



Teacher guide

This project pack is part of Asda's commitment to tackling the problem of plastic waste by using less plastic, recycling more and inspiring others to do the same.

Pupils are invited to join the **PI (Plastic Investigators) Club** and explore the issue of plastic waste through an assembly, a series of exciting 'missions' (lesson activities) and a competition. To bring extra fun and excitement to their learning, pupils also have the opportunity to visit an Asda store.

What's in this pack?

The following resources are provided in this pack to support pupils' PI Club work and prepare them to enter the competition.

Presentation	A PowerPoint presentation exploring the plastic waste issue and introducing the PI Club and competition
Lesson plan	A lesson of exciting PI Club activities to introduce pupils to the problem of plastic waste and what they can do to help
PI Club handbook	A handbook for pupils to fill in as they complete their PI Club missions
Competition leaflet	A leaflet for pupils, containing information about the competition, prizes, success criteria and an entry form
Letter to parents	A letter for pupils to take home and give to their parents, explaining what they have been learning about as part of the PI Club, and introducing the competition
Stickers	A set of stickers to use on an Asda store visit

Lesson plan

PLASTIC INVESTIGATORS

Welcome to the PI Club!

Are you ready to go on a mission?

CALLING ALL
PLASTIC INVESTIGATORS!

WELCOME TO
THE P.I.CLUB



Primary Lesson Plan – Key Stage 2

Lesson summary

This lesson follows on from the **PI Club presentation**. Pupils join the PI (Plastic Investigators) Club and are given their own **PI Club handbook** to complete. The learning activities are organised as a series of missions exploring what plastic is, the issues surrounding plastic waste and why using less plastic and recycling are so important. As a result of what they find out, pupils take action to tackle the issue of plastic waste in their own lives and the local community, culminating in a competition entry as a homework activity.

This lesson plan is part of Asda's commitment to educating children about reducing, reusing and recycling plastic and inspiring them to do the right thing. Your local Asda Community Champion might already have been in touch – perhaps they've even delivered the **PI Club presentation**, or your class has been on a store visit. If not, why not contact them to see how they can help? To do this, visit www.storelocator.asda.com add your postcode, search for your nearest Superstore or centre and ask to speak to the Community Champion.

Visiting a store is an exciting way to bring your pupils' learning to life. For each mission in this lesson plan you'll find a 'Store visit extra' – a suggestion for how you could extend learning on a store visit. Why not give it a go?

Suggested timing

- Approximately 100 minutes for the starter activity, main PI Club Handbook activities and plenary - the 'missions' can be spread out over two or more days
- An additional 20 minutes at the start of the lesson to show the PI Club presentation (if pupils haven't already seen this)
- Additional time for optional extension activities
- Homework time for competition entry

The activities are flexible enough to be spread out over two or more days, depending on what suits your class best. For example, you could break down the activities into three sessions:

- **Session 1:** Starter activity, Missions 1 and 2 (approx. 35 mins).
- **Session 2:** Missions 3, 4 and 5 (approx. 35 mins).
- **Session 3:** Missions 6, 7 and plenary (approx. 30 mins).

Learning objectives

We are learning about:

- the properties and uses of plastic
- what happens to plastic waste and the problems it can cause
- recycling and how plastic is recycled
- recycling in our area
- actions we can take to help tackle the problems created by plastic waste

Learning outcomes

- I can compare materials, recognise plastic and describe its properties and use
- I can explain the problems that plastic waste creates
- I can explain why recycling is useful and can describe plastic recycling
- I know some important facts about recycling plastic in our area
- I know what action I am going to take to help tackle the problem of plastic waste

PREPARATION AND RESOURCES

- PI Club presentation
- PI Club Handbook (one copy for each pupil)
- A variety of single-use, disposable plastic objects collected from around home and school, e.g. carrier bags, packaging, drinks bottles, cups, straws (enough for two per three or four pupils)
- Computers and internet access (or pre-printed information)

Using the PI Club presentation

Before they start these activities, pupils need to have been taken through the **PI Club presentation**. This acts as an introduction to the PI Club and provides information that is used in the lesson activities.

You could deliver the **PI Club presentation**:

- As an assembly, perhaps with the help of your Asda Community Champion
- At the start of the lesson

The presentation has been designed to take between 15 and 25 minutes to deliver, depending on how interactive you choose to make it.

As well as using the presentation as an introduction to the lesson activities, why not use the slides as a backdrop while you deliver the activities? This will help to set the scene for the pupils' PI Club work and act as a useful reminder of the information in the presentation. We suggest the following slides for different activities:

- **Starter activity – slide 1**
- **Mission 1 – slide 2**
- **Mission 2 – slide 3**
- **Mission 3 – slide 4**
- **Mission 4 – slide 8**
- **Mission 5 – slide 10**
- **Mission 6 – slide 9**
- **Mission 7 – slide 18**

Starter activity (10 minutes)

Remind pupils of the main points made in the **PI Club presentation**. You could use the following questions to prompt their recall:

- **Which material are we going to investigate?** (plastic)
- **Why is plastic so useful?** (e.g. it's light, cheap, hygienic, flexible, protective, lasts well)
- **What is the main problem with plastic waste?** (it is causing pollution)
- **What could we do with plastic waste instead of throwing it away?** (recycle it)
- **Can anyone remember what percentage of households in the UK recycle each week?** (45%)
- **What are we going to do to try to improve this?** (Join the PI Club!)

Give each pupil a **PI Club Handbook** and explain that they are going to be special agents on a mission to find out more about plastic and help solve the problem of plastic waste.

Ask pupils to fill in their name and the date on the front cover of the Handbook.

Then ask them to turn to the first page and read through the **PI Mission Diary** together. This summarises:

- the seven exciting missions the pupils are going to complete in this lesson and as homework
- the learning outcomes they will achieve along the way

Explain that, as they complete each mission, they should tick it off in the diary.

Main activities (85 minutes)

Mission 1: Materials hunt (10 minutes)

Explain that as the PI Club is all about plastic, pupils' first mission is to make sure they can spot it when they see it!

Explain to pupils that materials are substances from which things are made and that they all look, feel and behave differently. How many materials can pupils think of?

Ask pupils to turn to **Mission 1** in their **PI Club Handbook**. Give them five minutes to look around the classroom and list objects made from wood, glass, plastic, metal and paper/card. You could give them magnets so they can test the magnetism of different materials.

What are the properties of each material? Ask pupils to draw lines matching each material to its properties. Can they add their own adjectives?

ASDA STORE VISIT EXTRA

Give pupils five minutes to investigate the packaging in an aisle of the supermarket (pick something with a variety of packaging types, such as a general groceries section). How many different materials can they find? You could make blank copies of the Mission 1 activity sheet for them to complete in the store.



Mission 2: Undercover plastic (15 minutes)

Working in groups of three or four, give pupils two disposable plastic objects (e.g. a carrier bag and a piece of packaging) and one reusable plastic object (e.g. a packed lunchbox). Do they know what the objects are made of? Make sure they are clear that they are all different types of plastic.

Ask pupils to turn to **Mission 2** in their **PI Club Handbook**. Ask them to complete the chart by:

- drawing a picture of each object
- writing a sentence about what it is used for
- listing the properties that make plastic a good choice of material for the object
(The information on the slide should help them)

Then ask pupils to write short sentences explaining how many times they think the objects would be used and how they would dispose of the objects. As an extension, they could consider the limitations of plastic and which materials could be used instead. Share ideas as a class and talk with pupils about the difference between single-use, disposable objects and plastic objects that we use over and over again.

ASDA STORE VISIT EXTRA

Get pupils thinking more about single-use and reusable objects by playing a matching game in store. Working in pairs, ask them to find three disposable plastic items that are for sale (e.g. plastic knives and forks, cups, tablecloths, food wrap). Then ask them to find matching items that are reusable (e.g. metal cutlery, china cups, fabric tablecloths, food storage boxes). What are the reusable objects made of? How much do the different items cost? Which would they choose to buy?

Mission 3: Plastic – hero or villain? (10 minutes)

Explain to pupils that because plastic is so brilliant, the world has produced more in the past ten years than the previous 100 years combined. And most of this has been in the form of objects that are used and then immediately thrown away.

Ask pupils to turn to **Mission 3** in their **PI Club Handbook**. Explain that the biggest problem caused by plastic waste is that over 12 million tonnes end up in the oceans every year. By 2050 it's been estimated that there will be more plastic in the ocean than fish.

As a class, talk about what you can see in the photographs in their Handbook.

- What do you think the pictures show?
- What plastic objects can you see?
- How do you think they ended up in the ocean? (littering and dumping of waste)
- Why are big objects like these dangerous to seabirds and animals? (they can get tangled up in the plastic)
- What about smaller pieces of plastic? Does anyone know what happens to these when they end up in the ocean? (they are eaten by seabirds, fish and mammals)
- Why is this bad for the animals? (they often die as a result of eating plastic)
- Why is this bad for us? (we end up eating plastic)

Ask pupils to write short sentences explaining:

- why plastic is a hero (it is light, hygienic, durable, convenient, cheap, versatile and stops food waste etc.). You could ask pupils to think about what might happen if all the plastic was suddenly removed from the world.
- why plastic is a villain (we are using too much of it and, when it is thrown away, it is polluting our oceans).

Take a class vote as to whether plastic is a hero or a villain! If opinions are mixed, point out that plastic is an incredibly useful material, but plastic waste is a major problem for our planet.

As PI Club Special Agents, what can pupils do to help make a difference?

ASDA STORE VISIT EXTRA

Take pupils to the aisle with plastic bottles of drink. Working in groups, ask them to choose a section and count how many plastic bottles they can see. Who has counted the most? Can pupils estimate how many bottles they have counted in total? Then tell them that around 9.1 billion plastic bottles are thrown away in the UK every year and lots of these end up polluting our oceans. Can pupils think of alternatives to buying water in plastic bottles?

Mission 4: My personal pledge (10 minutes)

What can we do to help tackle the problem of plastic waste?

We can **throw away plastic more responsibly**, always using a litter bin and recycling as much as possible.

We can also use less plastic in the first place. Explain that Asda is already doing this by getting rid of plastic packaging, starting with naked swedes! In the past, swedes were wrapped in plastic, but tests have shown that actually they last just as well unwrapped. Now you'll see them naked on the shop shelves in Asda.

Talk with pupils about what we can all do as individuals. We can use less plastic by:

- **reducing the amount we use** (e.g. remembering to take a reusable bag when we go shopping; refusing plastic straws and disposable cups and cutlery; buying food loose rather than in plastic packaging)
- **reusing plastic objects** (e.g. refilling a plastic bottle or choosing a reusable water bottle; using old food tubs to store leftover food).

As a class, come up with as many ideas as you can and write them on the whiteboard. You could use the single-use plastic objects you brought in as prompts for pupils' ideas.

Ask pupils to identify one of these actions that they are going to take as an individual in order to start using less plastic.

Help pupils to complete the **Mission 4** pledge in their **PI Club Handbook**.

ASDA STORE VISIT EXTRA



Take the fish stickers from the teacher's pack with you on your store visit. Your Asda Community Champion will show you a poster that has an image of plastic rubbish polluting the ocean. Ask each pupil in turn to take a sticker and stick a fish over a piece of rubbish, saying their personal pledge to reduce the amount of plastic waste in the world. Why not give them an extra sticker to add to the personal pledge in their **PI Club Handbook**?

Mission 5: The recycling mystery (15 minutes)

Explain to pupils that one of the most important things we can all do to help solve the plastic waste problem is to recycle as much as possible.

To remind them of key facts about recycling, play a quick game of '**Recycling: True or False**'. Tell pupils that all the answers were in the **PI Club assembly**. How carefully were they listening?

Read out the following statements one at a time. If pupils think the statement is true, they should stand up. If they don't think it's true, they should remain seated.

- **45% of households in the UK recycle each week. (T)**
- **The recycling symbol is a green star. (F - it's a green circular arrow)**
- **More than half the waste thrown away each year could be recycled. (T)**
- **We're running out of space to dump rubbish and recycling saves space. (T)**
- **Rubbish that is not recycled is buried in big holes in the ground called 'landslips'. (F - they're called 'landfill sites')**
- **Recycling saves natural resources like wood, oil and coal. (T)**
- **Making new products from recycled materials uses less energy than making them from new materials. (T)**
- **All of the rubbish we throw away in the UK stays in the UK. (F - sometimes it is put on ships and sent to other countries)**
- **Recycling saves energy, reducing greenhouse gases released into the air and helping to prevent climate change. (T)**

Where there's confusion, take the opportunity to make sure pupils are clear about the facts. If it would be helpful, you could repeat the section of the **Plastic Investigators presentation** that explains recycling (slides 9 to 15).

Ask pupils to turn to **Mission 5** in their **PI Club Handbook**. Help them to fill in the gaps in the three sentences based on what they learnt in the true or false quiz. Recycling saves:

1. Space

2. Natural resources

3. Energy

Then ask pupils to look at the illustrations of the five steps in the plastic recycling process and number them in the correct order, from 1 to 5. If they get stuck, you could let them have a quick look at **slide 14** again or show them the video that shows the journey of a plastic product from use to recycling <https://nationalschoolspartnership.com/initiatives/asda>.

ASDA STORE VISIT EXTRA

Take pupils to the aisle with bathroom products (e.g. shampoos, conditioners and soaps). Explain to them that only 40% of plastic bottles from the bathroom are recycled, compared to 70% of bottles from the kitchen. What bottles can they see that could be recycled? Do they know whether their family recycles these? What could they do to make sure that more plastic waste from the bathroom at home is recycled?

Mission 6: Recycling plastic in our area (20 minutes)

Explain that plastic is one of the least recycled materials. Why do pupils think this might be?

Explain that lots of people are confused about whether plastic can be recycled, and don't do it as a result.

In this mission, pupils are going to find out some facts about plastic recycling in your area, for example:

- whether your local council picks up plastic for recycling
- what types of plastic bottles and packaging can be left out for recycling
- how to prepare plastic for recycling (e.g. rinse it, squash it, put the lid back on, leave the lid off)
- the nearest locations for taking plastic bottles to be recycled
- the nearest locations for taking plastic packaging to be recycled

You could either carry out research as a whole class, or ask pupils to work in small groups. They will need computers and internet access (or pre-printed information).

Based on their research, ask pupils to fill in the five most important facts about plastic recycling in your area in their **PI Club Handbook**.

As well as your local authority's website, you might find the following sites helpful for this activity:



www.recyclenow.com/local-recycling



www.recycleforwales.org.uk/local-recycling



www.recycleforscotland.com/recycling-locator



www.recyclenow.com/local-recycling

Mission 7: The competition (5 minutes)

Explain to pupils that now they understand how important plastic recycling is, it's time to **spread the word!**

To help save the planet from plastic waste, we need as many people as possible to know about the issue and take action. Talk through the information on the slide and hand out the **competition leaflet**. Go through the leaflet, answering questions. Make sure pupils know when they need to return their entry – we would suggest at least a week before the end of term, as the submission deadline is **24th July 2019**.

Explain to your pupils that they could win amazing prizes for themselves and for their whole school! The details of the prizes can be found on the competition leaflet and on the National Schools Partnership website <https://nationalschoolspartnership.com/initiatives/asda>

See National Schools Partnership website for terms and conditions.

Plenary (5 minutes)

- Ask pupils to turn back to the **Mission Diary** at the start of their **PI Club Handbook**. Have they ticked off all the missions?
- Ask a pupil to read out the outcome for **Mission 1**. Who agrees they have achieved this? Do the same for each mission, to emphasise to pupils how much they have learnt about plastic, waste and recycling.
- Congratulate pupils on being brilliant **PI Club Special Agents!**
- Give each pupil a copy of the letter to parents about the competition and tell them they can take their **PI Club Handbooks** home as inspiration for their competition entry.

Extension/homework ideas

- Why not create a PI Club corner in the classroom? Pupils could organise a display of plastic objects alongside information from their Handbooks and copies of personal pledges to use less plastic.
- Hold a debate about ‘Who is responsible for solving the plastic waste problem?’
- Ask pupils to research different types of plastic commonly used for plastic bottles and packaging. What is the symbol for each? Draw up a chart showing the different materials and symbols. You could organise a scavenger hunt to see how many objects made of each type of plastic pupils can find.
- Collect and bring in plastic and use in art projects or find creative ways to reuse in the classroom/school
- Create plastic recycling stations at school and posters to let others know about recycling plastic

Curriculum links

England

Science

Living things and their habitats (Year 4)

- Recognise that environments can change and that this can sometimes pose dangers to living things

States of matter (Year 4)

- Compare and group materials together

Properties and changes of materials (Year 5)

- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity and response to magnets

Citizenship

- Begin to understand that their own choices and behaviour can affect local, national or global issues

Preparing to play an active role as citizens

- Research, discuss and debate topical issues, problems and events
- Learn that there are different kinds of responsibilities, rights and duties at home, at school and in the community
- Learn that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment

PSHE

KS2: Living in the Wider World

- L1. to research, discuss and debate topical issues, problems and events that are of concern to them and offer their recommendations to appropriate people
- L7. that they have different kinds of responsibilities, rights and duties at home, at school, in the community and towards the environment; to continue to develop the skills to exercise these responsibilities
- L9. what being part of a community means, and about the varied institutions that support communities locally and nationally

Scotland

Social studies

People, place and environment

- I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally-responsible way

Technologies

Technological developments in society and business

- I can analyse how lifestyles can impact on the environment and Earth's resources and can make suggestions about how to live in a more sustainable way
- I can make suggestions as to how individuals and organisations may use technologies to support sustainability and reduce the impact on our environment
- I can recognise basic properties and uses for a variety of materials and can discuss which ones are most suitable for a given task

Science

Materials

- Having explored the substances that make up Earth's surface, I can compare some of their characteristics and uses

Wales

Personal and social education

Active citizenship

- Become active citizens in their communities, both local and global

Sustainable development and global citizenship

- Develop the skills, knowledge, attitudes and values to participate in individual and collective decision-making, both locally and globally, that will improve the quality of life now without damaging the planet for the future
- Learn about the links between society, economy and the environment
- Learn about the local and global implications of human activities and the actions that individuals and organisations can take in response to local and global issues

Science

The sustainable Earth

- Compare the features and properties of some natural and made materials
- Study the properties of materials relating to their uses
- How some materials are formed or produced
- Consider what waste is and what happens to local waste that can be recycled and that which cannot be recycled

Northern Ireland

The world around us

Interdependence

- The effect of people on the natural and built environment over time.

Change over time

- The effects of positive and negative changes globally and how we contribute to some of these changes.

Personal development and mutual understanding

Mutual understanding in the local and wider community

- Playing an active and meaningful part in the life of the community and being concerned about the wider environment.

Submitting entries to the competition

Collect in your pupils' poster designs and send in their entries:

By post, to:

We are Futures
Plastic Investigators
One Paris Garden
London
SE1 8ND

Make
sure your
entries reach
us by the
24th July
2019

or by email (scanned copies), to:

competitions@nationalschoolspartnership.com

Where can I go for more information?

The following links provide useful ideas and information that you might find helpful to extend your own understanding and pupils' learning.

General information about plastic and recycling

British Plastics Federation – <http://www.bpf.co.uk/Sustainability/sustainability-of-plastics.aspx>

Recycle-more – <https://www.recycle-more.co.uk>

Recycle Now – <https://www.recyclenow.com/recycling-knowledge/how-is-it-recycled/plastics>

Information about what can be recycled locally and how

 <https://www.recyclenow.com>

 <https://www.recycleforscotland.com>

 <https://www.recycleforwales.org.uk>

 <https://www.recyclenow.com/ni>

Details of your local recycling officer

 <https://www.letsrecycle.com/councils/recycling-officers/england-recycling-officers/>

 <https://www.letsrecycle.com/councils/recycling-officers/scotland-recycling-officers/>

 <https://www.letsrecycle.com/councils/recycling-officers/wales-recycling-officers/>

 <https://www.letsrecycle.com/councils/recycling-officers/n-ireland-recycling-officers/>

Refill app

Tells you which businesses are happy to let people use their water fountains or taps for free with no purchase, so that you can refill your reusable drinks bottle!

<https://refill.org.uk>