Don't let Devon go to waste

at school

'What about Waste?'

A Literacy Teaching Resource for Year 5/6

Recycle Devon

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Introduction

Welcome to 'What about Waste?', the literacy and waste resource from Devon County Council, produced by experienced teachers from the Resource Futures education team. The pack, which links directly to Curriculum 2014, uses stimulating non-fiction and fiction texts, and includes opportunities for pupils to learn by heart and perform poems they and others have written.

About the pack

'What about Waste?' comprises 10 clear and easy-to-use lesson plans, which address key literacy objectives for upper KS2 pupils using the topical theme of 'rubbish' and the 3Rs (Reduce, Reuse, Recycle).

The engaging lessons address the following areas of the literacy curriculum:

- Recount
- Instruction
- Explanation
- Persuasive writing
- Descriptive language
- Descriptive writing
- Poetry writing
- Poetry performance

The lesson plans, extension activities, and their supporting resources are ready to use with minimal teacher preparation; however they can also be customised to suit the learning needs of your class.

The lessons work equally well in sequence or individually, and can be used:

- to plan a two-week literacy project with a focus on waste
- as stand-alone lessons when teaching specific literacy skills
- as a two-week revision tool
- as the basis for a cross-curricular topic, focussing on waste or environmental issues
- as literacy activities during a themed day or week (e.g., Green Day, Environment Week)

The '3Rs PowerPoint' and 'five minute fillers' in the accompanying resources have been developed to support the pack's literacy lessons, but will also be useful in other contexts, particularly for teachers covering waste-related topics as part of science or geography work.

Why Waste?

Households in Devon produce more than 350,000 tonnes of 'rubbish' each year. Whilst the County is one of the best in the UK at recycling and composting (over 50% of this waste is currently recycled/composted), a large amount of 'rubbish' still needs to be disposed of.

As something within their daily experience, waste is a tangible and engaging topic for pupils. An understanding of the 3Rs allows children to take positive action on a global issue, both at home and at school.

Recycle Devon

Pupils can develop their understanding of waste issues as they mature, progressing from a focus on reusing and recycling in KS1, to more sophisticated debates about how individuals and society can reduce consumption of the world's resources with older KS2 pupils. The investigation of waste issues also creates plentiful opportunities for pupils to use their verbal and written skills to spread important environmental messages to their peers, families and the wider community.

Contents of the pack

- **Ten Literacy lessons for Year 5/6 with supporting resources**
  1. Recount lesson plan, 3Rs PowerPoint, mind-mapping diagram and recount scaffold
  2. Instruction lesson plan, Devon district recycling leaflet PDFs, 'key features of an instructional text' *aide memoire*
  3. Explanation lesson plan, 'Why Should I Recycle?' extracts, explanation writing frame, Energy from Waste text
  4. Persuasive writing lesson plan (1/2), writing frame
  5. Persuasive writing lesson plan (2/2), writing frame
  6. Descriptive language lesson plan (1/3), 'The Coming of the Iron Man' extract, 'The Return of the Iron Man' extract
  7. Descriptive writing lesson plan (2/3), WEEE (Waste Electrical and Electronic Equipment) PowerPoint presentation
  8. Descriptive writing lesson plan (3/3)
  9. Poetry writing lesson plan, 'A Price to Pay' poem
  10. Poetry performance lesson plan, 'A Price to Pay' poem

  NB: Lessons 4/5 and 6/7/8 are designed to be taught as two consecutive sets of lessons.
- **3Rs PowerPoint**
- **WEEE PowerPoint**
- **A selection of 5 minute filler activities related to waste. These are designed to be used by teachers to fill periods of time when a short, focussed activity is needed after a completed lesson, or just before a break in the school day.**

We recommend that you use the Recount lesson as a starting point, to give your pupils a solid introduction to waste issues. Following that, the lessons can be delivered in any order to suit your class.

Before you start work with your pupils, we suggest you read the '3Rs PowerPoint' found in Lesson 1: Recount folder in this pack and/or watch Devon County Council's short video about landfill sites for primary pupils on zone.recycledevon.org/videos. These contain the information that you will need to feel confident discussing waste issues with your pupils, enabling you to inspire them to great literacy work and engage them with the 3Rs message.

If you wish to further develop the WEEE Man focus during your lessons, further resources and information are available on the WEEE Man website: www.weeeman.org

'What about Waste?' – Lesson 1: Recount

Look at the everyday problem of waste, and what we do with it, to explore recount and note-taking skills. Use some of the fascinating facts and figures surrounding the 3Rs (Reduce, Reuse and Recycle) to encourage note-taking skills, as well as to form the basis of a recount text. Practice what you preach by encouraging pupils to use mini-whiteboards to reduce waste if this is a one-off lesson. Use the 3Rs PowerPoint presentation found within the Recount Lesson folder and the landfill site video, found in the zone.recycledevon.org website video section, as a starting point for the lesson and the glossary at the end of this plan to support your own knowledge of the 3Rs. Lesson lasts one hour.

NC/strategy references:

Reading comprehension
- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Writing composition
- noting and developing initial ideas, drawing on reading and research where necessary

Children's previous experiences:

Learning outcomes:

I can recount some of the facts that I have learnt about waste.
I can take notes to record important information.

Differentiation:

Mind-map diagram for note-taking for lower ability (LA)
Recount scaffold.

Other means of support:

Use of PowerPoint means that the pace can be varied according to the needs of the pupils.

Resources:

PowerPoint presentation found in the zone.
Landfill site video found in the zone.
Mind-map and recount scaffold, found on pages 24 and 25.
Example mind-map to be completed by the teacher.
Interactive whiteboard (IWB) or projector.
Jotters/note pads or mini-whiteboards.
Pencils/pens.

Health and safety:

Key questions:

What happens to our rubbish?
What problems does our rubbish create?
What can we do to stop making so much rubbish?

Key vocabulary:

Note-taking, scan, skim, recount, waste, rubbish, reduce, reuse, recycle, recover, landfill site, resources, Energy from Waste (EfW), methane, leachate, climate change, global warming.

Introduction – 15 minutes **Organisation** Class seated in places, with jotters or mini-whiteboards. Mind mapping diagrams available. IWB with PowerPoint set up. Learning outcomes and key questions written on a board throughout lesson.	**Teacher activity** Share the mind mapping diagram with the class. Remind the children that when taking notes it is important to identify key words and phrases from the information given. Explain that the class will be watching a PowerPoint presentation exploring what happens to our rubbish. Share the key questions with the class.	**Pupil activity** Pupils watch the PowerPoint presentation, taking notes to help them answer the key questions. LA pupils can use the mind mapping diagram for support.
Main – 35 minutes **Organisation** Class seated in places, jotters or mini-whiteboards and recount scaffold available. Completed mind-map.	**Teacher and pupil activity** Ask the pupils to share some of the information that they have jotted down. Share the recount structure with the class. Remind them that recounts are written in the first person. Model writing a recount using the scaffold and information from the PowerPoint using the completed mind-map. Leave the scaffold on display for the whole class. Give the scaffold to LA pupils or work with LA group to provide them with support. Pupils write a recount of the information that they have noted from the PowerPoint presentation. They can use their mind-map notes and the recount scaffold to assist their writing.	
Plenary – 10 minutes **Organisation**	**Teacher activity** Ask the pupils to share their recounts with the class. What were the most interesting facts or ideas that they discovered?	**Pupil activity** Pupils share their recount texts and discuss the facts or ideas that they found interesting.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850^{o}C) in a process that creates electricity, and potentially heat, for local housing and businesses
recover – waste being processed in a useful way, in the case of EfW; to provide heat and power
landfill – the name of the area of land where waste has been buried for disposal
methane – a gas which is produced from rotting organic materials in a landfill site. This is a greenhouse gas, which contributes to climate change if allowed to escape into the atmosphere
leachate – a dark coloured liquid, which is produced when rainwater filters through the rubbish in a landfill site, and from rotting organic material such as food waste. It can be harmful to wildlife, so needs to be carefully managed to keep it out of rivers and streams
climate change – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels
global warming – a gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide and other pollutants

'What about Waste?' – Lesson 2: Instruction

Look at waste, and what we do with it locally, to explore instructional writing. Use local recycling leaflets to encourage scanning and skimming skills, as well as to form the basis of an instructional text. Practice what you preach by encouraging pupils to use mini-whiteboards to reduce waste if this is a one-off lesson. Use the glossary at the end of this plan to support your own knowledge of the 3Rs (Reduce, Reuse, Recycle). Lesson lasts one hour.

NC/strategy references:

Reading comprehension:
- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Writing composition. Plan their writing by:
- identifying the audience and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
- using further organisational and presentational devices to structure text and to guide the reader (e.g. headings, bullet points, underlining)

Children's previous experiences:

Learning outcomes:

I can identify instructional writing within a larger text.
I can write for a specific audience.
I can write instructions explaining how to recycle at home.

Differentiation:

Work in mixed ability pairs to identify information and to complete instructional text.

Other means of support:

Key features of an instructional text resource.

Resources:

Interactive White Board (IWB).
PDF of local district recycling at home leaflet, to be found in the zone.
Coloured pencils/pens.
Key features of an instructional text resource found on page 26.
Optional: access to computers/laptops/tablets.

Health and safety:

Key questions:

What are the 3Rs?
What are the benefits of recycling?
How can we recycle at home?
What steps do we need to take to recycle well?

Key vocabulary:

Instructions, how, first, then, after that, next, finally, step by step.

Introduction – 15 minutes **Organisation** Class sitting in mixed ability pairs, with jotters/ mini-whiteboards. IWB with PDF of local district recycling leaflet set up. Learning outcomes and key questions written on a board throughout lesson.	**Teacher activity** Share the PDF of the local district recycling leaflet on the IWB. Explain that the class will be identifying examples of instructional writing within this text in a shared activity. Read through the leaflet with the class, identifying instructional writing. Encourage scanning and skimming of the leaflets.	**Pupil activity** In pairs, use the local recycling leaflet to identify further opportunities for instructional writing. Use the key questions to help identify further information. How can we recycle at home? What steps do we need to take to recycle well? Do you think that there is information missing from the leaflet?
Main – 35 minutes **Organisation** Class sitting in pairs, highlighted PDF, jotters, key features of an instructional text resource. Optional: a laptop /tablet per pair of pupils.	**Teacher and pupil activity** Display the key features of an instructional text on the IWB. Recap what is needed for a strong instructional text, reminding pupils about the use of bullet-points and other features, and highlighting the connectives used throughout. Refer to the features of the shared text from the introduction. Set the main task: create a set of child-friendly instructions detailing how to recycle well at home using the information collected from the local recycling leaflet. Optional: use PowerPoint to display the key features of instructional text. Pupils create a set of instructions detailing how to recycle well at home. This could include, but is not limited to: How to recycle a specific material, how to ensure that you recycle all that you can, how to get the recycling ready for collection, how to make the best use of the space in your recycling containers, who does what in the recycling process.They can use the information and instructions they have highlighted in the local recycling leaflet as well as those identified in the shared reading during the introduction. Use the key features of an instructional text resource as an aide memoire. Optional: Create a leaflet or use PowerPoint to display the 'How to Recycle' instructions. Pupils could take photos of the various steps to enhance their leaflet or presentation.	
Plenary – 10 minutes Organisation	**Teacher and pupil activity** Ask a pair of pupils to share their instructions. Another pair can act out the instructions to ensure that they make sense.	

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850°C) in a process that creates electricity, and potentially heat, for local housing and businesses
recover – waste being processed in a useful way, in the case of EfW; to provide heat and power
landfill – the name of the area of land where waste has been buried for disposal

'What about Waste?' – Lesson 3: Explanation

Look at the issue of waste, and what we do with it. Use some of the fascinating facts and figures surrounding the 3Rs (Reduce, Reuse & Recycle) to encourage scanning and skimming skills, as well as to form the basis of an explanation text. Use the extracts from 'Why Should I Recycle?' by Susan Meredith and the 'Energy from Waste' text by Devon County Council as a starting point for the lesson and the glossary at the end of this plan to support your own knowledge of the 3Rs. Practice what you preach by encouraging pupils to use mini-whiteboards to reduce waste if this is a one-off lesson. Lesson lasts one hour.

NC/strategy references:

Reading comprehension:
- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Writing composition. Plan their writing by:
- identifying the audience and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
- using further organisational and presentational devices to structure text and to guide the reader (e.g. headings, bullet points, underlining)

Children's previous experiences:

Learning outcomes:

I can identify explanation writing within a larger text.
I can write an explanation about why we should recycle.

Differentiation:	**Other means of support:**
Talk for reading – use questioning and modelling to support lower ability (LA) pupils and further questioning to extend higher ability (HA) pupils.	Shared reading with large text to remain on display as an aide memoire. Optional: notes from previous lessons, specifically the Recount lesson.
Resources: Extracts from 'Why Should I Recycle?' by Susan Meredith found on pages 28 - 30 and 'Energy from Waste' by Devon County Council found on page 27. Explanation writing frame found on page 31. Interactive white board (IWB).	**Health and safety:**
Key questions: What problems are there with our rubbish? What are the solutions? What do the 3Rs mean? Why are the 3Rs in this specific order: Reduce, Reuse, Recycle?	**Key vocabulary:** Explanation, topic, structural, connectives, generalisation, detail to illustrate points, technical language.

Introduction – 20 minutes **Organisation** Class seated at desks in literacy places, with jotters/mini-whiteboards. IWB with first extract from 'Why Should I Recycle?' set up. Learning outcomes and key questions written on a board throughout lesson.	**Teacher and pupil activity** Share the first extract from 'Why Should I Recycle' on the IWB. Explain that the class will be using the extract to identify the key features of non-fiction text. Read through the extract with the class, identifying its non-fiction text features (explanation, topic, structural, connectives, generalisation, detail to illustrate points and technical language). Highlight each type of feature in different colours as pupils find them. Talk through the process of identifying text features. Focus on examples of explanation text within the extract.	
Main – 2 x 15 minutes **Organisation** Pupils working individually.	**Teacher activity 1** Give out further extracts from 'Why Should I Recycle?' and 'Energy from Waste' (in paper or online format.) **Teacher Activity 2** Bring the class back together, share some examples of explanation text found in the extracts. Set the next task: write an explanation about why we should recycle for an alien who has crash landed near the school and knows nothing about the Earth or its environmental problems. Encourage use of writing frame.	**Pupil activity 1** Pupils read through the extracts and highlight further explanation text. **Pupil Activity 2** Pupils write an explanation for an alien who has crash landed near the school, explaining why people should recycle. They use some of the text that they have highlighted from the extracts as a basis for this explanation. A writing frame is available for those who need it. Optional: pupils use their notes from the recount lesson for further support.
Plenary – 10 minutes **Organisation**	**Teacher activity** Hot-seat: The teacher pretends to be the alien and asks pupils why planet Earth is in such a mess and what should be done about it.	**Pupil activity** Pupils use their explanation texts to explain to the alien why everyone needs to recycle.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

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recycle – convert waste into reusable items
Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850°C) in a process that creates electricity, and potentially heat, for local housing and businesses
recover – waste being processed in a useful way, in the case of EfW; to provide heat and power
landfill – the name of the area of land where waste has been buried for disposal
methane – a gas which is produced from rotting organic materials in a landfill site. This is a greenhouse gas, which contributes to climate change if allowed to escape into the atmosphere
leachate – a dark coloured liquid, which is produced when rainwater filters through the rubbish in a landfill site, and from rotting organic material such as food waste. It can be harmful to wildlife, so needs to be carefully managed to keep it out of rivers and streams
climate change – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels

'What about Waste?' – Lesson 4: Persuasive writing

(1 of 2) Letter drafting

Explore the tangible issue of waste, and what we do with it. Use some of the fascinating facts and figures surrounding the 3Rs (Reduce, Reuse and Recycle) to form the basis of a persuasive text: a letter. To support your knowledge of the 3Rs read the extracts from 'Why Should I Recycle?' by Susan Meredith and 'Energy from Waste' by Devon County Council, as well as notes made during previous lesson and the glossary at the end of this plan. This lesson continues in Lesson 5: Persuasive writing – letter writing, and lasts one hour.

NC/strategy references:

Reading comprehension
- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Writing Composition. Plan their writing by:
- identifying the audience and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
- using further organisational and presentational devices to structure text and to guide the reader (e.g. headings, bullet points, underlining)

Children's previous experiences:

Learning outcomes:

I can identify the key features of a formal letter.
I can identify and use persuasive language.
I can write a persuasive letter for a specific audience.

Differentiation:	**Other means of support:**
Use questioning and modelling to support lower ability (LA) pupils and further questioning to extend higher ability (HA) pupils.	Shared writing of the letter structure, in large text, to remain on display as an aide memoire throughout lesson. Writing frame: persuasive letter writing frame found in the Persuasive writing folder. Optional: notes from previous lessons, specifically from Lesson 1: Recount
Resources: Interactive white board (IWB). Extracts from 'Why Should I Recycle?' found on pages 28 - 30 and 'Energy from Waste' on page 27. Writing frame: persuasive writing - letter writing frame, found on page 32. Optional: notes from previous lessons.	**Health and safety:**
Key questions: Why should we use the 3Rs? Why should we recycle?	**Key vocabulary:** Persuade, opinion, because, reason, resources, reduce, reuse, recycle, rubbish, waste, recover.

Introduction – 20 minutes **Organisation** Class seated at desks in literacy places, with jotters. Writing frame for letter on IWB. Learning objectives and key questions written on a board throughout lesson.	**Teacher activity** Model writing a basic letter focusing on its key features such as: address, date, greeting and formal ending as well as layout.	**Pupil activity** Pupils create a basic letter writing template in their jotters, including the key features modelled by the teacher.
Main – 30 minutes **Organisation** Pupils working individually.	**Teacher and pupil activity** Explain to the pupils that they are going to write a persuasive letter to someone e.g. parents/family/sibling, outlining why they should use the 3Rs in their everyday life/lives. Encourage the pupils to think carefully about what language would be both informative and persuasive. Remember the audience for the letter, and ensure the arguments given relate specifically to that recipient. Optional: remind pupils to think about the past lessons to help structure this letter. Optional: use notes from previous lessons for further support.	
Plenary – 10 minutes **Organisation**	**Teacher activity** Ask the children to share with the class some of the persuasive sentences that they are particularly pleased with.	**Pupil activity** Pupils to think about some of the persuasive sentences that they have heard today. Were there any particularly strong sentences that would encourage them to do more of the 3Rs?

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
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resources – the planet's reserves of minerals, land, and other natural assets
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reuse – use an item over again
recycle – convert waste into reusable items
Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850^{o}C) in a process that creates electricity, and potentially heat, for local housing and businesses
recover – waste being processed in a useful way, in the case of EfW; to provide heat and power
landfill – the name of the area of land where waste has been buried for disposal
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leachate – a dark coloured liquid, which is produced when rainwater filters through the rubbish in a landfill site, and from rotting organic material such as food waste. It can be harmful to wildlife, so needs to be carefully managed to keep it out of rivers and streams
climate change – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels
global warming – a gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide and other pollutants

'What about Waste?' – Lesson 5: Persuasive writing

(2 of 2) Letter writing

A continuation from Lesson 4: Persuasive writing – letter drafting. Explore the tangible issue of waste, and what we do with it. Use some of the fascinating facts and figures surrounding the 3Rs (Reduce, Reuse and Recycle) to form the basis of a persuasive text: a letter. Use the extracts from 'Why Should I Recycle?' by Susan Meredith and 'Energy from Waste' by Devon County Council as a starting point for the lesson. If applicable, use any notes made during previous lessons and the glossary at the end of this plan to support your own knowledge of the 3Rs. N.B. It will be useful to have read pupils draft work from the previous lesson to ensure that feedback can be given during the drafting stage. Lesson lasts one hour

NC/strategy references:

Reading comprehension
- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Writing composition. Plan their writing by:
- identifying the audience and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
- using further organisational and presentational devices to structure text and to guide the reader (e.g. headings, bullet points, underlining)

Children's previous experiences:

Learning outcomes:

I can identify the key features of a formal letter.
I can identify and use persuasive language.
I can write a persuasive letter for a specific audience.

Differentiation:	**Other means of support:**
Use questioning and modelling to support lower ability (LA) pupils and further questioning to extend higher ability (HA) pupils.	Pupils' copy of letter writing structure from previous lesson. Writing frame: letter structure found in persuasive lesson folder. Optional: notes from previous lessons, specifically Lesson 1: Recount
Resources: Interactive white board (IWB). Extracts from 'Why Should I Recycle?' found on pages 28 - 30 and 'Energy from Waste' on page 27. Writing frame: persuasive writing - letter writing frame, found on page 32. Optional: notes from previous lessons.	**Health and safety:**
Key questions: Why should we use the 3Rs? Why should we recycle?	**Key vocabulary:** Persuade, opinion, because, reason, resources, reduce, reuse, recycle, rubbish, waste.

Introduction – 15 minutes **Organisation** Class seated at desks in literacy places, with jotters and letter drafts. Writing frame: persuasive writing – letter writing frame on IWB. Learning objectives and key questions written on a board throughout lesson.	**Teacher activity** Revisit the key features of a formal letter and of successful persuasive writing from lesson 4: letter drafting.	**Pupil activity** Pupils re-read their draft letter from previous lesson then swap drafts with a partner. They give each other verbal feedback about which parts of the letters they think work well and which could be improved.
Main – 35 minutes **Organisation** Pupils working individually.	**Teacher and pupil activity** Teacher to give overall feedback to the class on draft letters. Encourage pupils to use a dictionary and / or thesaurus as necessary. Pupils re-draft their letters in response to the feedback received. They ask another classmate for feedback, then double check their spelling and grammar. They then take their letter to show the teacher before producing a final copy for display, or to be taken home. Optional: use notes from previous lessons for further support. **Extension activity:** If pupils finish their work early, put them into pairs and give them the following task: Create a persuasive presentation to deliver to the class explaining why the 3Rs are in the following order: Reduce, Reuse, Recycle.	
Plenary – 10 minutes **Organisation**	**Teacher activity** Ask some of the children to share their letters with the class.	**Pupil activity** Pupils to give feedback on the presented letters: what worked well in the letter? What could be improved? Pupils to be constructive and thoughtful in their responses.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
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reuse – use an item over again
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Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850^{o}C) in a process that creates electricity, and potentially heat, for local housing and businesses
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leachate – a dark coloured liquid, which is produced when rainwater filters through the rubbish in a landfill site, and from rotting organic material such as food waste. It can be harmful to wildlife, so needs to be carefully managed to keep it out of rivers and streams
climate change – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels
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'What about Waste?' – Lesson 6: Descriptive language

(1 of 3) Identifying descriptive language

This lesson marks the beginning of a three lesson learning arc. Look at waste; what we do with it and what can be created with it, to explore descriptive language. Use the classic story of "The Iron Man" by Ted Hughes to encourage scanning and skimming skills, as well as to form the basis of a descriptive text. The use of language within the text will inspire the imaginations of your pupils, allowing them an opportunity to develop their use of descriptive language. Practice what you preach by encouraging pupils to reuse scrap paper to reduce waste if this is a one-off lesson. Lesson lasts one hour.

NC/strategy references:

Reading comprehension. Maintain positive attitudes to reading and understanding of what they read by:
- increasing their familiarity with a wide range of books, including modern fiction, fiction from our literary heritage

Reading comprehension. Understand what they read by:
- discussing their understanding and exploring the meaning of words in context

Writing composition. Draft and write by:
- selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning

Children's previous experiences:

Learning outcomes:

I can identify descriptive writing within a body of text.
I can create a word picture to describe something.
I can use inference to develop my ideas.

Differentiation:	**Other means of support:**
Questioning and modelling to support different abilities.	Shared text will remain on IWB as a guide.
Resources: Extract 1 from 'The Iron Man' on interactive white board (IWB), found on page 33. Copies of Extract 2 from 'The Iron Man' for pairs to highlight, found on page 34. Jotters/note pads or mini-whiteboards. Pencils/pens, highlighters.	**Health and safety:**
Key questions: What does the Iron Man look like? What do we need to infer to build a full image of the Iron Man?	**Key vocabulary:** Descriptive, adjectives, scan, skim, structure, infer, inference.

Introduction – 20 minutes **Organisation** Class sitting at desks, in pairs with jotters. IWB with Extract 1 set up. Learning outcomes and key questions written on a board throughout lesson.	**Teacher and pupil activity** Ask the class to look around them, what can they see in the classroom that is made of metal? What about in the school? At home? Where has all that metal come from? (Mining, iron, aluminium, steel works etc) And where will it go when we no longer need it? (Scrap yards, recycling centres, landfill sites) Explain that the class will be finding out where some of the metal they see may have gone. Share Extract 1 via IWB with the class, reading the whole passage. Share the key questions with the class. Re-read the extract and ask the class to find key descriptive phrases. Encourage the use of scanning and skimming to identify descriptive language. Pupils find examples of descriptive writing within Extract 1.	
Main – 30 minutes **Organisation** Class sitting in mixed ability pairs with jotters and Extract 2.	**Teacher and pupil activity** Hand out paper copies of Extract 2. Ask pupils to work together to find and highlight further descriptive language describing the Iron Man within Extract 2. Once all descriptive language has been found, pairs should work together to make a written word picture to describe the Iron Man: Where he has come from? How he was made? Why he was made? Encourage pupils to think about the metal items they are familiar with, how might those items appear within the Iron Man's body? What do they think happens to the metal items that the Iron Man has eaten? Pupils find descriptions of the Iron Man and use them to write a word picture with a partner. They should be encouraged to make inferences to build a full image of the Iron Man. They read their word picture to another pair and ask them to draw what they think the Iron Man would look like in response.	
Plenary – 10 minutes **Organisation**	**Teacher activity** Ask a pair of pupils to share their word picture; draw a picture of what they describe on the board. Repeat if time is available.	**Pupil activity** Pupils discuss whether they need more information, or were able to use their imagination to fill in the gaps.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
mining – the extraction of ore from the ground, often through the use of explosives

'What about Waste?' – Lesson 7: Descriptive writing

(2 of 3) Drafting

A continuation of the Descriptive language learning arc. Look at electronic and scrap metal waste, and what we do with it, to explore descriptive writing. Use the classic story of "The Iron Man" by Ted Hughes and the real life WEEE Man*, to inspire the pupils to think about how a 21st Century Iron Man may look. The WEEE PowerPoint will support your, and your pupils' knowledge of WEEE waste. The use of language within the text will enrich the imaginations of your pupils, allowing them an opportunity to develop their use of descriptive language. Practice what you preach by encouraging pupils to use scrap paper or mini-whiteboards to reduce waste. Lesson lasts one hour.

*Note: WEEE Man represents the electrical waste thrown away by one person in their lifetime.

NC/strategy references:

Reading comprehension. Maintain positive attitudes to reading and understanding of what they read by:

- increasing their familiarity with a wide range of books, including modern fiction, fiction from our literary heritage

Reading comprehension. Understand what they read by:

- discussing their understanding and exploring the meaning of words in context

Writing composition. Draft and write by:

- selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning

Children's previous experiences:

Learning outcomes:

I can use my imagination to create a 21st century Iron Man using a range of adjectives.

Differentiation:	**Other means of support:**
Questioning and modelling to support different abilities.	Dictionary and thesaurus.
Resources: Extracts 1 and 2 from 'The Iron Man' found on pages 33 and 34. WEEE PowerPoint, including picture of the WEEE Man, pictures of WEEE waste and pictures of scrap metal waste found in the zone. Interactive white board (IWB). Jotters/note pads or mini-whiteboards. Pencils/pens, highlighters. Catalogues of electrical equipment (teacher to source). Scissors.	**Health and safety:**
Key questions: What would the Iron Man look like if he appeared today?	**Key vocabulary:** Descriptive, adjectives, WEEE waste (Waste Electrical and Electronic Equipment), vocabulary, thesaurus, dictionary.

Introduction – 20 minutes **Organisation** Class sitting at desks, with jotters. IWB with PowerPoint of pictures set up. Catalogues of electrical equipment. Scissors. Learning objectives and key questions written on a board throughout lesson	**Teacher activity** Explain that The Iron Man was published in 1968. Since then technology has expanded and the composition of our waste has changed. The class will be exploring how different the Iron Man might look if he appeared today. What items might be used today? How many items might be used today?	**Pupil activity** Pupils watch the PowerPoint of images and WEEE facts, and take notes of some of the rubbish that might be used to make the Iron Man if he appeared today. Pupils should think about the following question: How do you feel about what the WEEE Man represents?
Main – 30 minutes **Organisation** Class sitting in groups – 10 minutes Class sitting individually – 20 minutes	**Teacher activity** Ask the groups to work collaboratively to build a verbal picture of how the Iron Man might look today. Encourage note taking, and participation of all. Use the catalogues showing electrical goods and the PowerPoint image of WEEE Man to act as a visual prompt. Ask the pupils to return to their places, then ask them to use their jotters/mini-whiteboards to begin drafting a passage describing the 21st Century Return of the Iron Man.	**Pupil activity** Pupils work in a group to build a verbal picture of a 21st century Iron Man using the WEEE Man for inspiration. Work individually to draft a description of a 21st Century Iron Man including; What he is built from? What does he look like? How he would arrive?
Plenary – 10 minutes **Organisation**	**Teacher activity** Ask pupils to share some of the descriptive language that they are particularly pleased with.	**Pupil activity** Pupils share adjectives and other descriptive language that they have used with the person sitting next to them.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
WEEE – Waste Electrical and Electronic Equipment. An item is classed as being WEEE if it needs electricity to do what it intended to do. N.B. The electricity can come from a battery source
small WEEE – smaller electrical goods, e.g. toaster, hairdryer, iron, kettle
large WEEE – large electrical goods, e.g. cooker, washing machine

'What about Waste?' – Lesson 8: Descriptive writing

(3 of 3) Redraft and writing

The final lesson in the Descriptive writing learning arc. Use the classic story of "The Iron Man" by Ted Hughes, and the famous WEEE Man to inspire pupils to think about what a 21st Century Iron Man may look like. Use previous learning from lessons 6 and 7, with a growing awareness of waste, to produce an imaginative and up to date piece of descriptive writing. NB: It will be useful to have read pupils rough work from the previous lesson to ensure that feedback can be given during the drafting stage. Lesson to last one hour.

NC/strategy references:

Reading comprehension. Maintain positive attitudes to reading and understanding of what they read by:
- increasing their familiarity with a wide range of books, including modern fiction, fiction from our literary heritage

Reading comprehension. Understand what they read by:
- discussing their understanding and exploring the meaning of words in context

Writing composition. Draft and write by:
- selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning

Children's previous experiences:

Learning outcomes:

I can use my imagination to create a 21st century Iron Man using a range of adjectives.

Differentiation:	**Other means of support:**
Questioning and modelling to support different abilities.	Dictionary and thesaurus.
Resources: Extracts 1 and 2 from 'The Iron Man' found on pages 33 and 34. WEEE PowerPoint, including picture of the WEEE Man, pictures of WEEE waste and pictures of scrap metal waste found in the zone. Interactive white board (IWB) . Jotters/note pads or mini-whiteboards. Pencils/pens, highlighters. Catalogues of electrical equipment (teacher to source). Scissors.	**Health and safety:**
Key questions: What would the Iron Man look like if he appeared today?	**Key vocabulary:** Descriptive, adjectives, WEEE waste (Waste Electrical and Electronic Equipment), vocabulary, thesaurus, dictionary.

Introduction – 20 minutes **Organisation** Class sitting at desks, with jotters. IWB with PowerPoint of pictures set up. Catalogues of electrical equipment. Scissors. Learning objectives and key questions written on a board throughout lesson.	**Teacher activity** Revisit the aim of the task. Give feedback to pupils on their drafts. Encourage self-checking, peer-checking, use of dictionaries and thesauruses.	**Pupil activity** Pupils continue drafting their passage describing the 21st Century Return of the Iron Man. They self-check, re-read, ask another pupil to read, use a dictionary and thesaurus as appropriate, then show their draft to the teacher for final check.
Main – 30 minutes **Organisation** Class sitting individually	**Teacher and pupil activity** Give feedback to pupils on their drafts. Encourage self-checking, peer-checking, use of dictionaries and thesauruses. Pupils complete a neat version of A 21st Century Return of the Iron Man for possible display. Pupils create a picture of their 21st Century Iron Man using catalogue images and drawings. Extension activity: If pupils have finished their work, share the following question and ask them to develop an answer to be used in a debate: Why do we throw away so many electrical goods? (For example, if something newer comes along; if they are cheap to buy; if an item breaks; if repairing it costs too much.)	
Plenary – 10 minutes **Organisation**	**Teacher activity** Share pupils' work. Extension: Hold debate about how quickly electrical goods can be thrown away.	**Pupil activity** Pupils feed back on their peers' work.

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:** If you wish to further develop the WEEE Man focus during your lessons there are further resources and information available on the WEEE Man website: www.weeeman.org

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
WEEE – Waste Electrical and Electronic Equipment. An item is classed as being WEEE if it needs electricity to do what it intended to do. N.B. The electricity can come from a battery source
small WEEE – smaller electrical goods, e.g. toaster, hairdryer, iron, kettle
large WEEE – large electrical goods, e.g. cooker, washing machine

'What about Waste?' – Lesson 9: Poetry writing

Look at the issue of waste, and what we do with it, to explore poetry writing. Use the poem 'A Price to Pay' by Sarah Connors to encourage pupils to think about the impact humans have on the planet. Explore the use of a repeating refrain and other poetic devices, as well as the use of language to create impact. Focus on the change of the repeating refrain from negative to positive. Practice what you preach by encouraging pupils to use scrap paper or mini-whiteboards to reduce waste if this is a one-off lesson. Lesson to last one hour.

NC/strategy references:

Reading comprehension. Understand what they read by:
- identifying how language, structure and presentation contribute to meaning
- discuss and evaluate how authors use language, including figurative language, considering the impact on the reader

Writing composition. Plan their writing by:
- identifying the audience and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own

Writing composition. Draft and write by:
- selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning

Children's previous experiences:

Learning outcomes:

I can identify the key features in a poem .
I can use a repeating refrain within a poem.

Differentiation:	**Other means of support:**
Modelling to support pupils of different abilities.	Dictionary and thesaurus.
Resources: Copy of the poem 'A Price to Pay' found on page 35. Interactive white board (IWB). Jotters/note pads or mini-whiteboards. Pencils/pens, highlighters.	**Health and safety:**
Key questions: What do you think the poem is talking about? How does the poem make you feel? Were there any parts of the poem that you did not understand or like?	**Key vocabulary:** Descriptive, adjectives, powerful, emotive, challenging, ambiguous, repeating refrain.

Introduction – 20 minutes **Organisation** Class sitting at desks, with jotters. IWB with 'A Price to Pay' set up. Learning outcomes and key questions written on the board throughout lesson.	**Teacher and pupil activity** Read 'A Price to Pay' to the class, and then encourage the class to explore each verse. Questions to pose during discussion could include, but are not limited to: • What impact is the author trying to achieve in the poem as a whole? • How did the poem make pupils feel? • Are there any specific parts of the poem that have a different impact to other parts? • What makes the poem powerful? • Are the meanings of each line clear, or are some ambiguous? • What was the most hard-hitting part? • Is there a pattern within the poem? Is there a change to the pattern? • When looking at the change in pattern, what effect do you think the author was trying to achieve? • Do you notice a shift in the tone of the language? How does it change?	
Main – 30 minutes **Organisation** Class sitting individually.	**Teacher and pupil activity** Explain that the pupils are going to be creating their own poem with a repeating refrain, the theme of this poem should be positive overall, focussing on positive impacts humans have on the planet. Pupils should think carefully about how the repeating refrain will work, and the message that pupils are trying to give to the audience. If needed, model creating your own repeating refrains. You could use this as an opportunity to compare and contrast positive and negative refrains. Give feedback to pupils on their drafts, ensuring that the focus of positive actions for the planet is remaining a core aspect. Encourage self-checking, peer-checking, and the use of dictionary and thesaurus.	
Plenary – 10 minutes **Organisation**	**Teacher activity** Teacher to share selected pupils' work with the rest of the class. What aspects worked well? Was the core message clear? How did the use of language and tone impact on the effect of the poem?	**Pupil activity** Pupils to give feedback on peers' work. How did the poem inspire pupils to help the environment? Are there actions that pupils could take to make a difference?

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

Glossary:

waste – any unwanted item
rubbish – waste items; refuse or litter
resources – the planet's reserves of minerals, land, and other natural assets
reduce – make less of; specifically, to make less waste
reuse – use an item over again
recycle – convert waste into reusable items
Energy from Waste (EfW) – the process of burning non-recycled waste at very high temperatures (850°C) in a process that creates electricity, and potentially heat, for local housing and businesses
recover – waste being processed in a useful way, in the case of EfW; to provide heat and power
landfill – the name of the area of land where waste has been buried for disposal
methane – a gas which is produced from rotting organic materials in a landfill site. This is a greenhouse gas, which contributes to climate change if allowed to escape into the atmosphere
leachate – a dark coloured liquid, which is produced when rainwater filters through the rubbish in a landfill site, and from rotting organic material such as food waste. It can be harmful to wildlife, so needs to be carefully managed to keep it out of rivers and streams
climate change – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels

'What about Waste?' – Lesson 10: Poetry performance

Explore poetry performance by looking at the subject of waste and what we can do with it. Use the poem 'A Price to Pay?' by Sarah Connors, or the poems written in the previous lesson to create performances. Encourage pupils to memorise well and recite clearly. Think about who the poems will be performed to. This could be an opportunity for a whole school or parent assembly, a powerful film or act as the basis for a broader performance. Lesson lasts one hour.

NC/strategy references:

Reading comprehension:

- learning a wider range of poetry by heart
- preparing poems and plays to read aloud and to perform, showing understanding through intonation, tone and volume so that the meaning is clear to an audience

Children's previous experiences:

Learning outcomes:

I can recite a poem in front of an audience.
I can use a range of speaking styles to make an impact when performing in front of an audience.

Differentiation:	**Other means of support:**
Modelling to support pupils of different abilities.	Dictionary and thesaurus.
Resources: Copy of the poem 'A Price to Pay' found on page 35 Copies of pupils' poem written during the previous lesson in workbooks. Optional: Recording equipment.	**Health and safety:**
Key questions: How can I make an impact when reciting a poem?	**Key vocabulary:** Descriptive, adjectives, powerful, emotive, challenging, ambiguous, loud, soft, strong, harsh.

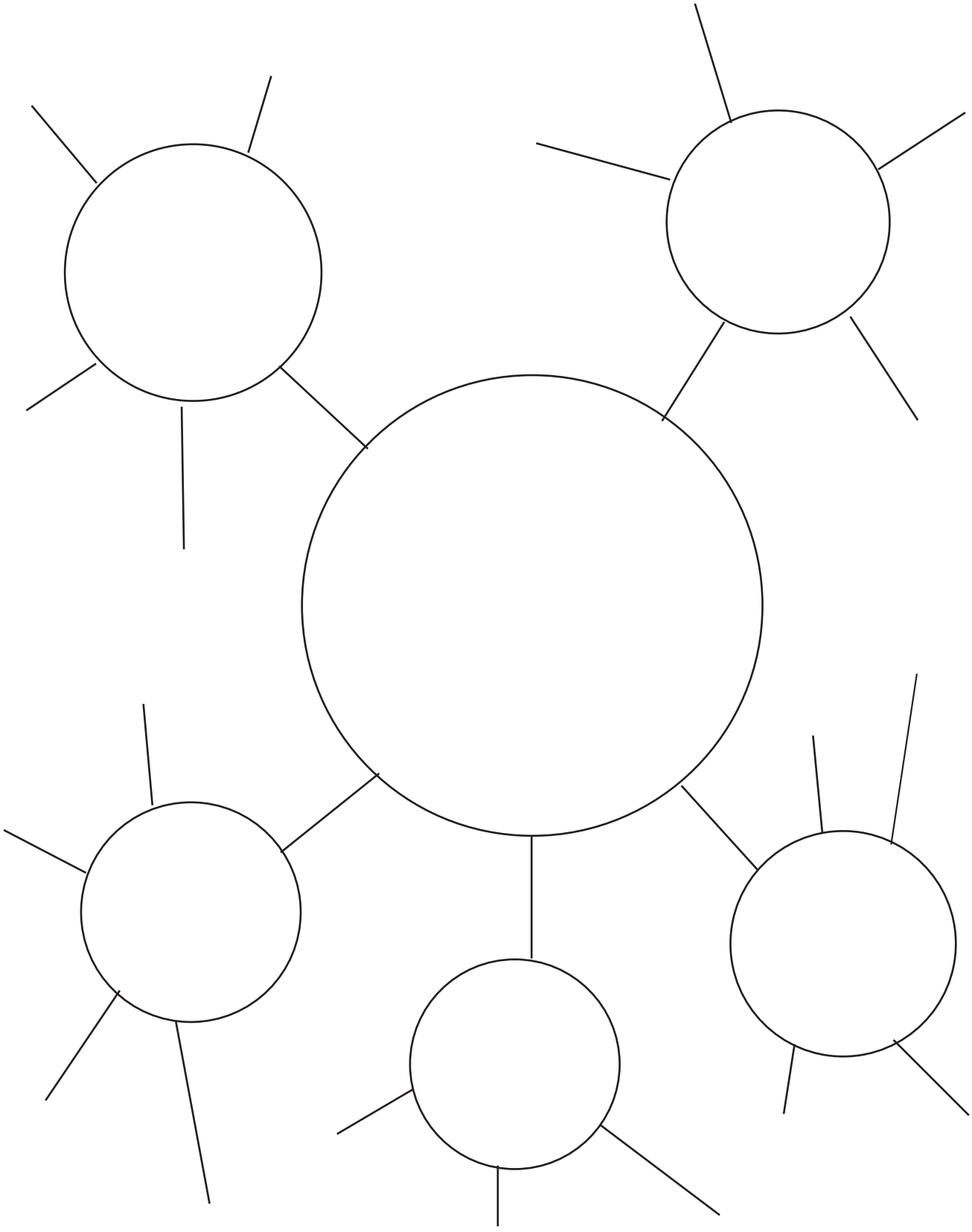
Introduction – 10 minutes **Organisation** Class sitting in groups or pairs. Copies of pupils' poems from the previous lesson in workbooks and / or copy of 'A Price to Pay'.	**Teacher activity** Read 'A Price to Pay' to the class. Explain that today, the children will be working together to rehearse and perform a poem to a selected audience. They can work in a group or individually, either performing 'A Price to Pay', or their own poem from the previous lesson.	**Pupil activity** Pupils decide which poem they will perform, who to work with within the class, and then negotiate who will perform which parts.
Main – 30 minutes **Organisation** Class sat in groups or pairs.	**Teacher and pupil activity** Bring the class together and explain that the main focus of the activity is the end performance. What would make a good performance? What would make a poor performance? Demonstrate the different aspects of performing. For example, speaking clearly, compared to mumbling, speaking in a monotone or varying tone and volume. Pupils should be reminded that the overall message of their poems should be positive, and that this positive message should be clear in the performance, supported by tone of voice, facial expressions and body language. Pupils should practise reciting the poem, thinking about how they can make an impact with their performance, and ensuring that everyone in the group plays a part. The teacher should spend time with each group giving feedback on their performances, encourage clear annunciation, varying tone and volume, emphasis on key words etc.	
Plenary – 20 minutes **Organisation**	**Teacher and pupil activity** Groups and pairs to deliver their performances to the class. Feedback can be given after each performance. How did the performance made the audience feel? Did it inspire pupils to want to take action in future? Or to spread the message to other people? What aspect of the performance was particularly good? Is there anything that would have added to the performance? Optional: Using the feedback, amend and improve performance and perform to the whole school during an assembly.	

Assessment: (Who?, criteria, strategies, evidence etc)	**Notes:**

What about Waste? – Lesson 1: Recount

Supporting resource: Mind map diagram

- Read the information given on the PowerPoint slides
- Identify any key information and key words
- Jot these key phrases and words down in the circles below.
- Add further notes as more information is given, which expand upon the key words or phrases in the circles. Write these notes on the lines radiating out from the circles.



What about Waste? – Lesson 1: Recount

Supporting resource: Recount scaffold

- Use the information collected on your mind map or in your jotter to form the basis of your recount text
- Use the following sentence openers as part of the recount text. You do not need to keep them in the same order

I found the PowerPoint interesting because

I discovered that

I also learnt

I would like to find out more about ..... because

Finally

As you can see

What about Waste? – Lesson 2: Instructions

Supporting resource: Key features of an instructional text

Key features of an instructional text:

- **A clear main heading telling the reader what the instructions are for**
- **Numbered stages** – to help organise the steps into a set of instructions
- **Sub-headings** – to break down the main steps within the instructions
- A **'You will need'** section – highlighting what you will need using **bullet points**.
- Useful **diagrams, illustrations or photographs** – to help the reader to see what it should look like along the way.
- **More than one instruction for each sub-heading** – so each section is easy to follow with enough detail to help the reader.

Remember:

- Think what you need to carry out the task.
- Write step-by-step instructions.
- Think about the order that you have to do things.
- Try not to miss anything out.
- Read through your instructions when you have finished. Do they work?

Key vocabulary:

First, next, after that, then, before, when, now, finally, step by step.

What about Waste? – Lesson 3: Explanation

Supporting resource: Energy from Waste text by Devon County Council

Energy from Waste

In Devon, we currently (September 2014) recycle 55% of our waste. This means the remaining 45% is sent to a landfill site where it is buried in a hole in the ground. However, from Spring 2015, 56% of our waste will be recycled, 27% will go to an Energy from Waste (EfW) plant and the remaining 17% will go to a landfill site until an alternative can be found.

What happens at an Energy from Waste Plant?

In an EfW plant the rubbish is put into a furnace and is incinerated (another word for burning) at a very high temperature; approximately 850ºC.

Energy

When the rubbish is incinerated it produces energy, which heats water in a boiler. The water then changes state to become super hot steam and this turns a steam turbine which generates energy in the form of electricity. Producing electricity from EfW plants means we don't have to the use fossil fuels like coal and oil to produce energy.The incineration process also produces some gases and ash.

What happens to the ash and gases?

There are strict laws to make sure that any gasses which are produced are carefully cleaned and filtered to make them safe. This means that they have a minimal impact on the environment and people's health. It is mainly hot air that goes out of the chimney.

After the rubbish has been incinerated, it leaves an ash, just like any other fire. There are two types of ash produced; 'bottom ash' and 'fly ash'. Magnets are used to collect any iron and steel from the bottom ash, and these metals are then recycled. The bottom ash can be used to make road surfaces and buildings.

A small amount of fly ash is created from the gas cleaning process, and is treated and then buried in a special landfill site.

So what's the problem?

Energy from Waste can be a good solution but there are some possible problems.

- If people think their rubbish is being made into energy they might not recycle as much. Recycling saves more energy than putting rubbish into an EfW plant so people need to be reminded of this.
- An EfW plant costs a lot of money and needs to take waste in for 25 – 30 years, so if new ways of dealing with rubbish come along they may not be able to be used for a number of years.
- Some people worry that EfW plants will be polluting and don't want one built near their houses. However, all modern EfW plants are very efficient and filter and clean the gases before releasing them.
- A special landfill site needs to be found to take the fly ash.

EfW plants produce carbon dioxide, which is a greenhouse gas, but the amount is much less than waste in a landfill site produces.

What about Waste? – Lesson 3: Explanation

Supporting resource: Book extract - from ‘Why should I recycle?’ by Susan Meredith (pages 1-2 of 6)

A load of rubbish

Until fairly recently, people used to dump all their rubbish out for the bin collectors and then forget about it. Not any more – thanks to recycling.

But how does recycling work and why is it so important? Read on and you'll find out, as well as getting loads of tips on how to do some recycling of your own.

Why is rubbish a problem?

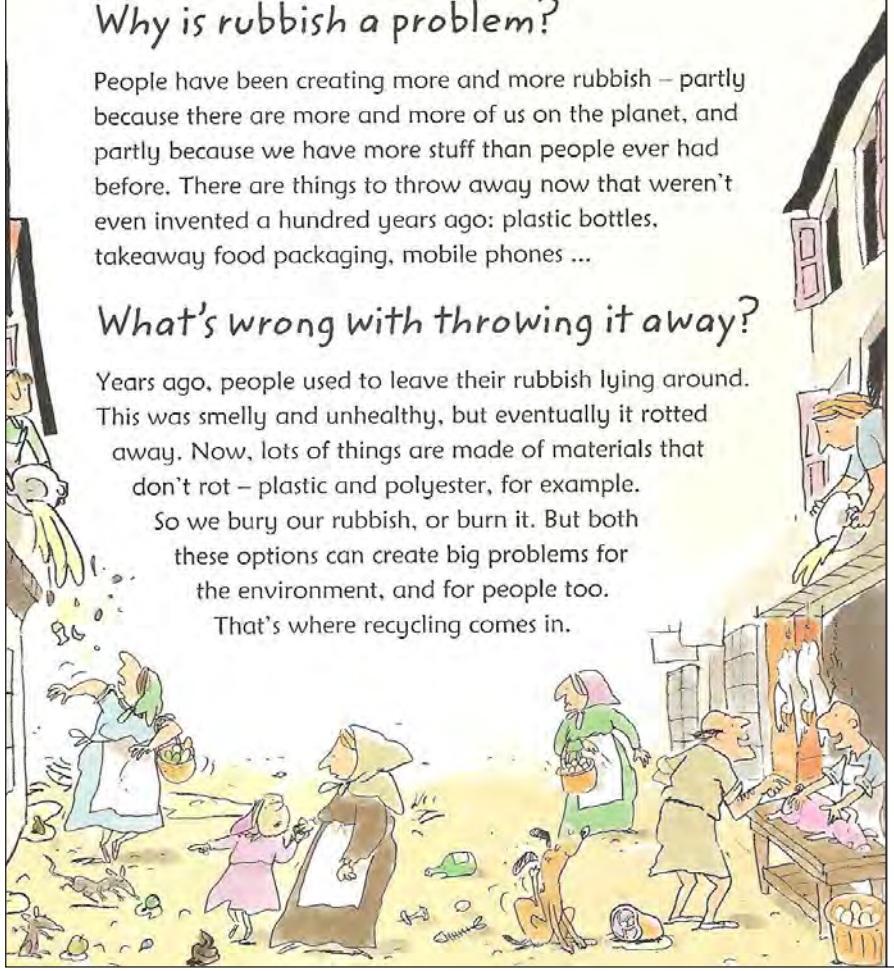
People have been creating more and more rubbish – partly because there are more and more of us on the planet, and partly because we have more stuff than people ever had before. There are things to throw away now that weren't even invented a hundred years ago: plastic bottles, takeaway food packaging, mobile phones ...

What's wrong with throwing it away?

Years ago, people used to leave their rubbish lying around. This was smelly and unhealthy, but eventually it rotted away. Now, lots of things are made of materials that don't rot – plastic and polyester, for example.

So we bury our rubbish, or burn it. But both these options can create big problems for the environment, and for people too.

That's where recycling comes in.



What is recycling?

Recycling means making use of rubbish by breaking it down and turning it into something new.

Almost two thirds of what we throw away is recyclable – that is, capable of being recycled. In a few countries, people already recycle that amount but in most, people could recycle far more than they do.

Some things are recycled into the same kind of product all over again ...

or they may be made into something different but similar ...

but sometimes they're turned into something completely different.

Reduce and reuse

Recycling rubbish is much better than burying or burning it, but it's even better to reduce the amount you have to get rid of in the first place. Almost everyone can be less wasteful, by throwing less stuff away while it's still useful – and even by buying less too.

It's also better for the planet if we reuse things – by getting them mended, or giving them away for someone else to use.

What about Waste? – Lesson 3: Explanation

Supporting resource: Book extract - from 'Why should I recycle?' by Susan Meredith (pages 3-4 of 6)

Recycling and the planet

Recycling is great for reducing our rubbish mountain, but it's important in all sorts of other ways as well. Making recycled things causes far less damage to the planet than making them from scratch, and it costs less too.

Saving raw materials

A lot of our stuff is made from raw materials that come from the Earth, such as plastic and polyester from oil, electrical wires from copper, paper and wood from trees. It's wasteful to use up raw materials, some of which are scarce, when they could be recycled instead.

Most plastic bottles are made from oil.

Saving energy

The machines that make things and the machines that extract raw materials from the ground all need a lot of energy to make them work. This comes mainly from 'fossil fuels' – coal, gas and oil – which also have to be taken from the Earth.

Such huge amounts of these fuels have been used that it's getting harder to find enough of them to keep everything going. Recycling uses far less energy than making something brand-new, as the product has been processed once already.

Making a recycled drinks can uses only 5% of the energy of making one from scratch.

Recycling one glass bottle saves enough energy to power a computer for 25 minutes.

Saving the environment

The processes used to extract raw materials – quarrying for stone, logging for wood, mining for coal, drilling for oil – can all damage the environment. They harm wildlife, and create their own waste, which has to be cleaned up.

Waste heaps from mining can pollute the environment.

Fossil fuels have to be burned to produce energy. But the burning produces harmful waste gases. Some pollute the air and water. Others, such as carbon dioxide (CO_2), are the main cause of one of the planet's biggest problems – a rise in average temperatures, known as global warming. This is leading to climate changes, including more wild and dangerous weather.

There are more hurricanes nowadays because of climate change.

Recycling also causes some damage to the environment but nothing like as much as *not* recycling. In fact, it would be worth recycling just to cut down on the CO_2 we produce, even if there were no other advantages to it at all.

What about Waste? – Lesson 3: Explanation

Supporting resource: Book extract - from ‘Why should I recycle?’ by Susan Meredith (pages 5-6 of 6)

Why not bury rubbish?

In some countries, including the UK and USA, most waste is buried out of sight in underground sites known as landfills.

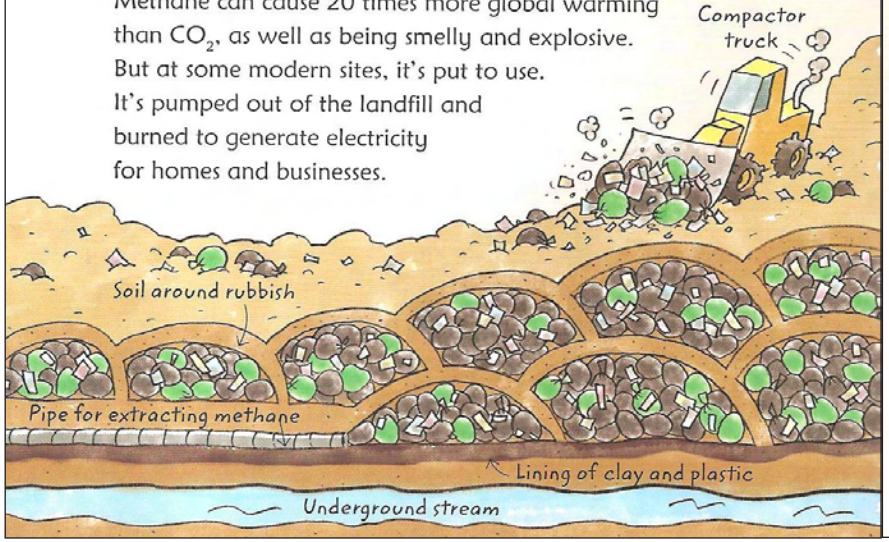
What happens at a landfill?

A landfill is basically a big hole in the ground. The rubbish is tipped into it and then compactor trucks spread it out and squash it down to fit in as much as possible. Diggers tip soil around the rubbish at the end of each day.

Rubbish in landfill sites produces toxic liquids and climate-changing gases such as CO_2 and methane. The sites are lined with clay and plastic to stop the liquids leaking into the soil and polluting water that runs underground. Once the sites are full, they're capped with clay and plastic to stop the gases escaping into the air. Then they're covered over with grass.

Creating energy from landfill waste

Methane can cause 20 times more global warming than CO_2, as well as being smelly and explosive. But at some modern sites, it's put to use. It's pumped out of the landfill and burned to generate electricity for homes and businesses.



So what's the problem?

Even though the rubbish is out of sight and steps are taken to prevent pollution, burying rubbish isn't ideal.

* As we produce more rubbish, we need more and more landfill sites. It's getting harder to find enough land for them.
* Most of the rubbish won't rot away quickly, but will hang around for decades, for centuries, or even forever.
* Some rubbish will rot away fairly fast (see page 20) if it's in contact with air, but there's very little air in a covered landfill. And it's this kind of waste that produces methane, which escapes until the site is capped, or unless it's pumped out.
* In some parts of the world, landfill sites aren't lined or capped and, even when they are, they may eventually develop cracks.

* In an unlined or faulty site, soil becomes polluted. So does groundwater, which flows into rivers. The pollutants get into wildlife, food and drinking water.
* The slowly rotting rubbish gives off chemicals that smell like rotten eggs – not pleasant for people who live near the landfill site.
* If a site isn't covered properly, it attracts rats and flies, which carry disease.

What about Waste? – Lesson 3: Explanation

Supporting resource: Explanation - Writing frame

I want to explain why / how / when / what

There are several reasons for this. The chief reason is

Another reason is

A further reason is

What about Waste? – Lesson 4/5: Persuasive writing

Supporting resource: Writing frame - letter structure

1. Your Name and Address; Top right-hand corner
2. Recipient Name and Address; Left-hand side
3. Formal Opening Dear...
4. Introduce yourself Who you are? What do you do?
5. What are you writing about? What is the problem? What is causing the problem? Why do you feel strongly about this?
6. What do you want the recipient of the letter to do? How can they help you generally? What can they specifically do to help?
7. Thank the recipient for their time and future help
8. Formal ending Yours faithfully: if you have addressed the letter to Sir/Madam Yours sincerely: if you have addressed the letter to a named recipient

What about Waste? – Lesson 6: Descriptive Writing

Supporting resource: Book extract 1 - from ‘The Iron Man’ by Ted Hughes

Objective: identify descriptive language used to describe the Iron Man. Highlight with the class the descriptive language used to describe the Iron Man

The Coming of the Iron Man

The Iron Man came to the top of the cliff.

How far had he walked? Nobody knows. Where had he come from? Nobody knows. How was he made? Nobody knows.

Taller than a house, the Iron Man stood at the top of the cliff, on the brink, in the darkness.

The wind sang through his iron fingers. His great iron head, shaped like a dustbin but as big as a bedroom, slowly turned to the right, slowly turned to the left. His iron ears turned, this way, that way. He was hearing the sea. His eyes, like headlamps, glowed white, then red, then infra-red, searching the sea. Never before had the Iron Man seen the sea.

He swayed in the strong wind that pressed against his back. He swayed forward, on the brink of the high cliff.

And his right foot, his enormous iron right foot, lifted – up, out, into space, into nothingness.

CRRRAAAASSSSSSH!

Down the cliff the Iron Man came toppling, head over heels.

CRASH!

CRASH!

CRASH!

From rock to rock, snag to snag, tumbling slowly. And as he crashed and crashed and crashed

His iron legs fell off.

His iron arms broke off, and the hands broke off the arms.

His great iron ears fell off and his eyes fell out.

His great iron head fell off.

All the separate pieces tumbled, scattered, crashing, bumping, clanging, down on to the rocky beach far below.

A few rocks tumbled with him.

Then

Silence.

Only the sound of the sea, chewing away at the edge of the rocky beach, where the bits and pieces of the Iron Man lay scattered far and wide, silent and unmoving.

Only one of the iron hands, lying beside an old sand-logged washed-up seaman’s boot, waved its fingers for a minute, like a crab on its back. Then it lay still.

What about Waste? – Lesson 6: Descriptive Writing

Supporting resource: Book extract 2 - from 'The Iron Man' by Ted Hughes

Objective: identify descriptive language used to describe the Iron Man. With a partner, highlight the descriptive language used to describe the Iron Man in this extract

The Return of the Iron Man

Then, as Hogarth watched, a huge figure climbed up over the cliff-top. The two lights rose into the sky. They were the giant figure's eyes. A giant black figure, taller than a house, black and towering in the twilight, with green headlamp eyes. The Iron Man! There he stood on the cliff-top, looking inland. Hogarth began to run. He ran and ran. Home. Home. The Iron Man had come back.

So he got home at last and gasping for breath he told his dad. An Iron Man! An Iron Man! A giant!

His father frowned. His mother grew pale. His little sister began to cry.

His father took down his double-barrelled gun. He believed his son. He went out. He locked the door. He go in his car. He drove to the next farm.

But that farmer laughed. He was a fat, red man, with a fat, red-mouthed laugh. When he stopped laughing, his eyes were red too. An Iron Man? Nonsense, he said.

So Hogarth's father got back in his car. Now it was dark and it had begun to rain. He drove to the next farm.

That farmer frowned. He believed. Tomorrow, he said, we must see what he is, this iron man. His feet will have left tracks in the earth.

So Hogarth's father again got back into his car. But as he turned the car in the yard, he saw a strange thing in the headlamps. Half a tractor lay there, just half, chopped clean off, the other half missing. He got out of his car and the other farmer came to look too. The tractor had been bitten clean off – there were big teeth-marks in the steel.

No explanation! The two men looked at each other. They were puzzled and afraid. What could have bitten the tractor in two? There in the yard, in the rain, in the night, while they had been talking inside the house.

The farmer ran in and bolted his door.

Hogarth's father jumped into his car and drove off into the night and the rain as fast as he could, homeward.

The rain poured down. Hogarth's father drove hard. The headlights lit up the road and bushes.

Suddenly – two headlamps in a tall treetop at the roadside ahead. Headlamps in a treetop? How?

Hogarth's father slowed, peering up to see what the lights might be, up there in the treetop.

As he slowed, a giant iron foot came down in the middle of the road. A foot as big as a single bed. And the headlamps came down closer. And a giant hand reached down towards the windshield.

The Iron Man!

What about Waste? – Lesson 9: Poetry writing

Supporting resource: Poem - A Price to Pay by Sarah Connors

A Price to Pay

Nature weeps
Who should care?
Deforest and dam
Deforest and dam

Earth's treasures are stolen
Who should care?
Mining and drilling
Mining and drilling

Food for the few
Who should care?
Sow and harvest
Sow and harvest

Our hunger grows
Who should care?
Consume and discard
Consume and discard

Resources wasted
Who should care?
Squander and leave
Squander and leave

It expands and spreads
Who should care?
Burying and burning
Burying and burning

When will it end?
Who should care?
Change our ways
Change our ways

Who should care?
Who should care?
The future is ours
The future is yours

What about Waste?

Supporting resource: Five minute filler activities

Waste 8 (hangman)

Bring the classic game up to date by using a digital 8 figure instead of a hangman. Focus on some of the words that are related to waste. Remove a line per incorrect letter. Who will beat the Waste 8?

Round the 3Rs alphabet

Challenge the class to go through the alphabet from A – Z and relate all words to waste.

Waste Definitions

Write 5 waste related words on the board. Pupils to look up and write down the definitions as quickly as possible. There could be a prize for the quickest child. Bonus points could be given if sentences are written using the word correctly.

3Rs Noughts and crosses

Draw a noughts and crosses grid on the board, and number each box from 1 to 9: Now, divide the children into two teams, and label the teams “noughts” or “crosses”. Each team has to answer a waste related question correctly before they can place their symbol into an appropriate place on the board.
The winning team is the one who gets a line of three of their symbols on the grid.

1	2	3
4	5	6
7	8	9

Questions could include:

What are the 3Rs? In what order should the 3Rs be? Where does our rubbish go? What does ‘reduce/reuse/recycle’ mean? Name one problem with landfill (this can be asked more than once). Name one thing we can do to reduce/reuse (this can be asked more than once). What does EfW stand for?

SLAM!

Before the lesson decide what waste related questions you would like to ask and write down the answers on the board randomly.
1) When the class starts, choose two people to come at the front. They should stand on each side of the board.
2) Now you ask the question and the pupils work it out in their head and slam their hand on the correct answer.
3) Whoever gets it correct gets a point and the first person to get 5 points wins.
The pupil who loses should now go back to their seat and you pick another pupil to play the game. The first person to win three games wins and is the SLAM CHAMPION.

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