

Alternative Learners Pack

For Group Leaders, Home Schoolers and Parents

Plastics Challenge

This pack aims to be a complete guide to the **Plastics Challenge**. It provides clear steps to move through a six week unit of work, including details of engaging activities for you to conduct with your children.

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Section 1 Project Overview

Introduction ··

The Canal & River Trust is the charity that cares for 2,000 miles of waterways. Litter has long been an issue for the Trust and as a charity, we want to work with communities, schools and young people to help to make things better for the future.

We hope that this project will help to raise awareness of the impact of littering on our environment, and in particular, on the wildlife in and around our canals and rivers. There is a good deal of evidence to show that animals can become entangled in litter or mistake smaller items of plastic for food. As well as being extremely damaging to nature, it's unsightly and puts people off wanting to visit their local canal or river.

Not only does litter affect our inland waterways but much of the pollution in our oceans arrives directly from rivers. Around 80% of the plastic in our oceans comes from litter dropped inland.

Pollution in the form of plastic continues to be one of the greatest environmental challenges. Plastic can be a useful and robust material but when people throw plastic away it doesn't disappear, most of it isn't biodegradable. It doesn't rot, like paper or food. Instead, it can hang around in the environment for hundreds of years.

The core project

The **Plastics Challenge** hopes to support you on a journey to raise awareness and understanding of the environmental and social issues surrounding litter and plastics. Over six weeks you will guide your children through an engaging and hands-on project designed to inform, inspire and empower your learners.

How far you take the project beyond this is up to you. We encourage you to get outside and be active as much as possible. All aspects of the project and the resources provided are **FREE!**

After you have finished the six activities in the Plastics Challenge, award your class members with the official <u>Plastics Challenge</u> <u>completion certificate</u>.



Organise a litter pick on your local canal or river

During **Plastics Challenge** work unit we would like to encourage you to spend as much time as possible outdoors. Each activity outlined the section 3 gives an idea on how to do this. One of the most rewarding activities you can do outside is your own **litter pick** and we would love for you to conduct this along your nearby river or canal towpath.

Planning

Take a look at our <u>Visit Planning Guide</u> for general advice on planning a visit to a canal or river.

Please use the <u>Organise a Litter Pick on Your Local Canal or</u> <u>River</u> document for detailed information and safety advice.

After the litter pick

The 'Sorting Out Litter' activity (page 14) is a great way to follow up your litter pick. You could also try one of the ideas below:

Eco bricks: An Ecobrick is a building block created by packing clean and dry used plastic into a plastic bottle very tightly. For ideas about how they can be used visit: <u>www.ecobricks.org</u>



Crisp packets: Crisp packets are not suitable for most council recycling services however there are other options. You could sign up to the <u>Terracycle Crisp Packet Recycling Scheme</u> and earn money for your group. Or, if you are feeling crafty, why not get your children involved in some <u>Crisp packet weaving</u>. These bracelets could then be sold to raise money for your group or a chosen charity.



Section 2 Project Planning

Key themes & questions

For children aged 5 - 7 years

- Our world
- Materials
- Seasides
- No place like home

For children aged 7 - 11 years

- The water cycle
- Our local area
- Earth matters
- Our environment

Key questions

- What is plastic and what are the positives and negatives about this material?
- How does plastic pollution impact the world around us?
- How is litter in canals and rivers linked to the ocean?
- What are microplastics and how do they affect us?
- How can we reduce plastic pollution?
- How can we make more environmentally conscious consumer choices?
- How can we spread the message about the dangers of plastic pollution?

Recommended books

For children aged 5 - 7 years

Somebody Swallowed Stanley by Sarah Roberts

A Planet Full of Plastic by Neal Layton

One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia by Miranda Paul

Duffy's Lucky Escape: A True Story About Plastic In Our Oceans by Ellie Jackson

Don't Throw That Away! by Lara Bergen

For children aged 7 - 11 years

Plastic: past, present, and future by Eun-ju Kim

What A Waste: Rubbish, Recycling, and Protecting our Planet by Jess French

Not for me, please!: I choose to act green by Maria Godsey

Kids Fight Plastic by Martin Dorey

The Tale of a Toothbrush: A Story of Plastic in Our Oceans by M. G. Leonard



Writing opportunities •

For children aged 5 - 7 years

Write a diary entry as an animal affected by litter.

Write instructions for how to carry out a litter pick.

Write an invitation to a single-use plastic free party.

Write a letter to a local councillor to ask about local provision for recycling.

Write a setting description of a canal covered in litter.

Keep a waste diary at home.

For children aged 7 - 11 years

Create a persuasive poster on the issues discussed during the unit. For example; encourage people to stop dropping litter; encourage people to recycle or reduce their use of plastic.

Write to local supermarkets to encourage them to reduce plastics in the store. For example; provide cardboard boxes for shoppers to use instead of plastic bags; stop plastic packaging for fruit and vegetables.

Write a debate about whether plastic bottles should be banned.

Write a newspaper report about the damage plastics are doing to marine life.

Recommended websites

For children aged 5 - 7 years

What should I do with my rubbish animation: <u>www.bbc.co.uk/bitesize/</u> <u>clips/z8s87hv</u>

Blue Planet Live Lesson: <u>www.bbc.</u> <u>co.uk/teach/live-lessons/blue-</u> <u>planet-live-lesson/zn7tkmn</u>

Reduce, reuse and recycle resources: www.kidsagainstplastic.co.uk

For children aged 7 - 11 years

How are plastics recycled? <u>www.</u> <u>recyclenow.com/recycling-knowledge/</u> <u>how-is-it-recycled/plastics</u>

Keep Britain Tidy: <u>www.keepbritaintidy.org/</u>

Recycle your waste: <u>www.terracycle.com/</u> <u>en-GB</u>



Section 3 Plastics Challenge Lessons

Activity overview

Each weekly session features a PowerPoint presentation and a suggested hands-on activity. The presentations aim to set the scene for the activity and provide opportunities for discussion.

1. A Plastic Problem - 30mins

The Plastic Problem PowerPoint presentation provides your children with an overview of the problems related to plastic pollution and helps to introduce the topic as a whole. **Activity**: Science experiment about decomposition featuring an activity sheet to plan the experiment and record results.

2. Sorting Out Litter - 30mins

This is a great activity to follow up a real litter pick of your own – ideally to a canalside location. The PowerPoint presentation sets the scene with a 'fictional group litter pick'. This can be used to compare your own litter pick results.

Activity: Create a visual/physical graph showing the types of litter you found on your own litter pick – Take a photo of your graph to share your findings.

3. Plastic in our Oceans - 30mins

The PowerPoint presentation provides an overview of the impact of plastic on the ocean and how it gets there. The presentation ends with a hands-on activity to encourage empathy and understanding involving rubber bands.

Activity: Cut and stick activity of litter's journey to the sea.

4. The Fight Against Litter - 30mins to 1hr

This week, children are encouraged to see how we can be proactive and reactive in the fight against litter. The PowerPoint presentation gives a definition of these terms.

Activity: Design a machine to collect litter in the canal/river or ocean then make models of their machine from waste materials.



Activity overview continued ·····

5. Plastic Wrap - 30mins to 1hr

With a good foundation of language and understanding, this week's activity will focus on writing a litter themed rap, song or poem.

Activity: Write a poem, song or rap, then make musical instruments from waste material.

6. A SUPA Party - 30mins to 1hr+

After all their learning and hard work, it's time to plan a celebration. This is a great way to raise environmental awareness and to shout about your fabulous work to a wider audience. First, use the presentation to identify problems with a fictional party scene, this helps to generate ideas and set up for the activity.

Activity: Plan a **s**ingle-**u**se **p**lastic **a**voidance party and show off your plastic/recycled creations. This is a great conclusion to the project and it's also a perfect opportunity to get children to perform their plastic 'wrap' to a larger crowd.



A Plastic Problem - 30 minutes

 To understand the material qualities of plastic and that it takes a long time to decompose. To recognise the impact of litter on the environment. To plan a science experiment; make predictions, observations and record results. A Plastic Problem' PowerPoint presentation Three containers (per group). Man-made materials (Cardboard/paper). Natural materials (Apple core/strawberry). Plastic items (Plastic bag/bottle cap). 'A Plastic Problem' task sheets x 2. 	Learning Objective	Resources
	 and that it takes a long time to decompose To recognise the impact of litter on the environment. To plan a science experiment; make 	 Three containers (per group). Man-made materials (Cardboard/paper). Natural materials (Apple core/strawberry). Plastic items (Plastic bag/bottle cap).

Success Criteria

- I understand litter that will decompose but some materials will break-down quicker than others.
- I understand the effect of plastic pollution on the environment.

Leader/Parent Input

Begin by asking children how humans can affect the environment positively and negatively – planting trees; recycling; littering etc.

Show 'A Plastic Problem' PowerPoint presentation to children. Discuss how nature has it's own way of recycling organic matter. Autumn leaves or dead animals will rot and be absorbed back into the ground returning nutrients. Discuss why plastic pollution is a problem. Emphasise that plastic litter is a particular problem as it does not break down for hundreds of years and can present long term problems, making areas unsightly and harming wildlife.

Main Activity - Use the two 'Plastic Problem' task sheets provided.

Decomposition Activity – Children will work in groups to set up a simple experiment to observe how different items of litter decompose in water. Children will predict what will happen to each material and then observe and record the changes over time.

Allow children to choose the materials they are going to investigate (One man-made, one natural and one plastic item works well).

Suggestions

 Children could create and design a 'compostable' logo/sticker choosing appropriate symbols, colour and text.

Follow-up	Key Words
After the experiment compare discuss: Were the children predictions correct? What would happen to these items of litter in the canal?	Decompose, pollution, litter, biodegradable, environmentally friendly, environment, positive, negative.
Useful Websites/External Resources	'Get Outside' Ideas
Resources for learning more about plastic: <u>www.</u> <u>plasticeducation.com</u>	Make this experiment 'more realistic' by conducting in an outside environment where the materials will be exposed to more natural elements.

A Plastic Problem

Decomposition Experiment

What materials are you going to investigate? Write them in the box below:

Material 1:

Material 2:

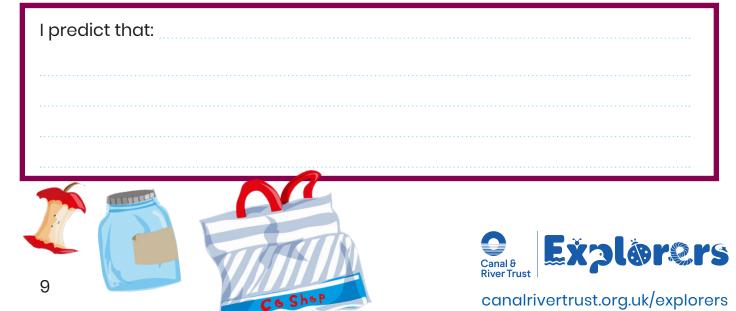
Material 3:

We're going to investigate how long different materials take to

decompose in water.

Put each piece of material in a jar or container and cover with water. Draw a diagram of your experiment below. Add labels to describe each part.

You are going to check your test subjects each week and record your **observations**. What do you **predict** you will see?



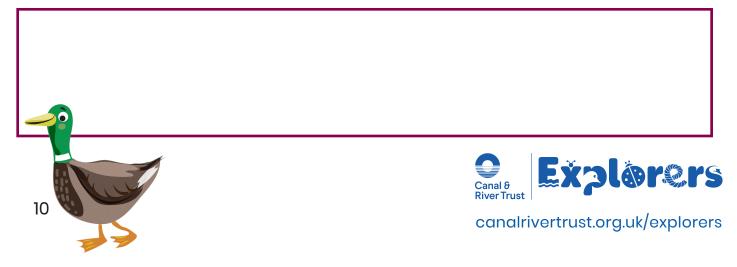
A Plastic Problem

Decomposition Experiment Continued...

Use a table like the one below to describe your observations. You could take a photo of your test subjects at each observation stage.

	Material 1:	Material 2:	Material 3:
Observation 1 Date:			
Observation 2 Date:			
Observation 3 Date:			
Observation 4 Date:			
Observation 5 Date:			

What are your **conclusions**?



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Activity 2

Learning Objective	Resources
 To organise and interpret data. To compare and analyse results. 	 'Sorting out Litter' PowerPoint presentation Litter pickers, gloves and rubbish bags. Chalk. Camera.
Success Criteria	
 I can collect data about litter. I can interpret and present data on a graph. 	
Leader/Parent Input	
Before the session, complete an organised litter pick in y Show the 'Sorting out Litter' PowerPoint presentation to c pictogram or pie chart in the PowerPoint presentation. Ask: How can we organise and present our own data? Decide which categories to sort the litter in to (i.e. plastic Interpret the data with your children and encourage the the PowerPoint presentation. N.B. If a waterside litter pick isn't possible, use litter collect	hildren. Discuss the results of the demonstration s, cardboard etc.). m to compare it to the data in the example in
Main Activity	
Big Outdoor Graph Activity – Children can display their Children could use the clean waste collected to construct the collected waste is not suitable, they could use their b You could present the data in a tally chart or pictogram. Take a photo of your 'big outdoor graph' and share it, write	ct a graph of the different types of material. If bodies and chalk to create the graph.
Suggestions	
 Using items collected during the litter pick or waste for raise awareness of plastics. For ideas see <u>www.eco-s</u> 	
Follow-up	Key Words
Litter Relay Race: Put a pile of mixed 'waste' material in an outdoor space. Split the children into groups. Assign each group a material (Plastic, metal, fabric, food waste. Recyclable, biodegradable, non-recyclable). One member of the team races to collect their material from the pile and bring it back to their team. The winner is the team with the most correct items.	Pollution, litter, recyclable, biodegradable, non- recyclable.
Useful Websites/External Resources	'Get Outside' Ideas
Canal and River Trust: <u>Creating Plastic free canals</u>	Conduct a litter pick at a canal or riverside. The graph work and Litter Relay Race are great activities to do outside.

Plastic in our Oceans - 30 minutes

Learning Objective	Resources
 To understand that litter dropped inland can end up in the ocean. To recognise the impact of litter on the environment. 	 'Plastic in our Oceans' PowerPoint presentation. Elastic bands. 'Plastic in our Oceans' task sheet. Journey to the sea diagram (page 14). Sand. Large box. Old plastic bag cut up to line water channels.
Success Criteria	
 I understand how litter can travel to the sea. I understand how a piece of plastic litter can ca 	use an animal harm.
Leader/Parent Input	
Show the 'Plastic in our Oceans' PowerPoint present activity in pairs. Children will pretend their hand is a their partner will tangle a rubber band around their Ask: How did it feel to try to get your hand free? Was Explain we were using the rubber band to represent tangled in. Show the image of the <u>Great Pacific Gar</u>	bird or a fish that lives in your local waterway and fingers. it difficult or easy? all kinds of plastic litter that animals can get
Main Activity - Use the 'Plastic in our Oceans' task s	heet provided.

Children complete the cut and stick activity with the 'Plastic in our Oceans' task sheet to order the journey of a fictional plastic bottle to the sea – Use cut out labels on the 'Journey to the sea' diagram on page 14.

Suggestions

Use a large box (a shallow under-bed storage box works well) filled with sand. Dig out channels for canals and rivers, use tubes for drains, and model the journey litter can take to the sea. You could line water channels with plastic to help hold the water.

Follow-up	Key Words
Find out what you can do in your local area to help fight plastic pollution.	Microplastics, food chain, drains.
Useful Websites/External Resources	'Get Outside' Ideas
 How Much Plastic Is In Our Oceans? - Earth Unplugged <u>5 minute informative video</u> Mircoplastics found in mussels <u>short video</u> by University of Hull Albatrosses ingesting plastic - Blue Planet II: <u>2</u> <u>minutes of Episode 7</u> (CONTAINS IMAGE OF DEAD BIRD) 	The sand box and water activity (see suggestions) is great for outdoor learning. Let children investigate how light pieces of litter travel by wind and water. Don't forget to gather up the litter after.

A journey to the sea

How does a piece of litter dropped on land manage to travel far out to sea? Cut out the following mixed-up labels and add them to the 'Journey to the sea' diagram in the correct order.

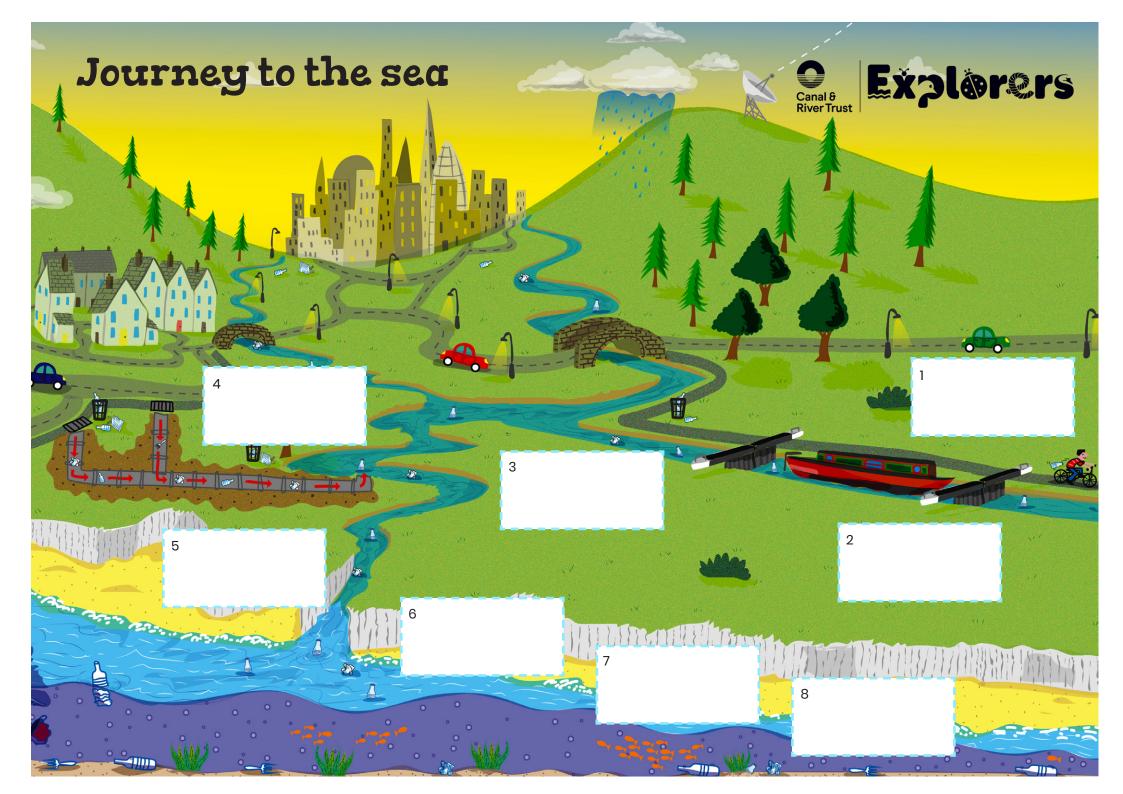
Fish eat the small bits of plastic by mistake.	Bashed by waves, the plastic bottle gets broken and sinks to the sea floor.	The wind blows the plastic bottle into a nearby canal.	The bottle floats into a lock that leads out to a river.	20 7
The plastic bottle floats along the river.	Someone drops a plastic bottle onto a towpath.	After many years the plastic starts to break up into smaller pieces.		

Use the space below to describe or draw a **different** journey for another piece of litter.

Maybe a dropped crisp packet gets washed down a drain or maybe a child lets go of a helium balloon in the park. What happens to the litter in the end?







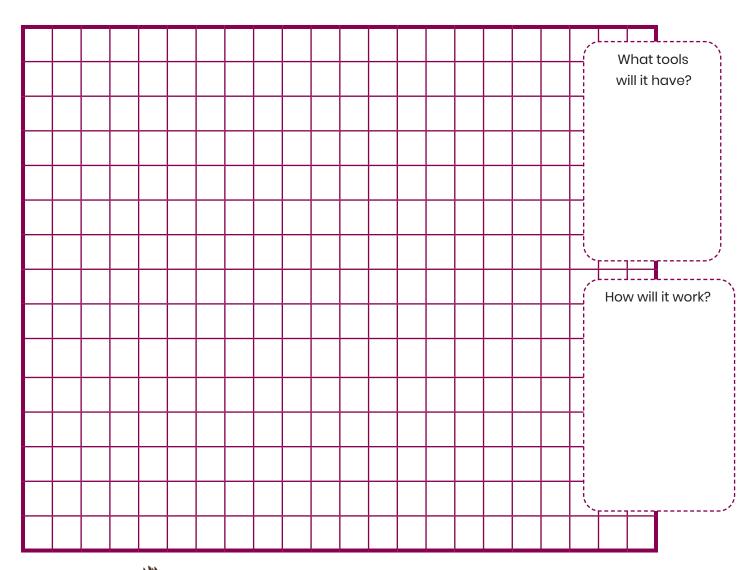
Learning Objective	Resources
 To understand that we are all able to take action against litter and waste. To think creatively about innovative methods to reduce litter in their local environment. 	 'The Fight Against Litter' PowerPoint presentation. 'The Fight Against Litter' task sheet. Various waste items (Yogurt pot, cardboard tubes).
Success Criteria	
 I can think of practical ways to reduce, reuse ar I can make responsible choices to reduce wast 	
Leader/Parent Input	
Ask: Do you think we should be picking up litter that the group. Remind children that even though clean immediate results. Show the 'The Fight Against Litter' PowerPoint prese	ing up is not an answer to the whole problem, it has
Main Activity - Use the 'The Fight Against Litter' task sheet provided.	
Children will draw their machine, labelling the key f	.e. does it need to move/float? If so how? What will it tive as possible.
Suggestions	
Children could present their model to the rest of the Encourage peer to peer questions and feedback.	e group in a 'dragons den' style sales pitch.
Follow-up	Key Words
Research other people's litter collecting inventions as a group. Make a pledge to help tackle litter in your area. It could be: 'Everyone picks up one piece of litter a day.'	Wasteful, proactive, reactive, inventive, prototype.
Useful Websites/External Resources	Get Outside' Ideas
The <u>Seabin Project</u> is a good example of a litter collecting machine design for the sea.	Tubs of water could be used outside so that children could demonstrate how their machine might work in the canal, river or ocean.

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The Fight Against Litter ·····

Design a litter collecting machine

Design a machine to collect litter from canals and rivers. Things to think about: Will someone need to control it? Will it float? How will it operate? What will it be made from?



Create a prototype of your machine by making a model with recycled items. You could present your model to the rest of the class and explain how it will work.



A Plastic 'Wrap' - 30 minutes

earning Objective	Resources
To think emotively about littering. To write a poem, song or rap about litter. To use interesting and inventive language.	 'A Plastic Wrap' PowerPoint presentation. 'A Plastic Wrap' task sheet (4 options). Various used items e.g. cardboard, plastic packaging, elastics and string.
uccess Criteria	

- I can identify key words relating to plastics and litter.
- I understand the vocabulary associated with plastics and litter.

Leader/Parent Input

Show the 'A Plastic Wrap' PowerPoint presentation to children. Discuss the sample poems with the group. Are they good? What do they mean? Could they add another verse?

Make a note of any key vocabulary. Refresh relevant literacy techniques if required e.g. similes or metaphors. Explain that they are going to write their own song/poem/rap about the impact of litter and to raise awareness of what can be done to reduce litter.

Main Activity - Use the 'A Plastic Wrap' task sheet provided.

In groups or individually, children write a song/poem/rap about litter. Use the 'plastic wrap' task sheet to help them to generate ideas. Shapes and borders have been provided in extra task sheets for use if required.

Children could write various poem genres e.g. an acrostic, haiku or shape poem. Plastic shapes and a plastic themed border have been provided to give options for writing up the poems.

Suggestions

Children could design and make musical instruments by reusing items that would be thrown away. For example; coffee tubs, cans, boxes, old pieces of piping, gift wrapping tubes, plastic packaging, elastics and string. Remember to recycle the items where possible at a later date.

Fc	bllow-up	Key Words
•	Children to perform their song/poem to the group using their instruments (if made). Children could write up their poems to create a wall display.	Inspire, emotions, simile, adjectives, alliteration
Us	seful Websites/External Resources	'Get Outside' Ideas
• •	<u>A Plastic Poem</u> for World Ocean Day (8th June). Selection of <u>environment themed poems</u> . A competition winning <u>litter poem.</u>	Do an outdoor performance of the rap/song or poem along with musical instruments.

Plastic 'Wrap'

Use this sheet to plan writing ideas for your poem, song or rap.

Adjectives	Alliteration
How does litter make you feel? List some adjectives to describe your feelings about litter. Example: Angry, cross.	Create some litter alliteration (two words with the same letter or sound at the beginning). Example: Polluting Plastic.
Rhyming Words	Similes
Use this space to write some litter and plastic themed rhyming words (words with the same sound at the end). Example: Strangle, tangle.	Use this space to write some plastic themed similes. Use the words 'like' or 'as' to make comparisons between two things. Example: Litter scattered like tears.
Rear Charles	

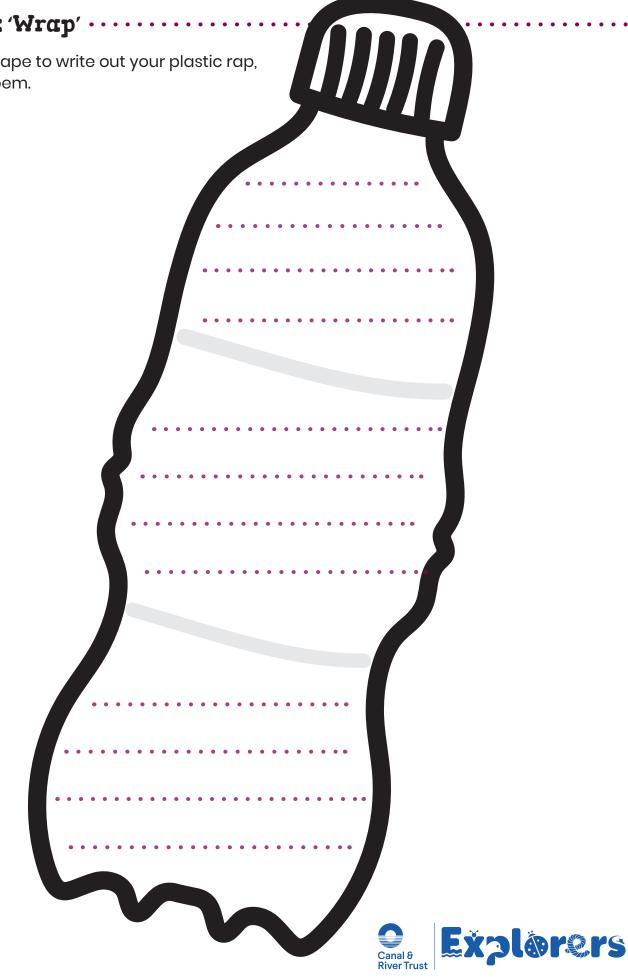
Plastic 'Wrap' •





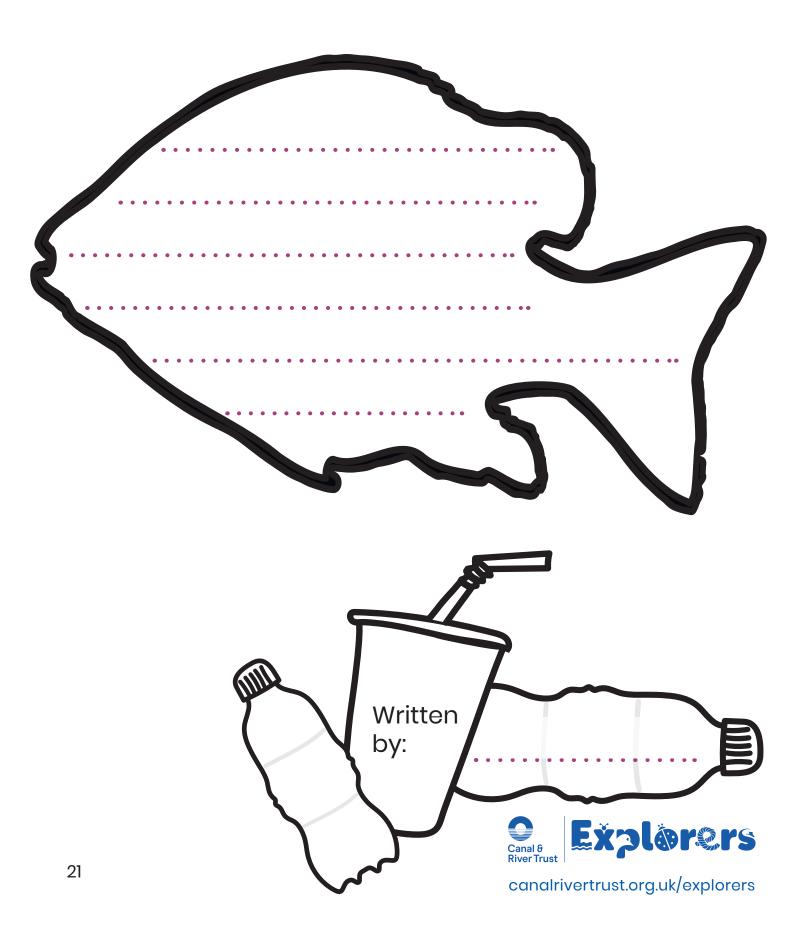
Plastic 'Wrap' ·

Use this shape to write out your plastic rap, song or poem.



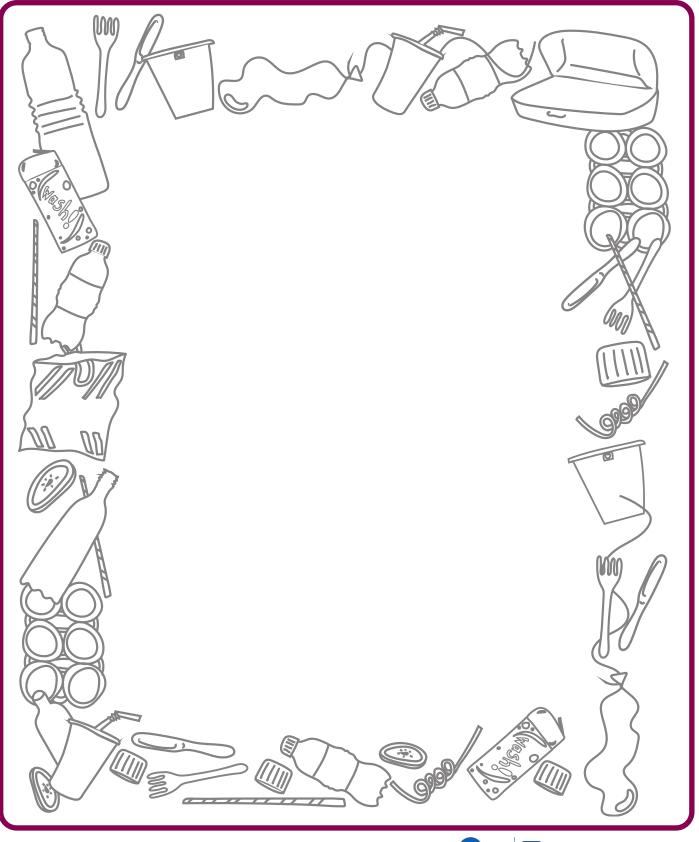
Plastic 'Wrap' •

Use this shape to write out your plastic rap, song or poem.



Plastic 'Wrap' ••

Use this space to write out your plastic rap, song or poem and colour in the plastic litter.





Party Time - 30 minutes

Learning Objective	Resources
 To be aware of single-use plastics in everyday life. To think creatively about ways to avoid single use plastics. 	 'Party time' PowerPoint presentation. 'Party time' task sheet.
Success Criteria	
 I know why single-use plastics are bad for the env I can choose sensible alternatives to single-use pl 	
Leader/Parent Input	
Discuss the positive and negative aspects of using plo washable, does not biodegrade). Emphasise plastic is once and then thrown away) are harming the environ Show the 'Party Time' PowerPoint presentation and dis plastic lunchbox).	very useful but single-use plastics (items used ment and wildlife.
Main Activity - Use the 'Party Time' task sheet provide	d.
party. Children could use the task sheet provided to plan ide all the alternatives to single-use plastics (for example balloons). Children could invite parents/carers/family to their pa litter pick, display their litter collecting machine mode	metal cutlery and paper chains instead of rty, where they could also share the results of the
Suggestions	is and perform their plastic wrap.
Suggestions	
Suggestions Children could design and write party invitations to in Discuss how the invitations will be distributed. Would o would be the advantages and disadvantages of this?	vite their parents/carers/family to the celebration designing a digital invitation be better? What
Children could design and write party invitations to in Discuss how the invitations will be distributed. Would d	vite their parents/carers/family to the celebration designing a digital invitation be better? What
Children could design and write party invitations to in Discuss how the invitations will be distributed. Would o would be the advantages and disadvantages of this?	vite their parents/carers/family to the celebration designing a digital invitation be better? What
 Children could design and write party invitations to in Discuss how the invitations will be distributed. Would of would be the advantages and disadvantages of this? Follow-up Reflect on daily use of plastic. Ask: How can we reduce the amount of single-use plastics that we use everyday? Children could keep a diary to record the 	vite their parents/carers/family to the celebration designing a digital invitation be better? What Key Words

SUPA Party •

Party preparations

Use this sheet to plan your 'SUPA' party. (Single-Use Plastic Avoidance party)



Who will you invite and how will you invite them?	What food will you bring and how will you bring it?	What games could you play?
How will you decorate your party room?	What will you use for cutlery, cups and plates?	Other thoughts and ideas

