







STUDENT WORKBOOK CARIBBEAN





WELCOME TO PLASTIC CLEVER SCHOOLS

We're so happy you're here because we need your help to make every school Plastic Clever. Plastic pollution is a big problem - you'll find out more about that later - but we know a way you, your school, and all your friends and family can help.

Why is it important to be plastic clever?

Plastic pollution is a local, regional, and global issue - chances are, it's one you've seen yourself already.

Every year, humans produce a huge 220 million tons of plastic waste! Of this plastic, 40% goes to pollute our environment and just 15% is recycled. According to the World Bank, every year over 320,000 tons of plastic waste remains uncollected in the Caribbean.

Plus, it's getting everywhere. Plastic has now been found at the deepest and highest places on Earth, in tap water, and even in our blood.

It's not too late to fix this problem, but we need everyone to play their part-including you. This workbook will help you lead your school to become Plastic Clever.



Amy & Ella's top tip

Don't be afraid to speak up about what you care about! If you think there is a problem in the world that you're passionate about tackling, then don't underestimate the power of your voice! It's better to make the change you want to see happen rather than wait for someone else to!



Look for this sticker to find out more about the plastic problem and how you can help.

CONGRATULATIONS

YOU'RE A PLASTIC **CLEVER SCHOOL!**



INSPIRE

Learn about plastic pollution and spread the word with a **Plastic Clever Schools** assembly

LEVEL ONE

Organise a community clean up

Share why you want to become plastic clever

LEVEL TWO

Audit plastic waste in your school with our easy tool

Identify your problem plastics and create an action plan to tackle them (start with 2)

LEVEL THREE ACT

Turn plans into action with a school wide campaian

Capture photos and videos of your journey and the changes you've made to reduce plastic waste

Make a video, poster or display to showcase your success

BEFORE YOU START

Inspire a teacher or other adult in your school to help you register your school online.

Rally a team to help you become a Plastic Clever School.



Want to earn a plastic Clever **Schools Award?**

Each stage has an evidence checklist- ask a teacher to help you upload this evidence on plasticcleverschools.co.uk

LEVEL ONE

INSPIRE



If you want to help solve the plastic problem, you need to know more about it. In this first stage of your journey, you'll be learning why plastic is a problem in your local, regional, and global environment. Get the whole school involved by sharing what you're learning and including them in inspiring events.

EVIDENCE CHECKLIST

- Host an assembly
- Do a community clean-up
- Make a video, poster or display to tell others what you want to achieve and why.



Hayden's top tip

Get lots of people involved by planning a regular community clean-up. This can really improve the atmosphere of the school by bringing people together to do something good for for the planet.

ASSEMBLY TIME

Kick things off with an assembly.

This is a great way to let the whole school know about your plans to become a Plastic Clever School. It will also help you introduce everyone to the beauty of our incredible oceans, so they feel inspired to help protect it from plastic pollution.

Need help?

We've made a presentation that you (or a teacher) can use to deliver an inspiring assembly. Make it fun by getting some friends involved too!



Click here for the assembly



DO A COMMUNITY **CLEAN UP**

A community clean up is a brilliant way to find out more about problem plastics in your local community, like the litter hotspots, types of plastic and even where they come from. It's also a fun way to get lots of people involved in your challenge to become Plastic Clever



Click here for community clean up sheet

Amy & Ella's guide to community clean ups

We've done our fair share of community clean ups in the past They're a great way to have an immediate impact on

Schools

3 MAKE A POSTER, VIDEO OR DISPLAY

Share why you want to be a Plastic Clever School.

You can make a video, a poster or a display. Share it with your school and with us-this is your final piece of evidence to complete the Inspire stage. Hurray!

Here are some questions to help you:

- What sparked the idea to sign up?
- Is plastic pollution a real problem in your local community?
- · How would your school, local environment and planet improve if everyone helped become Plastic Clever?



If you're making a display, take a look at page 24 for our guide to making a Plastic Clever School Wall.



Different types of plastic

The Barbados Sanitation **Services Authority has** provided every household in Barbados with a blue bin for items like plastics to be recycled.





Polyethylene **Terephthalate**

Water bottles







Milk bottles and shampoo bottles







Polyvinyl Chloride

Cleaning products and shower curtains







LDPE Low-density polyethylene

Bread bags and plastic films







Polypropylene

Yoghurt cups, straws and hangers





Polystyrene

Takeaway, hard packaging and toys





Polycarbonate

Baby bottles, nylon and CD's



Easy to recycle difficult to recycle

Can't be recycled



Try this!

Want to know more about the science Watch my video about polymerisation and how to test the process by making your own slime!

Click here to watch my video



30% of plastics get

rivers and waterways.

recycled? The rest ends up

in landfill or in our streams,



The life cycle of a plastic bottle





their water home in a

plastic bag.



behind different types of plastic?



Everyone's talking about...

Climate change.

What is Climate Change?

Climate change describes a change in average weather conditions over a long period of time. Many of these changes are the result of an increase in the average alobal temperature, known as alobal warming. Here's a very quick explanation of what this all means...Global warming is a natural process where greenhouse gases (carbon dioxide, methane, nitrous oxide, and water vapour) capture some of the earth's heat and warm the earth. This process is what makes our planet so perfect for life to survive. However, human behaviour is making it warm up. Think of the greenhouse gases in our atmosphere as a nice warm blanket keeping the earth just the right temperature. Now imagine what will happen if we keep adding more blankets...Well, that's what's happening to our planet. Human activities - like burning fossil fuels to power factories, cars and buses – are adding greenhouse gases to the atmosphere, preventing heat from escaping and warming the earth. This is already leading to global problems such as an increase in extreme weather (like tropical storms, hurricanes and droughts), melting ice caps, rising sea levels and animal extinctions.

Millions of young people have taken part in school climate strikes to protest the lack of action on the climate crisis by world leaders. So, what is Climate Change and what does it have to do with plastic?

Plastics and the climate crisis

The lifecycle of a plastic bottle will leave a lasting impact on the environment, including our climate, because when we throw away a single-use drinks bottle, that's not all we're wasting.

Challenge

Plastic isn't only a problem at the start of its life. Take another look at the plastic lifecycle on p. 6 of the workbook. How else is plastic contributing to climate change? Could anything be done to reduce this impact?

one waterbottle =



X3 III

Three litres of water are used to make a one litre water bottle

100g

100g of carbon dioxide, a greenhouse gas, is released into the atmosphere

250ml

250g of oil is mined from beneath the ground to produce one bottle.

Oil is a fossil fuel & can not be replaced once it is used

Want to know more?
Check out the KAP website

LEVEL TWO

INVESTIGATE

Congratulations! You've inspired your school to become Plastic Clever. Welcome to level two – Investigate! As a Plastic Clever School, you need to take steps to cut down on single use plastic waste and help keep our ocean and natural world healthy. It's time to start looking at the problem plastics in your school.



Complete the Plastic Clever Schools audit

Create an action plan to tackle two plastic items



Inaaya's top tip

The more people on your team the easier it'll be to make a difference. Get creative to encourage your whole school to reduce single use plastic and protect our amazing ocean.

1 PLASTIC CLEVER SCHOOLS AUDIT

Download our audit tool and answer the questions. This will help you understand more about plastic waste in your school, so you can know which platic items you need to tackle.

Gathering data is a really important skill that scientists and explorers use to make new discoveries and solve problems.



Click here to start your audit





2 ACTION PLAN

Once you've discovered the problem plastics in your school, it's time to plan how you can tackle them. An action plan is a simple way to get really clear on your next steps.

Your plan must tackle at least TWO problem plastics.



Here are some useful questions and examples to help you get started

Plastic Clever School action plan

plan



What can you do to reduce it?

E.g. Get everyone to use a reusable bottle

HAVE YOU HEARD OF THE 6 RS?

Recycling is an import part of dealing with plastic waste, but it's not the best option. Try looking at how you can use the first 3 Rs - rethink, refuse and reduce - as a starting point for your action plan.



Click here to learn more about the 6 Rs





rethink







reduce

reuse





recycle

repair

What help will you need?
E.g. Help to spread the message to and parents. Also, we'll need to see

How will you know you've been successful?

Everyone has a reusable bottle and the school has stopped ordering the cure.



How does plastic, end up in the ocean?

Where does all the plastic come from? And how does it end up in the sea? Did you know that approximately 80% of plastic flows from land-based sources? The other 20% is plastic littered at sea, from fishing and shipping.

Even if you live in one of the central parishes, like St. George or St. Thomas, the plastic you throw away could make its way into the sea.



How does plastic travel



Wind blows plastic and plastic litter into the environment.



Rain sweeps plastic into the waste and stormwater system or directly into rivers and streams.



People might **dump plastic waste** near to or directly into rivers and streams.



Waste and stormwater systems can **overflow** during storms and high tides.

Plastic pollution

What do you picture when you think about plastic pollution? Close your eyes and take a moment to think about it.

Whatever you imagined, we're sure it wasn't pretty. Plastic pollution is a big deal and causes a lot of problems in our local environment and across the planet - especially in our ocean.

Now close your eyes and imagine what this environment could look like if it was free from plastic waste – this is the difference you can make!

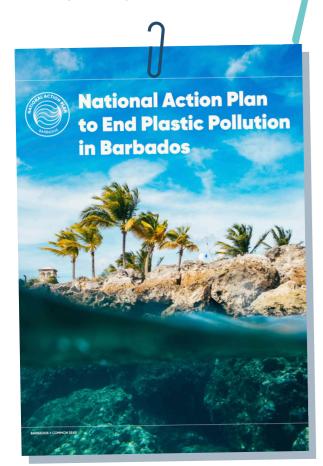
Click here to learn some surprising facts about plastic...





What is a National Action Plan? . ~

A National Action Plan (NAP) is a plan to tackle a particular problem through action across an entire country or region. It's a bit like a larger scale version of the plans you will make to tackle plastic waste at school.



Do we need National Action Plans to tackle plastic pollution?

Yes.

Solving the plastic problem requires big changes to the way we make, use and dispose of plastic.

We actually already have many of the solutions needed to significantly reduce plastic pollution, but governments, businesses and citizens will need to work together to achieve this.

Common Seas Government Partnerships Programme

Common Seas Provide governments with tools and expert advice to learn more about the plastic problem in their nation, and to find actions they can take to solve it. This could include many things, from new policies that limit the amount of new plastic being made, to installing more refill points for filling up water bottles.







Case Study: Barbados

An estimated I5,000 tonnes of plastic waste was created in Barbados in 2021 - that is the equivalent weight of about I5 cargo ships!

A lot of this waste was from single-use items including plastic bags, beverage bottles and other plastic packaging.

THE NATIONAL ACTION PLAN HAS 5 STRATEGIES TO:





Reduce other single-use packaging, like food service items

Encourage companies to design more sustainable and recyclable products

Improve waste management so that less litter and waste ends up in the environement.

Provide education to ensure everyone can be part of the solution to end plastic pollution, now and in the future.





These strategies have the potential to reduce Barbados' plastic pollution by an impressive

73% over 10 years.



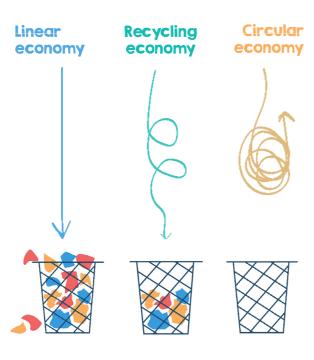
Circular economy

A new economy

Humans produce A LOT of waste. This is because we often design things to be used once and then thrown away. This is known as the linear economy.

In a recycling economy, products at the end of their life (when we're finished using them) are collected and their materials recycled to make new things.

This prevents them being wasted, saving raw materials and energy. So is this the answer to a more sustainable approach? Unfortunately not. Especially when we're talking about plastic.



A few plastic recycling facts:

- Not all plastics can be recycled.
 Although the plastic polymers can usually (technically) be recycled, the way that plastic products are designed or used often hinders the recyclability.
- Recycling plastic is actually more like 'downcycling' as the quality of the material is reduced in the process.
- Although we preserve the energy embodied in the materials, the process to collect and recover plastics in recycling is also energy intensive.

- Today, our world already creates 220 million tons of plastic waste every year – only 15% is recycled.
- Recycling instructions are different in each area, which is why mistakes are made in cleaning and sorting resulting in contamination that makes plastics difficult to recycle.

Feeling confused about plastics recycling in your own area?

Click here to find out more about recycling options for plastics in Barbados.

What about a circular economy?

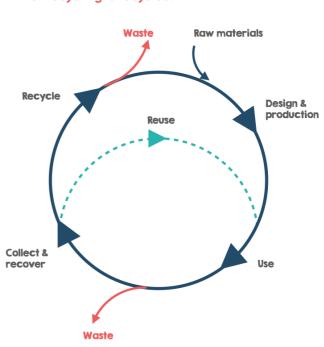
In a circular economy, much less is wasted because everything has value. Products are designed and made to last much longer and to be easily re-used, repaired and recycled.

Did you know?

Reusable products also require materials, energy and water consumption to produce. That's why reuse is key- the more you reuse them, the greater the impact you can have to reduce waste and your carbon footprint.

Sadly not all that is collected for recycling is recycled.

- 3. When we've finished with a product, we need to make sure that it can stay in the cycle. There are lots of different scenarios for this, here are some examples:
- Collect, sort and separate for recycling.
- Collect, clean and offer to the next person.
- Keep at home, remember to take to the store and use again.
- Collect, upgrade/repair and use for the same thing again.



In a circular economy we are careful to keep waste to a minimum.

- 1. Products need to be designed and produced in a way that enables us to use less energy, less materials, and create less waste. The goal of the circular economy is to 'reduce'.
- 2. Materials and products need to be used in the cycle as long as possible. This means products need to last longer and be reusable, repairable or easily recycled. Do you notice how 'reuse' creates a smaller cycle? This is the best way to reduce our energy consumption and waste.

17

Can you think of any examples of the circular economy at school?

E.g. A drinking water fountain that can be used to fill your water bottle. If yes, how much plastic waste is it preventing each day? Could this approach be used elsewhere in school to reduce plastic waste further?



You're onto the final stage of your Plastic Clever journey - fantastic! This is the most exciting part of the process-leading campaigns to encourage your whole school to wave goodbye to single-use plastics.



Run a campaign in school to reduce at least two problem plastics

Share photo evidence of the plastics reduced

Create a celebration presentation

Spread the word!

Why not ask your teacher to help you share your celebration on the schools website, or with a local newspaper to really capture the attention of your whole community and celebrate your amazing work!

RUN YOUR CAMPAIGN

It's time to run your campaign in school to reduce the problem plastics identified in your audit.

Take a look at our guide to building effective campaigns to help turn your action plans into action!



Download the guide here

Keep a record of your awesome campaign activities by taking pictures. These pictures are essential evidence for this part of the award.

You can find more ideas about activities for your campaigns on page 26



Building effective campaigns



Remember to take pictures! We want to see the great plastic changes you've made. For example, if you've swapped single use cups for reusable bottles in the classroom, take a snap!

top tip

It can get difficult when trying to be plastic clever but persevere and remember all the good you're doing! Don't be scared to help educate people around you who want to learn. Keep going!

SHARE YOUR SUCCESS WITH **A CELEBRATION**

Celebrate all your hard work to reduce **single use plastic.** Get creative- make a video, photo montage, PPT presentation or poster all about your schools success.

Things to include:

- Which plastic items have you reduced?
- How do you know your campaigns have been a success?
- What are you most proud of?
- What are you going to do next?



How to make a difference

When you feel passionately about something, changing your own individual behaviour is a great place to start. But what if you want to create a change bigger than your own action?

You need to use something called advocacy. Advocacy means trying to inform and influence the people around you to feel passionately too.

Here are some ideas to help you become a great advocate -

U

Ripples of change

Your actions can become ripples that inspire others.



Who do you want to reach? What changes do you want to see?

Learn

Research as much as you can so that you understand the issue and can speak confidently about it. Look online, speak to teachers, parents and people in your community.

Connect

Remember that there are lots of amazing people in the Caribbean region and around the world working on this issue. Find ways to connect with other activists, organisations and community groups

Find your superpower

Think about the skills that you have that you can bring to this cause. Everyone has something they can use to help.

Start small

Look for things you can do at home, in your school and in your local community first.

Fight for not against

Rather than focusing on all the bad things that plastic pollution does, why not focus on why our ocean is so important and how amazing all the marine creatures are.

Speak up

Don't be afraid to use your voice and find ways to share your message.

Practice what you preach

Try and be a Plastic Clever role model so others can learn from you.



Inspiration & innovation

Imagine if we all looked at the issue of plastic pollution as an exciting opportunity to make change. There are some incredible projects happening around the world that can help inspire us all. Here are some of our favourites...



Clean Up Barbados

This annual, island-wide event is volunteer-driven and keeps Barbados beautiful while highlighting the harmful impacts that littering, illegal dumping, and plastic pollution have on Barbados' ecosystems and residents' wellbeing. Every year, thousands of volunteers clean rubbish from Barbados' beautiful landscapes, supported by donations of bags, gloves, tools, and heavy equipment from many organisations and individuals all over Barbados.



The Kingston Harbour Cleanup Project

The tremendous increase in solid waste pollution of the Kingston Harbour threatens to cause irreversible damage to the biodiversity, commercial activity and aesthetics of the entire Harbour ecosystem. The dominance of plastics and styrofoam in the environment negatively impacts marine animals, their habitats, and even humans. In February 2022, The Ocean Cleanup in collaboration with The GraceKennedy Foundation (GKF), and Clean Harbours Jamaica (CHJ) Limited, implemented a pilot project to prevent solid waste from flowing into Kingston Harbour. Waste-trapping technology will be installed at the mouths of 11 gullies that feed into the Harbour. This effort is expected to eventually extract an estimated 900 metric tons of waste a year



Flying Tree Environmental Management

is taking on the challenge of Trinidad and Tobago's plastic waste problem with the launch of the Kernaham Cascadoux Plastics Upcycling and Learning Centre. The facility has been able to upcycle over 90 tonnes of plastic waste, which have been upcycled into furniture, pavers and other items, and placed for use within the community.



The Dominican Foundation for Marine Studies

is an organization based in the Dominican Republic, and dedicated to promoting the sustainable use of coastal marine ecosystems and resources through research, education, and supporting the development of conservation projects to protect marine life against the effects of plastic pollution

CONGRATULATIONS!

Wow! How does it feel to be waving goodbye to single use plastics?

If you've ticked off everything on your checklists, then you are really really close to becoming an official Plastic Clever School.













Welcome to the Plastic Clever Schools community! We're so happy to have you on board.

Amy & Ella at Kids Against Plastic

Kids Against Plastic was founded by teenagers Amy and Ella Meek. When they found out about the harm caused by plastic pollution they needed to do something about it. They created KAP - a charity by kids, for kids - to inspire and motivate others to take action too.



To stay plastic clever, you'll need to keep on learning, doing and sharing to help your whole school and your community wave goodbye to single use plastic for good!

The work you have done to get this far is amazing and we are so excited to see where you go next!



Massive congratulations!

Jo & Sarah at Common Seas

Common Seas was founded by Ocean Explorer Jo Royle. We're a team of sea champions on a mission to quickly and significantly reduce the amount of plastic produced and stop it polluting our rivers and seas. We created Common Seas Education to empower the next generation of ocean superheroes to join our crew!



SCHOOL BECOME PLASTIC CLEVER?

Take a look at these ideas to help you keep going and get everyone involved.



Design your **Plastic Clever** Schools wall •

Becoming a Plastic Clever School is much easier if everyone at your school knows about it.

One way to do that is to create a Plastic Clever School wall. Think of it like a giant display that everyone can see and that can be updated as you progress along your journey.



Your step by step guide to creating your Plastic Clever School wall

- 1. Ask your teachers if they can help identify a good spot for your display. Make sure its somewhere central in the school and big enough for you to fill with lots of pictures and information.
- 2. Start designing your wall on a piece of paper, so vou can figure out what you'd like to display. You'll want to include the three different levels. a checklist to tick off. a space for photos, drawings or posters, and somewhere to create a map of your school.
- 3. Remember that you will 5. Make sure you take keep adding to your wall as vou work through the three levels, so don't fill it up too soon!
- 4. Let everyone know what they can create for the wall - drawings, posters, sticky notes with ideas for your school.
- photos and send them to us so we can see your amazing Plastic Clever School wall and share it on our website.



Use social media for good

Social media can be a really powerful tool when it comes to taking care of our planet.

We can reach more people and engage in good conversations about causes we care about by posting content on social media channels. Throughout your journey we are going to encourage you to share what you are doing and try to engage even more people.

Here are our top tips -

- Fact check first Be sure to check & reference your sources when sharing anything on social media.
- Be creative Make a video or create a piece of art that can help amplify your message.
- Raise voices Seek out people who are playing active roles in local movements. Make sure you make everyone feel welcome.
- Follow your schools guidelines Make sure you abide by your schools social media policy.
- Be positive Whilst we shouldn't be afraid to shine a light on the plastic problem, upbeat, engaging and supportive messages will get you further than trying to shame people
- Remember to tag If you want to draw attention to your post, for example from a specific person or business, tag them in your post to make sure they see it!

Most social media channels are for users aged 13+. If you are under 13, it could be possible to share your messages safely through your schools social media channels instead. Speak to a teacher to find out who can help you with this.





Take action!

Ready to wave goodbye to plastic waste? Here are a few ideas to get you started.

- · Start a newsletter
- · Give a presentation to your school leaders
- · Get another local school involved!
- · Send a tweet! Ask a teacher or an adult at home to help with this.
- · Plan an event
- · Create a blog
- · Create posters to put up in plastic hotspots
- · Need money to make some of your ideas possible? Come up with a fun way to fundraise!



Remember: these aren't required evidence pieces to complete your Plastic Clever award - but, they're great way to spread even more awareness of plastic pollution and your efforts to tackle it!





One way to advocate is with a persuasive letter - Click here for an easy guide to get started.



Celebrate what you're doing with your local community! It's a great way to show off your good work, and highlight plastic pollution in a fun way: such as, through an ocean-themed movie night, or a coffee morning for parents and community members.

Build your Plastic Clever Schools map.

Creating a map of your school and your local community is a really good way to reflect on your journey to become Plastic Clever, capture some key information about problem plastics and highlight some of the solutions now in place. It's also an excellent way to begin thinking about what you want to do next.

- 1. Start by drawing a birds eye view of your school. Make sure you include all the outside spaces too, like playgrounds, sports fields, car parks etc. Do it on a big piece of paper so you have lots of room to add information.
- 2. Add in your recycling/garbage bins, water refill stations or drinking water taps and any Plastic Clever projects (e.g. maybe you have community clean up equipment that people can use stored somewhere).
- 3. Great now add your plastic hotspots to the map the places where you most often see plastic pollution. You might also want to include any popular local shops or places to eat outside of school, as these places can also often become hotspots.
- 4. Next up you can add some important people to the map. This should be the people who make decisions about your waste management, the person who runs your canteen, plus anyone else who plays an important role in your Plastic Clever School journey (e.g. your Environmental Club or student council if you have one).
- 5. Once you've created the map of your school, see how far you can extend it. Add in local recycling centres, plastic hotspots, water refill stations, parks and green spaces etc. Include ideas about local leaders and organisations who could help you take things further. Keep building - The idea of your Plastic Clever Schools map is for it to grow:)
- 6. Don't forget to display your map on your Plastic Clever Schools wall!









This resource has been assessed by Royal Meteorological Society against their *Quality Control Framework for Climate Education*, developed as part of the National Climate Education Action Plan.

