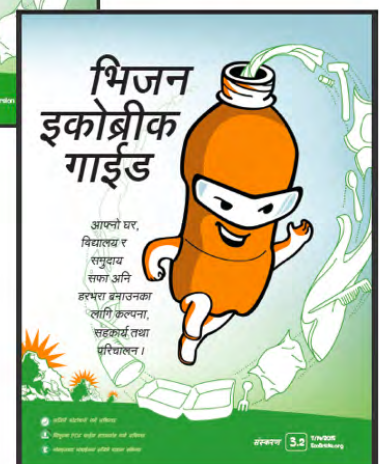
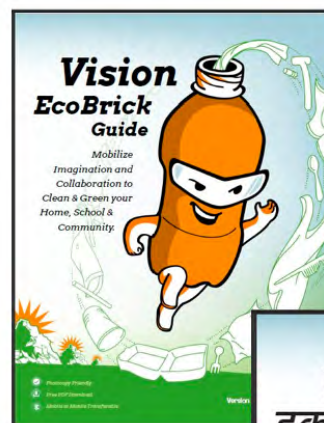
Step 3

- As pupils have already seen from the video and read from the guide, Ecobricks are trying to address a number of issues simultaneously.
- Let's review the diagram on the next page which explains the basic framework.
 - Plastic bottles, although recyclable, will eventually lose their recyclable qualities and the plastic will find its way into the earth and sea.
 - The degrading plastic can cause serious harm to health, not only in humans, but also in animals and sea life.
 - Ecobricks can be used in remote parts of the world, as the transport of plastic bottles is easy, they are readily available, and are filled using waste plastic bags, other non-recyclable waste or local earth.
 - Ecobricks can also connect a community through visioning a better future, as well as helping to provide much needed buildings such as homes, schools and playgrounds when other conventional building materials are scarce or expensive.
- Ask pupils to look at the map on the next page which demonstrates how much plastic makes up the total amount of waste per country. Ask them to match this map to a world map to discover which countries have the highest plastic waste, and consider if this challenges or reinforces the findings from the earlier data sets.
- Ask the pupils to imagine that they are leading the Ecobrick project in their community, in groups ask them to consider:
 - why Ecobricks are a solution to climate change
 - how Ecobricks are made
 - what they can be used to make – this is where their imaginations can be used freely and they can collaborate creatively about using Ecobricks as solutions to address needs in their communities.

Potential collaboration with partner school

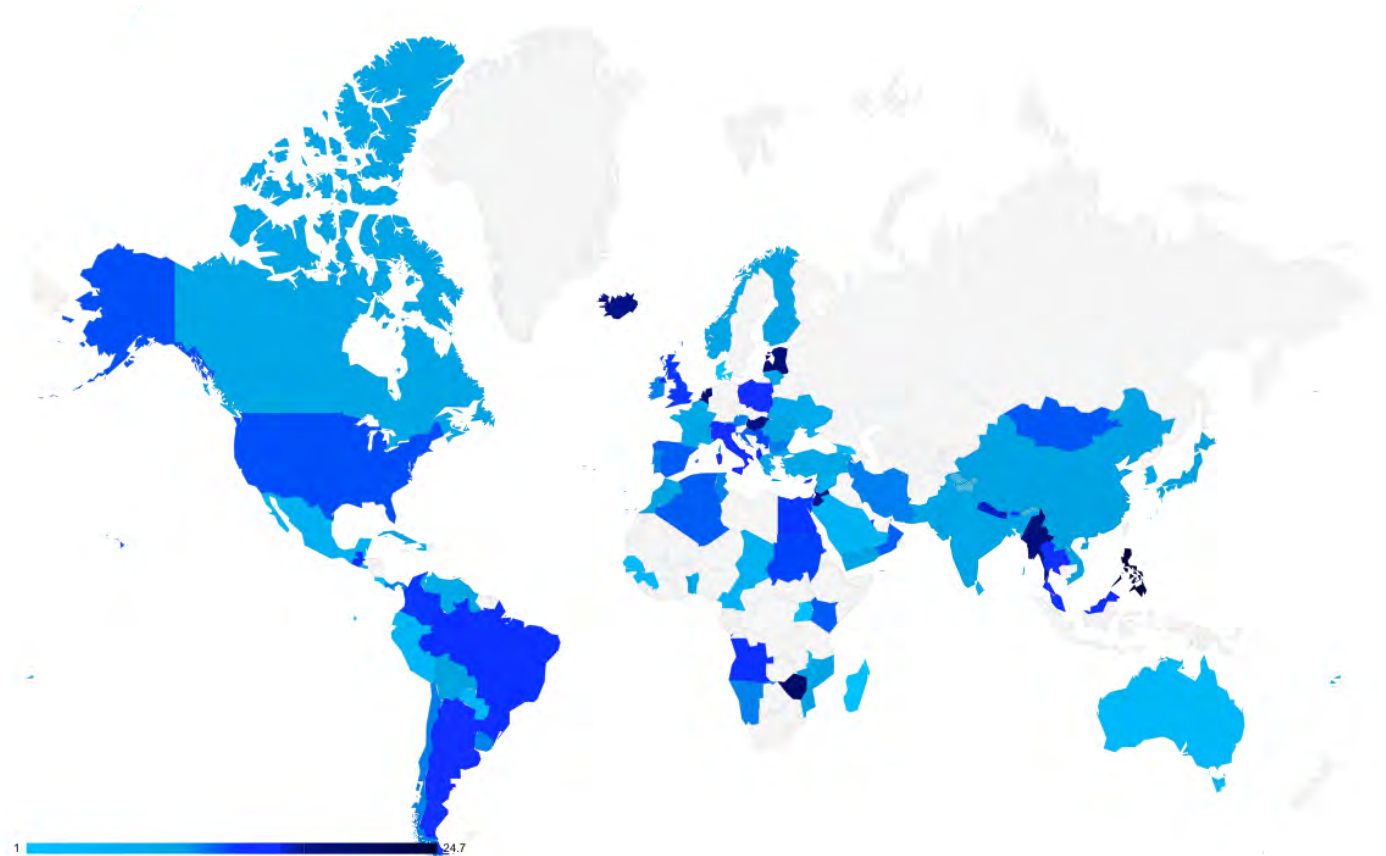
Pupils might discuss and share their opinions on the following questions:

- what sort of approaches to tackling climate change and waste are in place in your community or country?
- how is the Ecobricks approach to tackling waste similar or different to the approaches in your community or country?
- what do you think about these approaches? Which approach works best? Why?



Notes: The Ecobrick guide is available in many different languages and can be downloaded here: <http://www.ecobricks.org/download/>

The percentage of the plastic fraction in the country's waste composition



Source: Waste Atlas
Available at: http://www.atlas.d-waste.com/visual_maps/Plastic.html

LESSON 4

Case studies to explore multiple causes and solutions

PUPILS WILL:

- work in small groups to explore the strategy of reduce, reuse, recycle
- consider how they might reduce their carbon footprint by considering what they could reduce, reuse or recycle in their everyday lives.

NOTES ON CORE SKILLS

In this lesson pupils will think critically and explore the multiple causes of and potential solutions to the problem of waste mis-management. They will continue to practice exploring evidence and looking at an issue from multiple perspectives. Both habits are important for leaders to ensure that they are well informed and aware of multiple perspectives; it would be helpful if the teacher explained this to pupils.

Pupils will also use DeBono's Thinking Hats (Resource sheet 5) as a way of strategically thinking through an issue collaboratively. Pupils will first work individually to explore different case studies, and will then work as a group to work through the case study or studies, summarising them. In many jobs or tasks it is impossible for one person to know everything, therefore thinking needs to be systematic, leading to well thought out and robust actions.

Notes on knowledge

Using newly acquired, or consolidated map reading skills, pupils could locate the different case studies in the world and think about how the physical geography and human scale might affect the success of the different projects and compare them. They could take in to account factors such as population, economy and transport links.

Step 1

1. Pupils are divided in groups of three pairs. Each pair will explore a different case study: Ecobricks in India (revisit), Zero Waste in Sweden (new or revisit) and Litter Less in Uganda **Resource sheet 7** on page 30. Pupils can choose themselves which one they would like to read. It is important that all three case studies are read by someone from each group.

2. Pupils are encouraged to read in pairs to help discuss and verbally rehearse information. This is an important step and should not be missed. Teachers may like to choose who reads the new case study, as assimilating new information is a more complex task than revisiting.
3. The first task for each pair is to read the case study and highlight the key facts and information.
4. Optional activity: the teacher may print out and share with pupils additional examples of how carbon emissions and waste management are addressed in unique ways. The purpose is to provide pupils with further examples of how awareness has been raised for different audiences such as children or adults. For example:
 - [infographics](#)¹² to raise awareness about issues such as recycling or the increase in fossil fuel consumption
 - using [comics](#)¹³ to tell stories about good recycling behaviours
 - using [concept cartoons \(drawings\)](#)¹⁴ to raise awareness among illiterate communities about dangers of burning waste.

Step 2

1. Each student within the group of six (three pairs) chooses a different coloured thinking hat.
2. The coloured hats from each group then meet to form single coloured thinking hats groups, for instance all of the yellow thinking hats – optimism, benefits and positives – join together.
3. Pupils are given a short amount of time to discuss the issue of 'Climate Change And Waste Management' from their hat's perspective. Each student should be encouraged to note down what the other members are saying as they will use this later on.

Further steps for this activity are in the following lesson.

LESSON 5

Analysis of case studies, beginning to prepare for mini-projects

PUPILS WILL:

- finish a summary of their case study, describing the issues around climate change, carbon emissions and waste management and how some countries are addressing these problems
- present the summary to the class or group
- discuss observations of how poor waste management affects their own community.

NOTES ON CORE SKILLS

This lesson is about communication of a vision as well as the action – a key leadership skill. Linked to the previous session, it encourages pupils to refine their thinking and verbal arguments by considering the multiple perspectives. Effective leadership however is not just about sharing a vision, but about doing this effectively and convincingly.

Also, at the end of the lesson, teams can discuss how poor waste management affects their community. They can begin to think which specific problem they would like to address with their mini-project.

Step 1

1. Each student returns to their original group. This should mean that each group has a representative from each of the six coloured hats.
2. The group revisits the discussion title 'Climate Change And Waste Management', starting by sharing what was discussed in each coloured thinking hat group. As each pupil shares the discussion with the original, multi-coloured group, notes should be taken.
3. The groups should then take it in turns to read through the notes and produce a one-line summary of each hat. They can rehearse sharing this out loud, ready to share with the wider group or class as a whole publically.
4. Each group then takes it in turn to present their thinking to the other groups.

Step 2

1. Different activities could be engaged in following the summary presentations depending on how you are using these materials. For example, the outcome you choose may change depending on if you are using it to enhance objectives being taught in English, or as a context for geography. Here are some possible outcomes:
 - individual writing up of the points shared, creating a well balanced report.
 - small group posters (written, drawn or electronic) detailing issues, using the points shared in the presentations.
 - creating a persuasive argument, written or spoken, ready for a debate or newspaper article.
 - creating an information leaflet, with key facts and solutions, for a specific audience, such as the community. The form of the information will be dependent on the common level of written literacy of the community and so this could be a series of labelled diagrams (like a comic book), or a published written leaflet.

This is an important step before beginning to plan mini-projects in the following lesson.

LESSON 6

What children can do to tackle poor waste management

PUPILS WILL:

- explore what they can do to address poor waste management in their community
- familiarise themselves with the first three steps of *Eco-Schools' Seven Steps*
- decide in groups which of the ten themes of Eco-Schools they would like to address
- plan how to go out in to the community and interview people to understand their concerns.

CORE SKILLS

An important step in the process of leadership is the ability to assess different options so that the choices made will have the most impact of the greatest number of people. This session provides an opportunity for pupils to decide what they want to do. The lesson begins by revisiting the Less Litter Campaign case study from Eco-schools which shows that even young children can make a difference when tackling waste.

Notes on knowledge

This lesson exposes the pupils to many different areas of the world, and is a key opportunity for them to compare and contrast their own setting with the settings featured in the chosen case studies. Some of the work can be modified according to age groups; younger pupils could simply locate, compare and contrast physical topography, whilst older pupils could look at the socio-economic features of the communities mentioned and how this affects the social action projects.

Step 1

1. Show a [video](#)¹⁵ about the work of Eco-Schools Global, a worldwide organisation that creates local action organised by students.

Give the pupils 20 minutes to look at the different case studies on the Litter Less Campaign. There are many on the site, and each is only a few brief sentences, some of the more interesting ones are listed below:

- Lebone li College Of The Royal Bafokeng South Africa
- Ostrava Elementary School, Nádražní Czech Republic
- Second Primary School Of Geroskipou Cyprus
- Ebbw Fawr Community Learning School Wales.

2. Facilitate a conversation about the case studies and video.

- What were the first three steps in the video?
- What were the key messages that you heard from the video?
- How did the case studies relate to the first three steps of the video?
- Out of the case studies, which approaches do you think would work well?
- What do you think about these approaches? Benefits? Hesitations? Opportunities?

Step 2

1. Share with pupils the [Seven Steps](#)¹⁶ toolkit and focus on the first three steps:

Step 1: Form an eco committee

Step 2: Carry out an environmental review

Step 3: Action plan

2. The rest of the steps can be looked at when and if the pupils want to continue.
3. Ask pupils to work in groups of four or five.
4. Focus on Step 1 and Step 2. Before this lesson, pupils will have observed how waste affects their community. In the previous lesson they discussed their observations. Now they will begin planning their mini-projects. The first task is deciding which aspect of the problem to address. After reminding group members of their main observations, each group votes for which aspect of waste management they would like to address with their mini-project.
5. In their groups, pupils plan how they will go out to speak with people affected by waste mis-management. The purpose is to interview people, understand their concerns and begin thinking about how the situation could be improved. This will help the group in the third step of the seven step process.

SEVEN STEPS

The most important aspect for schools to remember is that each one is different and it is therefore critical that a school fits the seven steps around its circumstances and situation and not try to fit the school into the seven steps. Some key points about the individual steps are below.¹⁸

Question	Some questions to consider
<p>Step 1: Form an eco committee</p> <p>The Eco-Schools committee is the driving force behind the Eco-Schools process and will represent the ideas of the whole school.</p> <p>It is student-led.</p> <p>The eco committee ensures that the entire school knows about Eco-Schools and will receive regular updates.</p> <p>Composition can be: students/teachers/the principal/non-teaching staff (e.g. secretary, caretaker, cleaner)/parents/members of the board of management/interested and relevant members of the wider community.</p> <p>The eco committee meets regularly to discuss environmental actions for the school.</p>	<p>Some questions to consider</p> <p>Who might sit on your committee?</p> <p>How might you get community members to take part?</p> <p>How will you collate the views and issues of the different groups to help start your thinking?</p> <p>How will you inform people of your purpose, why, how and what you are aiming to do?</p> <p>Read how a school achieved this: Mini-case study 1 Mini-case study 2</p>
<p>Step 2: Carry out an environmental review</p> <p>Carrying out an environmental review helps the school to identify its current environmental impact and highlights the good, the bad and the ugly.</p> <p>The aim is to investigate the environmental issues in your school or community.</p> <p>All ten main themes should be reviewed annually (the school is free to choose other areas of environmental concern that are more relevant to its needs and to devise appropriate checklists accordingly).</p> <p>Make sure that the wider school community works as closely as possible with the eco committee to carry out the review. It is essential that as many pupils as possible participate in this process.</p> <p>The results of your environmental review will inform your action plan.</p>	<p>Some questions to consider</p> <p>Which of the ten Eco-Schools themes are most relevant to you?</p> <p>How will you engage the eco committee to carry out the review?</p> <p>What will be looked at?</p> <p>How will this be recorded?</p> <p>How will you involve as many people as possible?</p> <p>Read how a school achieved this: Mini-case study 3 Mini-case study 4</p>

<p>Step 3: Action plan</p> <p>The action plan is the core of your Eco-Schools work and should be developed using the results of your environmental review.</p> <p>Use the environmental review to identify the priority areas in your school. To keep it manageable we suggest focusing on no more than three themes at a time.</p> <p>Create an action plan to resolve those problems or improve the situation. It should include: the necessary tasks, the people responsible, and time frame for actions in order to achieve your goals or targets.</p> <p>Make your action plan SMART (Specific, Measurable, Attainable, Realistic and Timely).</p> <p>As with every aspect of the Eco-Schools process, pupils should be involved as much as possible in the drawing up of the action plan.</p>	<p>Some points to consider</p> <p>Looking at the results of the environmental review, what were the top three issues that people were concerned about?</p> <p>Pupils can ask an adult to help them plan a SMART action plan (a template can be found below).</p> <p>Read how a school achieved this: Mini-case study 5 Mini-case study 6</p>
<p>Step 4: Monitor and evaluate</p> <p>To find out whether or not you are successfully achieving the targets set out in your action plan, you must monitor and measure your progress.</p> <p>As always, pupils should be given the responsibility for carrying out monitoring activities wherever possible.</p> <p>Results of monitoring should be regularly updated and displayed for the whole school to see.</p> <p>The monitoring methods that you use will depend on the targets and measurement criteria decided on in your action plan for the topics you wish to look at and the age and ability of the pupils and other individuals who carry it out.</p> <p>Evaluation follows on from monitoring. Evaluating the success of your activities will allow you to develop and make changes to your action plan if required.</p>	<p>Some questions to consider</p> <p>How will the eco committee carry out the monitoring and evaluation of the action plan?</p> <p>How will you ensure that the evaluation is a multi-perspective representation of the situation and not just one person's findings?</p> <p>Read how a school achieved this: Mini-case study 7 Mini-case study 8</p>
<p>Step 5: Curriculum work</p> <p>Besides increasing the status of the programme, linking Eco-Schools activities to the curriculum ensures that Eco-Schools is truly integrated within the school community.</p> <p>Integrating the programme into the curriculum can be done either directly through science, civics and environmental classes or indirectly in other subject areas through innovative teaching.</p> <p>Pupils throughout the school should gain an understanding of how real life environmental issues are dealt with in a real life setting.</p>	<p>Some questions to consider</p> <p>How could the eco committee work with teachers to find opportunities to teach about climate change?</p> <p>Who would help?</p> <p>Would an Eco Week help to kick start it?</p> <p>Read how a school achieved this: Mini-case study 9 Mini-case study 10</p>

<p>Step 6: Inform and involve</p> <p>Get everyone on board – actions should not just be confined to the school – for example, pupils should take home ideas to put into practice.</p> <p>It is essential that the whole school is involved in, and the wider community aware of, the school’s Eco-Schools programme.</p> <p>Means of information provision and public relations to tell people about the work can include: school assemblies, school notice boards, school newsletters and websites, school plays, dramas and fashion shows based on environmental issues, letters to businesses and corporations, local and national press, and radio and television.</p> <p>Organise and hold global action days.</p>	<p>Some points to consider</p> <p>Which of the activities here will help the eco committee to further raise awareness of the aims, plans and actions of the group?</p> <p>How might using a global action day support the movement?</p> <p>Read how a school achieved this: Mini-case study 11 Mini-case study 12</p>
<p>7: Produce an eco code</p> <p>A statement that represents the school’s commitment to the environment.</p> <p>It should be memorable and familiar to everyone in the school.</p> <p>The format is flexible, it could for example be a song, a drawing, a model, or a poem.</p> <p>The eco code should list the main objectives of your action plan.</p> <p>It is crucial that pupils play a key role in the development of the eco code, as this will give them a greater sense of responsibility towards the values that the eco code represents.</p> <p>The content of the eco code should be reviewed on a regular basis to ensure that it continues to reflect the school’s ecological aims and targets.</p> <p>The eco code should be prominently displayed throughout the school and community.</p>	<p>Some questions to consider</p> <p>How could setting a home learning challenge, homework or a competition help?</p> <p>How will the eco code be distributed around the school and the community?</p> <p>How will the code include other members of the community and not just the school?</p> <p>Could you include local businesses, government officers or neighbouring schools?</p> <p>Read how a school achieved this: Mini-case study 13 Mini-case study 14</p>

LESSON 7

Continue designing the mini-project

PUPILS WILL:

- work collaboratively to imagine a variety of ideas around how the problem that they are addressing could be solved.

NOTES ON CORE SKILLS

At this stage of the learning unit, the focus is on teamwork, collaboration and leadership. A pupil from each group should facilitate. Previously pupils have learned about the various causes of climate change, in other countries and in their own community; now is the time to come up with mini-projects to address them. It is important to try to create the right conditions for collaboration and leadership in the classroom. Teachers could encourage pupils to come up with their own ideas, and not criticise anyone else's. Using De Bono hats may also help collaboration.

Notes on knowledge

This lesson is wholly dependent on the level of local knowledge the pupils have. If pupils are unfamiliar with the needs of the community, then the teacher may decide that a walk around the local area (if appropriate) might help raise their awareness of the issues they see. Information can be gained from posters, health centres, and generally looking around the local area to notice potential issues, such as littering, non-collection of waste or lack of recycling areas.

Step 1

1. Remind pupils in their groups of the problems concerning waste management which they decided to address in the previous lesson.
2. Pupils work in groups to imagine a variety of ideas that could start to populate the first column on the SMART action plan. The teacher encourages pupils to be creative and collect as many ideas as possible.
3. It is important to remind pupils not to criticise others' ideas. Instead, they should be encouraged to build on the ideas of others and consider how they could enhance their own ideas and be applied to the school setting.

Step 2

1. At the end of the session, each group will vote for the ideas that best address each part of the situation. This will be the **S** of the SMART action plan, which stands for specific. A specific idea is one that contains what and how statements. An example has been completed in the action plan below **Resource sheet 8** action plan on page 31.

In order to successfully implement the changes that we need to make to solve the issues we have identified, we now need to be clear in our planned actions.

Potential collaboration with partner school

Each group of pupils might share with pupils in their partner school the specific problem that their mini-project will focus on, and some ideas around how to address this problem.

An interesting opportunity for collaboration would be if student teams from two schools could actually work together when solving a similar challenge. For example, pupils could jointly design an awareness campaign that highlights the progress and challenge of recycling in different countries. If pupils from two different countries worked on this project together, they could show that waste management is a shared issue for everyone.

LESSON 8

What can we do to improve the situation?

PUPILS WILL:

- plan the steps for their project, including aspects such as resources, budget, people and responsibilities
- prepare to implement the project.

NOTES ON CORE SKILLS

The teacher may want to highlight one important aspect of leadership – not just coming up with new, exciting ideas but also empowering and encouraging others to make them happen. This session is very practical in nature, and is an opportunity for pupils to think through, in detail, everything that needs to be done to implement the project.

Notes on knowledge

If possible, it may be helpful for pupils to engage in background or secondary research. Access to the internet, or information pulled from it, may be helpful in being confident in what they could aim to achieve in their action projects.

Step 1

1. Given the idea (**S** of the action plan) that their group voted for in the previous lesson, pupils work in their groups to complete the rest of the action plan for the mini-project.
2. Pupils should complete the remaining **MART** of the action plan as a group.
3. The most successful initial projects are often the simplest. It can be helpful to think geographically small in the first phase, for instance targeting a part of the school or community, not the whole. Once the mini-project has been tested, it can be adapted and launched over a wider area. Teachers should remind the pupils that a small first step with good intentions is still a step towards a solution.

Step 2

4. Prepare to implement the mini-project. This will happen between lessons eight and nine. Go out and put your plan in to action.



LESSON 9

Reflect on the mini-project



PUPILS WILL:

- reflect on their project: what they learned about the situation, about leadership, about collaborating with team-mates, and about themselves.

CORE SKILLS

All leaders that have made significant contributions to the world did not do so on their own – they empowered others to make the change. However, reflection is a key part of the process. One has to think carefully about the implementation of the project and capture what was learned.

Notes on knowledge

How will pupils ensure that they record the impact of their projects accurately? It may be worth exploring with the pupils how to quantify results, such as the skills of being accurate when collecting data or drawing graphs to present data. Qualitative data collection skills may also be required such as interview techniques to create open, non-biased questions.

Step 1

1. Pupils in their groups should reflect on their projects. Using the *DeBono Thinking Hat* approach, they should write down points to the following questions:

- White – what were the main activities that you implemented?
- Red – how did different sets of people react? Students, staff, community?
- Black – what did not go as well as planned? What were the barriers or challenges you discovered?
- Yellow – what did the mini-project achieve? What has changed as a result of the mini-project? If there were barriers or challenges, how did you get over these?
- Green – what changes would you make, if you were to:
 - repeat it?
 - make it bigger?
 - connect different groups of people to do it together?
- Blue – what changes will you make? What plans do you have to make the project bigger and reach more people?

Step 2

If there is enough time, groups can begin planning how to share the results of their mini-projects with others. They could revisit and rewrite the SMART action plan to achieve even more change and reach a larger audience.

LESSON 10

Share the results of the mini-project

PUPILS WILL:

- share the results of their mini-projects.

NOTES ON CORE SKILLS

In the final lesson of this learning unit, pupils are encouraged to share the results of their mini-projects. How does this relate to core skills? In two main ways. First of all, by sharing with others what worked and what did not work. This helps other people learn more about how student leadership can help address climate change and waste management. In this way, everyone can develop a better understanding of the multiple causes and potential solutions of climate change, and what they could do about it. As a result, everyone will be healthier, feel better connected and optimistic about the future. Secondly, sharing the results of mini-projects will hopefully inspire others to get involved and try tackling this challenge in their own communities. The mini-projects could even be uploaded on the [Eco-Schools site](#).

Notes on subject knowledge

This is a perfect opportunity for pupils to acquire or develop their writing and public speaking skills. Providing practice time and appropriate feedback on how they are presenting would be very useful for them. Making it a live presentation to a wider audience such as assemblies, senior management team, another school or community members might seem daunting but it is a great way to provide and develop life skills.



Step 1

1. Pupils work in groups to share the results of their project. They should consider the following points and questions:
 - How will you share the results of your mini-project and your review of the work done and the results?
 - Consider the needs of your community and revisit the possible communication techniques from lesson four, step 1, point 4.
 - What could you produce, showing the results and impact of your project, that you could share? For example a poster or presentation, a cartoon or drawing?
 - What local media could you share your story and future plans with?

Step 2

1. Pupils should revisit the seven steps, and consider how to implement steps 4, 5, 6 and 7 in reference to their project.
2. Social media may also be a great way to spread the messages and lessons learned throughout the community and raise interest from businesses and other concerned parties.

Potential collaboration with partner school

Each group of pupils could share with pupils in their partner school the results of their mini-projects, for example, through photos, a short video or a blog post.

RESOURCE SHEET 1

Zero Waste – KWL chart

What do we already Know about this topic?	What do we Wonder about this topic? What questions do we have?	What have we Learned about this topic?

RESOURCE SHEET 2

Waste Glossary

Waste

Excess products that are not wanted by a person. This could be wrapping or packaging, part of a product – such as vegetable peelings, or items not wanted anymore.

Biomass

The fuel produced when food and green waste is recycled and broken down. Changes in technology mean that some vehicles are now being created that use biomass fuel, or biofuel, instead of petrol.

Carbon emissions

The amount of carbon which is generated or given off in the process of creating a product, or created during the use of a product. To create petrol for cars, carbon is released when crude oil is turned into petrol. Then when the petrol is being burned in cars, carbon is emitted as CO₂ and CO (carbon monoxide) in the exhaust fumes.

Incineration

The process of burning, and specifically in this case burning rubbish. When this is done commercially in controlled factories, it can be productive and actually produce electricity, but when burnt locally in communities, it can result in the production of toxic fumes and carbon emissions.

Landfill

A landfill site is a site for the disposal of waste materials by burial. Waste materials which are not recycled or incinerated generally tend to end up in landfill sites.

Reduce

Reduction of waste can be influenced by the choices people make every day to reduce the amount of packaging or waste that might be generated if they shopped normally. This usually involves buying products made out of recycled or recyclable materials, and choosing food and products which are surrounded by less packaging, particularly plastic packaging.

Reuse

Products that are used again after the initial use, often for a different purpose but without processing or changing them. Examples include glass jars which are cleaned and used again to store other food products, or clothing which is cut up and used to make blankets.

Recycling

When things that are thrown away are processed and turned into a new version of the same product (old broken glass turned into new glass bottles), or turned into something new (old plastic bottles turned into fleece clothing or blankets).

Municipal solid waste generation

Rubbish and food waste that the average person throws away and is collected by the authorities.

RESOURCE SHEET 3

India – recycling, employment and community cohesion

India has managed an amazing achievement, resulting in the:

- reduction in landfill waste from 20 per cent in 2011 to 60 per cent in 2015
- reduction in new landfill required
- significant reduction in transportation costs, by avoiding trips to landfills
- reduction in carbon emissions from the use of bicycles to collect waste from hard to reach communities
- increase in local economies
- increase in standards of living.

How was landfill waste significantly reduced and unemployment addressed?¹

The traditional rag pickers in the region of Bengaluru, currently divert about 20 per cent of the region's waste from landfill by picking through it, and selling the recyclable items to businesses and merchants. Although this is one way of feeding your family in India, the effort put in and wages gained are disproportionate and most rag pickers live on the streets with their families. In fact, many of the children, as young as seven, are forced to work as well, in order to help the family survive.

Through the scheme, over 7000 rag pickers are now Recycling Managers. In one area alone, four Recycling Managers have been created which has saved 61 trees and 120m³ of landfill space through collecting 14 tons of waste.

I Got Garbage is a project made possible by one person's idea being invested in by local, then regional NGOs. It started with a single town where the local rag pickers were given uniforms and asked to collect rubbish directly from apartments, business and hotels and sort it into wet and dry recycling, and 'reject' (landfill). The local collectors then take the wet and dry recycling to centres where they are paid a fair wage for the amount they collect.

This [video²](#) helps explain the concept.



¹ I Got Garbage. (2016). [online] Available at: <http://www.igotgarbage.com/>

² YouTube. (2016). *I Got Garbage - a Mindtree initiative*. <https://www.youtube.com/watch?v=LsaGE1A5wl8>

RESOURCE SHEET 4

Sweden – Nearly zero waste

Sweden has managed an amazing achievement, resulting in:

- the reduction in landfill waste by 99 per cent, only 1 per cent of all waste goes in to landfill
- 38 per cent of all waste was recycled in 1975, with 99 per cent in 2015
- 50 per cent of waste collected is burned and turned in to energy.

How have they achieved 99 per cent success (or 1 per cent waste)?¹

Despite the country producing three times more waste since 1985, nearly all of the waste from households is collected from mini-community waste points and either recycled or incinerated to produce electricity. The success is in part due to the co-operation of households in carefully separating their waste into different materials: glass, plastic, paper, cardboard, electrical appliances, light bulbs, batteries, metal, and landfill. Food and green waste is also collected and this is composted and sold commercially to help fund the process. Generally, recycling stations are no more than 300 metres away from households meaning that it is easy and convenient for the community to sort and drop off recycling and waste. As the community is collecting their waste, the local authority collections (which use electric or biomass vehicles) help to significantly reduce carbon emissions.

The solution is not perfect however as whilst a lot of materials are recycled in very efficient ways, 50 per cent of waste collected is used in special incinerators to generate electricity. Whilst this means that these waste products do serve a purpose, in helping to provide power, it should also be noted that reusing or recycling materials or products means using less energy to create a product, than burning one and making another from scratch. As the CEO of the Swedish Waste Management and Recycling Association, Weine Wiqvist, points out, it still takes more energy to create a new version of a product (and therefore more carbon emissions) than it does to recycle it. Therefore, whilst the recycle or incinerate solution has meant that the issue of waste has been effectively dealt with, the overall carbon footprint of the country is in fact increasing.

This [video](#) helps explain the concept.²

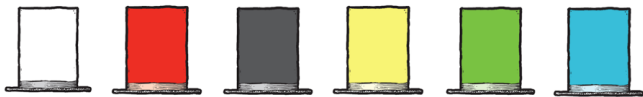


sweden.se. (2013). *The Swedish recycling revolution*. Available at: <https://sweden.se/nature/the-swedish-recycling-revolution>
Vimeo. (2014). *Importing garbage for energy is good business for Sweden*. <https://vimeo.com/103801887>

RESOURCE SHEET 5

De Bono's thinking hats

De Bono's six thinking hats¹ can be a very useful tool for helping students and adults alike to consider different aspects of the same situation. Edward De Bono, a French educationalist and philosopher, states that we have a tendency to think in a particular way, stance or direction; very rarely do we actually objectively consider all sides of the issue. The six thinking hats are metaphoric, in the sense that you are encouraged to put the hat on in order to focus thinking in a specific way. You repeat this by going through all six hats and therefore viewing something from all sides.



De Bono's Thinking Hats

White: facts, evidence, measures. Red: emotions, passion, intuition. Black: problems, caution, . Yellow: positive, benefits. Green: ideas, creative thinking. Blue: planning, summarising, thinking about thinking

The six thinking hats are designed to do exactly that: help people to think about one thing from all sides. Having explained each hat to pupils you might like to ask which ones they favour, or which ones they tend to enjoy wearing. One thought is that one should try to wear the hats that we are least likely to choose more often, as it is in the wearing of these hats that we can balance out our thinking as opposed to reinforcing one particular way of thinking.

There is no right or wrong order to use the hats, but within the coaching world the order is generally used as shown above from left to right. Despite there being no rules of use, it is recognised that following the black hat with the yellow, before considering green is more helpful as it yields possible solutions, rather than using green after black which can focus on finding answers to hesitations. Most start with the white hat, and really the process should end with the blue hat, as planning what to do next, when and with whom, will motivate change.

Some teachers actually make coloured hats or wear caps to help with the act of putting on a thinking hat... and then taking it off again. This last part of taking it off is critical as if a hat is not taken off the person can dwell on that mode of thinking for too long.

There are three general methods for using the hats, with the most common (and the one we would suggest you use in the lesson) listed first.

Method 1 – All together

Taking each hat at a time, the whole group discusses the viewpoints of that colour noting down the responses. This method is good for getting to know the hats and for pupils to practice the soft leadership skill of encouraging others to participate and valuing others' contributions.

Method 2 – Coloured then mixed

Divide pupils into groups of five; one person per hat with the exception of blue (that happens at the end). Ask all of the same coloured hats to regroup so that all the red hats are in one corner of the room, the green hats in another and so on.

Decide on the statement or question: make this visible so all people wearing hats can see.

Everyone in the groups discusses what their hat might think with reference to the statement. Pupils should be encouraged to note down responses. This method is really good for sharing ideas, pooling knowledge and supporting those who are less confident in speaking for whatever reason, to go back to their group with ideas, even if they are not theirs.

The same coloured hat groups then break up and reform their original mixed groups, taking it in turns, in the order of the hats to share what their coloured hat group discussed. Then the group all wear the blue hat to plan what could happen next.

Method 3 – Parts that form the whole

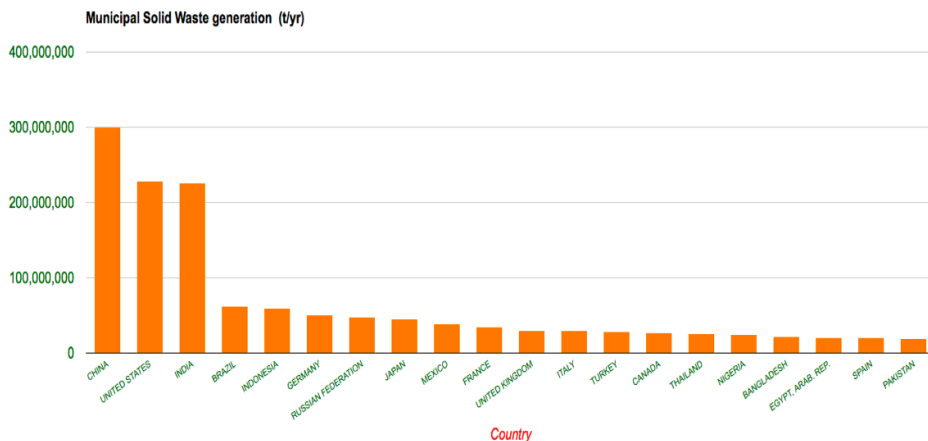
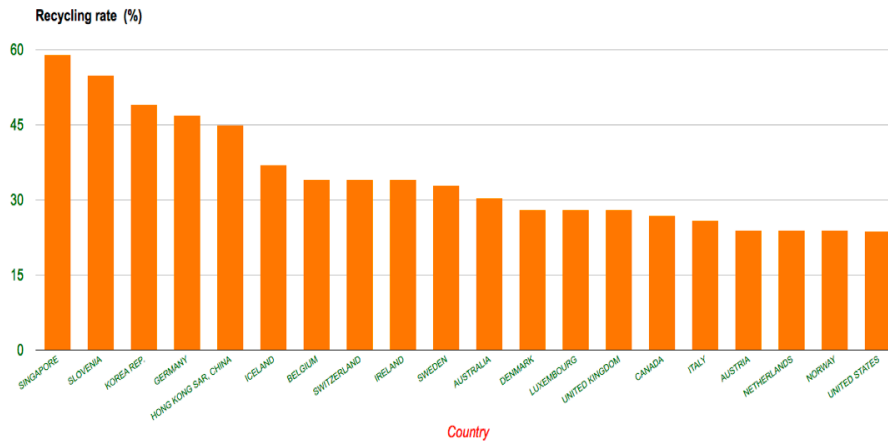
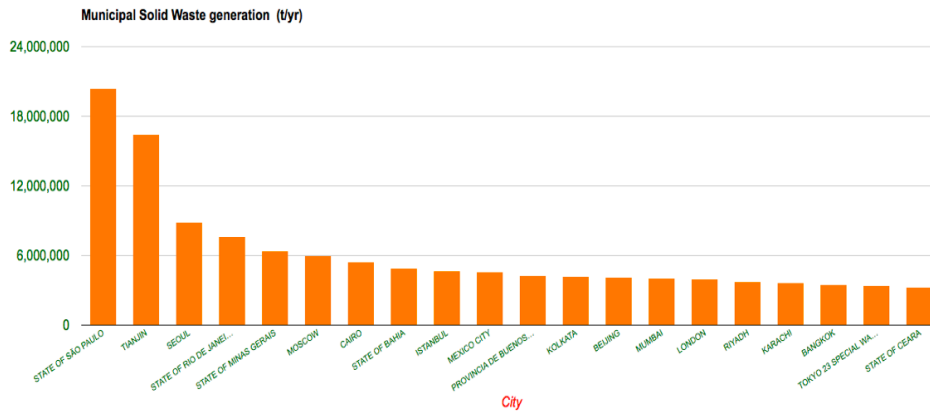
Divide pupils into groups of five; one person per hat with the exception of blue (that happens at the end). You could have a pair of pupils work together to consider one hat, which is especially helpful if a member of the group is less confident or has additional needs. Give a few minutes of silent thinking time for people to get into the mindset of the hat being worn.

Start the conversation by each person taking it in turns to share their coloured hat thinking.

Once all five hats have shared their viewpoint, an open discussion can occur, which can then move onto whole group blue hat planning.

de Bono, E (2000) *Six Thinking Hats* London: Penguin

RESOURCE SHEET 6



Source: Waste Atlas (<http://www.atlas.d-waste.com>)

Notes: The first chart shows the amount of waste generated by the top 20 countries in the world. What surprises you about this list? Can you locate them on a world map? Might the geography of the country have anything to do with waste disposal?

The second chart, looks at the 20 countries which are better at recycling. Which countries appear on both charts? Are there countries which appear on the recycling chart but not on the waste chart?

The third looks at the top 20 cities in the world which have the highest level so waste generation. Are there any countries here which appear on both the country waste generation and recycling charts? Why might some cities be listed as the 'worst offenders' but the country it is in does not appear on the country waste chart?

Zero waste

Tackling climate change through student leadership

RESOURCE SHEET 7

Litter Less Campaign¹

Jojana Primary School is located in the slums of Kirombe, on the outskirts of Kampala, Uganda.

Through the Litter Less Campaign, the school administration came up with new methods of keeping and maintaining the school compound clean. These methods include reciting a poem and singing a song that encourages pupils to clean the compound. Today the teachers just say 'The environment is bitter', and everyone gets concerned as never before.

Undoubtedly, the Litter Less Campaign has promoted and advertised our school to the outside world through exchange visits and participations in various national gatherings organised by the program. This has created new friendships between teachers and pupils of different schools.

Regarding education, the Litter Less Campaign has helped us improve the quality of education in that we no longer teach from abstract, since we can now use a number of learning aids made from litter. Here we make playing materials like dolls, footballs, skipping ropes, counters from litter. This has improved the pupils' attitudes towards learning from a negative to a positive one.

¹Eco Schools. (2016). Stories from schools. Available at: <http://www.ecoschools.global/stories-from-schools/>

Furthermore, the Litter Less Campaign gave us education skills on using litter for development, for example we are now making flowers, which we sell and get good money for. As teachers, this diversified our economy and improved our living standards.

The Litter Less Campaign improved and promoted agriculture in our school. This came as a result of getting knowledge of making manure from the litter we get from the school community, which helps us in our school demonstration garden for local medicine and vegetables. We also learned that the ash taken from the incinerator after burning rubbish is very good for preventing banana weevils in the Head Teacher's banana plantation.

The Litter Less Campaign has helped us discover the pupils' intellectual curiosity by giving them a chance to explore the world around them. We achieved that by telling them to make their own litter products and we could appreciate those who made better ones. We even got one pupil who made a learning tool for archeology from debris of buttons among other items.

The campaign has indeed changed our negative opinion about litter: we considered it a curse – now we all say that 'litter is a blessing!' This can be seen in the remarkable step forward taken in the short period of time the program has been implemented in our school since 2013.



RESOURCE SHEET 8

These actions will need to be SMART

	Specific	Measurable	Achievable	Realistic	Time - bound
Prompt	What is the exact issue and how is it affecting people negatively? What are you aiming to do?	What will be measured? How will you create a baseline? How will you know that it is being achieved? How will you know when it has been completed? How will you know it is effective? What will you notice?	How many people are needed? How much time will it take? How will you divide the tasks among your team members?	What is the budget? How will you get the money? What resources will you need?	When will this be achieved by? How will you document your work? Who will you share the outcomes with? How will you share the outcomes?
Example	Reduce the amount of plastic bags and bottles that are littering our community by 50 per cent and use to make eco bricks to build growing beds.	Currently, there is roughly one bottle and ten plastic bags for every square metre along the roadside. Success is indicated by roadsides clear of bottles and plastic. Bins will be used for this waste instead.	Each class of children will cover ten metres of the areas outside of the school once per week. Bins will be erected at each corner and emptied by the eco committee and contents monitored. Bottles stuffed by volunteers from the community.	Not a lot required. Need to speak to eco committee about: Sponsor a bin campaign? Make a bin? Training children to show community members how to make eco bricks.	Outside areas cleaned in seven weeks time. Bins installed within three months. Local Recycling Manger collects once per month.
Your group's ideas					

RESOURCE SHEET 9

ALTERNATIVE NON-INTERNET LESSON RESOURCES

The following activities can be used as alternatives when access to online video material is not possible.

Lesson 2: Step 1: Video:

Instead of showing the video, ask pupils to read the description of the I Got Garbage project in Resource Sheet 3.

Lesson 2: Step 3: Younger/Older Video:

Instead of showing the video, explain that Goal 13 of the UN's Sustainable Development Goals is to take urgent action to combat climate change and its impacts.

Describe the progress so far of the campaign:

- As of April 2017, 143 parties ratified the Paris Agreement, a deal which unites the world's nations in tackling climate change.
- As of 20 April 2017, seven developing countries successfully completed and submitted the first iteration of their national adaptation plans, in response to climate change.
- Developed countries have committed to jointly mobilizing \$100 billion per year by 2020 to address the climate-related needs of developing countries and to continue that level of support through 2025

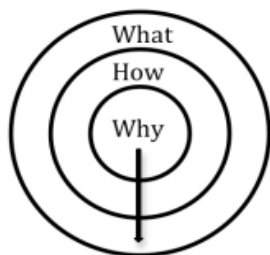
Ask students why global goals are important.

Lesson 3: Step 1: Further summary of Simon Sinek and the Golden Circle:

For an idea/organisation to be successful they need to understand three things:

- WHAT the idea is
- HOW it is achieved
- WHY it is important

The WHY is the most important part as it engages people's feelings and trust. This therefore forms the centre of the 'Golden Circle' that you work out from, describing why, then how and then what.



Lesson 3: Step 1: Vision Eco-Bricks:

Instead of showing the video explain the concept of Vision Eco-Bricks:

Eco-bricks are crafted by filling plastic bottles with waste to create firm bricks, which can be used as building materials. These bricks combined with locally created mortar can be used to build community constructions such as green space areas, which serve to create a more nature-driven space.

Even when these constructions are taken down the bricks can be reused when building new ones.

The creation of these bricks unites both the community and family by offering them a common activity and goal. Additionally people are encouraged to write their own aspirations and hopes for the future on the bricks they create, thus encouraging a positive mind-set about the future for the community.

Lesson 3: Step 2: Plastic, the Environment & Ecobricks guide summary

What is the 'Environment'?

The Environment is the Web of Interconnections between us and everything else e.g. plants, animals etc. Our actions have effects on them and vice versa. In natural environment there is a complete circle as life decays supporting new life.

What's so bad about plastic?

Plastics are non-biodegradable, so stay around for a long time, and can't be naturally reused. Even recycling isn't a perfect circle as each time plastics are reprocessed they are down-cycled to lower grades, until they are too low-grade to be recycled again.

The burning of plastic creates poisonous gas, which eventually becomes rain. This rain combines with water supplies causing a higher risk of birth defects, cancer and degenerative diseases.

What can we do?

- Be conscious of consumption
- Switch from plastics to organics
- Create Ecobricks and teach others how to create them

Lesson 6: Step 1: Video:

Instead of showing the video explain that Eco Schools Global is a world-wide organisation that aims to engage students in environmental activities and put them in charge of their own learning by deciding what they want to know about the environment so they can support and preserve it better.

IMAGE GALLERY



Photo credit: Nick Russill via flickr

Source: <http://www.treehugger.com/natural-sciences/arctic-ocean-ice-free-in-summer-by-2015-new-research-shows-greenland-ice-sheet-shows-rapid-losses-too.html>

Notes: The polar ice caps are melting as the temperature of the Earth rises. This means that there is less ice for animals to live on, and the level of sea is rising. Rise in sea levels mean that delicate ecosystems, such as coral reefs are affected, thus affecting marine life. We have also seen an increase in more storms and rain in some parts of the world, and drought in other areas the eco-system shifts.

Zero waste

Tackling climate change through student leadership



Photo credit: Save the Children UK (December 2015)

Source: <https://www.facebook.com/savethechildrenuk/photos/pb.117476785190.-2207520000.1450268370./10156308884055191/?type=3&theater>

Notes: Ethiopia is facing the worst drought in 50 years. It has ruined harvests, devastated livestock and left families struggling to find food and water.

The Ethiopian government has launched a huge effort to tackle it – we're doing all we can to help. Together, we can stop the threat to children's lives. Act now > <http://save.tc/VC40K>

Zero waste

Tackling climate change through student leadership



Photo credit: Save the Children UK (August, 2015)

Source: <https://www.facebook.com/savethechildrenuk/photos/pb.117476785190.-2207520000.1450268798./10155896450550191/?type=3&theater>

Up to 80,000 children in flood-hit Myanmar are in need of essential hygiene and household items after floodwaters left entire communities underwater.

We're giving out vital hygiene kits including soap and sanitary items to 150 families in Kayin State and working round the clock to assess the extent of the crisis and the needs of children and their families.

Zero waste

Tackling climate change through student leadership



Photo credit: ILO Asia-Pacific via flickr
Source: www.ilo.org/haiyan

Notes: There are children who live all over the world in rubbish dumps, scavenging for waste that could be recycled and traded to get money for food. For many children, they are desperate to go to school, but because they cannot afford shoes for the long journey, they are unable to.



Photo credit: RELAX_GAP/SHUTTERSTOCK, as cited in Science News (2014) 'Plastic goes missing at sea' (available online: <https://www.sciencenews.org/article/plastic-goes-missing-sea>)
Source: <https://www.sciencenews.org/article/plastic-goes-missing-sea>

Notes: Estimates put the amount of plastic entering the world's oceans in the range of millions of tons. The plastic comes from a variety of sources, including trash floating down rivers or blown off garbage barges, fishing gear lost or abandoned at sea and tiny beads from cosmetics washed into sewers. When plastic reaches the ocean, the sun, waves and wind weaken large pieces, which break down into smaller chunks, Cózar says, until most plastic is in tiny fragments floating on the ocean surface.



Photo credit: Ninara via flickr
Source: <https://flic.kr/p/2i72rEX>

Notes: Delhi, India is one of the worst polluted cities in the world. The air pollution is so bad, that sometimes warnings are issued to residents, not to go outside. There are moves to try and reduce it, like car-free days, although these attempts are far from a current rates of pollution at 16 times higher than safe air levels.

SOURCES OF FURTHER INFORMATION

Articles and infographics

[Sweden's recycling habits](#) (website)

[Recycling](#) (website)

[Carbon Footprints](#)

[World's Carbon Footprint \(article, data and PDF\)](#)

[Cairo's Rubbish Collectors](#)

Organisations and information

[UN: Sustainable Development Goals](#) (website with PDFs)

[Global Opportunity Report](#)

[Don't Waste Your Waste](#) (video)

[Reduce, Reuse, Recycle, Respect](#) (website)

[Recycle Guide](#) (website)

[What is Sustainability?](#) (video)

[Effective Student Leadership](#) (PDF)

Case studies

[I Got Garbage](#) (website)

[Ecobricks](#) (website)

[Vision Ecobricks](#) (video)

Activities

[How long does trash last?](#) (website)

[Recycle Guide](#) (website)

[WWF Global – Rainwater Harvesting Ideas](#) (website)

[Ecobrick Guide](#) (PDF)

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Find a partner school or browse more resources at www.britishcouncil.org/school-resources

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