

Subject links:
PSHE

Ages 11-16

Curriculum links:

Community and responsibility, policy, advocacy, persuasive writing

Ocean Literacy Principles:

6. The ocean and humans are inextricably interconnected

Learning Objectives:

- To explain why we need rules and regulations to protect the environment
- To understand how human development and activity leads to pollution in our oceans
- To explain why everyone is responsible for caring for the ocean
- To develop appropriate communication skills to influence policy and advocacy

Resources Provided:

- [PFAS introduction video](#)
- [PFAS Fact File](#)
- [Campaign letter template](#)
- [Social media template](#)

Credit: Thomas Dutour

#StopOcean Poison

Sustainable Development Goals:



Step 1

Background

Harmful chemicals are polluting the planet, wildlife and impacting our ocean. PFAS, or 'forever chemicals,' are just one group of ocean poisons. But what on earth are they and what can we do to stop them?

'Forever chemicals' have become part of modern manufacturing to the point that they're included as the default option and incorporated into our clothes, food packaging, cars and electronics, alongside the processes which produce them. These chemicals constantly build up in the environment, and they've been found in all water across the world, including rainwater and ocean spray. You can find more information in the [PFAS Fact File](#).

Step 2

Set the Scene

Start a discussion by asking what 'policy' means. A policy is a set of ideas or plans that is used as a basis for making decisions, especially in politics, economics or business (Collins Dictionary Online).

Now ask students what they think 'advocacy' means. Students may find this challenging, so they may need a few prompts to get started. In this case, advocacy is the attempt by individuals (students/teachers) or groups (like MCS) to influence decisions within the political world. The aim of this lesson is to collectively give the ocean a voice (advocacy) to bring about a policy change at a UK government level.

To set the scene, introduce the threats posed by 'forever chemicals' by watching our [PFAS introduction video](#).

Resources required: [PFAS introduction video](#)

Step 3

Activities

Activity 1: 10 minutes – PFAS Fact File

Read through the [fact file](#) highlighting key points from each section. This can be done as an individual, group or class activity. Some students may prefer to underline different points with colours to help them to categorise evidence.

Activity 2: 20–30 minutes – Raising awareness

Students can work individually, in pairs, groups or as a class to collate information in the [fact file](#) and write a letter to their local politician or media outlet, like a newspaper or radio station, to raise awareness of the issue. Can you get your letter published to help spread the word? Use our [template](#) to get started, and use [writetothem.com](#) or [theyworkforyou.com](#) to find your local representative and their contact details.

Resources required: [PFAS Fact File](#), [PFAS Campaign Letter template](#), [writetothem.com](#), [theyworkforyou.com](#)

Step 4

Extend

Does your school use products that contain PFAS? If so, what and where? Are there suitable alternatives? Could your school write this into their procurement policies? Have a group or class discussion about how your school could start to work towards this.

Resources needed: [Introductory video](#), [PFAS Fact File](#)

Step 5

Follow up

This topic is overwhelming, and in most items, PFAS aren't labelled so you don't know where they are. Wanting to throw out every item in your home containing PFAS might seem like the next step – but don't! It's not the answer.

Solving this chemical crisis isn't on your students' shoulders, the responsibility ultimately lies with the UK Government. Through urgent and ambitious action, legislation can and will limit and regulate the use of chemicals to ultimately protect people and planet. Therefore, we're calling for an immediate ban on all PFAS from all non-essential uses.

Take action and add your voice to our [#StopOceanPoison petition](#), or email your local politician to support the campaign by pushing for action on chemical pollution at government level.

To learn more about other problems the ocean is facing, check out our [Threats to the ocean](#) lesson plan.

If your students are feeling disheartened or anxious about the marine pollution problem, take a look at our [Eco-Anxiety resources](#).

PFAS Fact File



What are PFAS?

Harmful chemicals are polluting the planet, wildlife and people. PFAS or 'forever chemicals' are just one group of ocean poisons. But what are they and what can we do to stop them?

PFAS – the 'S' stands for 'substances' – are a group of thousands of chemicals that have the following factors in common:

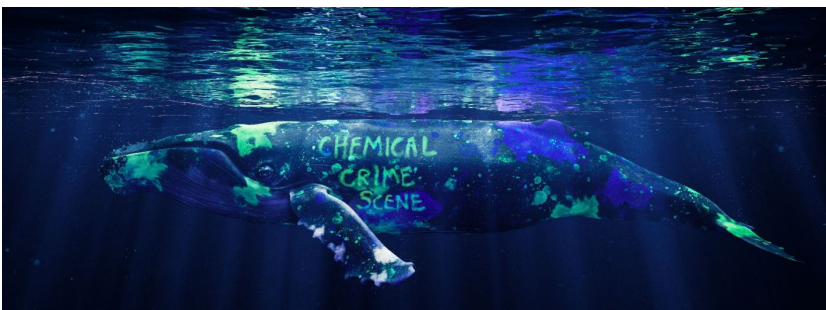
- Made up of a Carbon-Carbon backbone
- Strong, persistent Carbon-Fluorine bonds
- They don't react with air, water or grease, are flame retardant, and can withstand high temperatures
- Water soluble

'Forever chemicals' have become part of modern manufacturing to the point that they're included as the default option and incorporated into our clothes, food packaging, cars and electronics, alongside the processes which produce them.



The problem

Unfortunately, these chemicals are used in so many different products around the world that they're ending up in the environment, and because they're so resistant to water, grease, heat and chemicals, they aren't breaking down naturally.



Credit: Marine Conservation Society

Definitions:

(in relation to PFAS)

PFAS

per-fluoroalkyl and poly-fluoroalkyl substances, better known as 'forever chemicals,' are a group of thousands of individual, but similar, chemicals. They're used in countless products and manufacturing processes.

These chemicals are **persistent**. They have staying power, meaning that they don't disappear – ever. Instead, they build up over time.

As they're water soluble, they're **mobile**. They're easily transferred through the environment, within food chains and through animals nurturing their young.

Forever chemicals have been found in **all water** across the world, including rainwater and ocean spray

PFAS Fact File



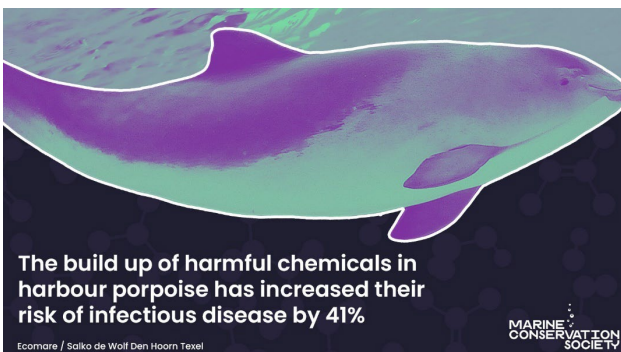
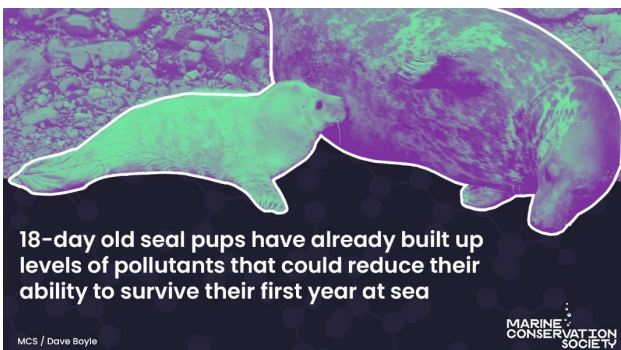
How do PFAS enter the ocean?

'Forever chemicals' are used in abundance in industry and manufacturing. Therefore, any waste or excessive runoff from these industries can enter our waterways and start the journey towards the ocean.

At present, our water treatment does not remove PFAS from wastewater or sewage treatment. It's currently impossible to remove them from the environment, and they've been found everywhere from the North to South Pole, from dolphins to seals and seabirds.



Impacts on marine wildlife



Research has proven links between harmful chemicals and the health of animals, including harm to animals' nervous systems, immunity and ability to reproduce, alongside reducing their resilience to other stressors such as climate change and disease.

This is just the tip of the iceberg, with more studies on the long-term effects of chemical pollution published regularly. Research is showing the frightening real-world consequences of inaction on chemical pollution on our blue planet.

PFAS Fact File



What are PFAS found in?

The question should be, what *aren't* PFAS found in?

PFAS are present in the products we're using every single day, hour, and minute. Harmful chemicals are used in everyday products, with the consequences allowed to go unchecked.

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|---|---|--|---|
| Non-stick cookware  | Food packaging  | Water-resistant  | Cosmetics  |
| Cleaning products  | Electronics  | Recreation equipment  | Textiles & upholstery  |
| Paper & packaging  | Paints, inks, & varnishes  | Sealants & adhesives  | Greases & lubricants  |
| Fire fighting foam  | Pesticides  | Stain-resistant  | Industrial production  |

Credit: Marine Conservation Society

PFAS Fact File

Take action

This topic is overwhelming, but solving this chemical crisis isn't on your shoulders – the responsibility ultimately lies with the UK Government.

In most items, PFAS aren't labelled so you have no idea where they are. Through urgent and ambitious action, legislation can and will limit and regulate the use of chemicals to ultimately protect people and planet.



We must act now

The UK Government is currently allowing the use of these harmful chemicals. This must stop and we need your help to make it happen.

There are too many PFAS for individual bans to be introduced one at a time. With new chemicals being developed all the time, it would take generations to achieve, whilst PFAS continue to accumulate in the ocean and marine life.

Therefore, we're calling for an immediate ban on all PFAS from non-essential uses.

- Add your voice to our petition at mcsuk.org/stop-ocean-poison
- Email your local politician to support the campaign by pushing for action on chemical pollution at Westminster
- Share the campaign and speak to your family and friends about the ocean pollution problem

PFAS campaign letter

Name:

Write a letter to local media or your local government representative about the **#StopOceanPoison** campaign. Can you get your letter published to raise awareness of the issue in your community? Use [writetothem.com](https://www.writetothem.com) or [theyworkforyou.com](https://www.theyworkforyou.com) to find your local politician

1. **Introduce** yourself and the issue. What's the headline statement that people should know?

2. **The problem.** What are the issues with PFAS or 'forever chemicals'? How do they affect the ocean and wildlife?

3. **Take action.** What can people do to help? What's at risk if we don't act now?

Top tips: Social media campaigns

Social media is a powerful tool for sharing information. To minimise possible risks to pupils, this activity uses the social media accounts of others, like family and friends.

Top tips for success

- 1. Decide on the channels you would like to use.** Would you like to create content for Facebook, Twitter, Instagram, TikTok?
- 2. Be clear about your campaign focus.** Can you describe in one sentence what exactly you want to achieve?
- 3. Agree the key messages** you would like to communicate. Can you sum up what you want people to know in three words or phrases?
- 4. Be clear about the Call to Action and hashtag.** What do you want people to do after they have seen your messages?
- 5. Decide your creative angle.** Successful social posts engage the audience. They can be funny, sad, emotional, thought provoking, relatable, informative or a combination of these qualities. Think about the best way to connect your audience with your key messages.
- 6. Follow your school's e-safety rules.** Remember never give pupils' names when their faces are visible. Talk about e-safety with pupils.
- 7. Use your pupils' strengths.** Musicians can make songs, natural performers can act, writers can focus on words, artists can make images, technical and organised pupils can act as producers and directors.
- 8. Reach out to the school community.** Are there any members of the community who work in advertising or marketing who could work with pupils on their campaigns?



Create a striking statement or picture. Grab people's attention so they're excited to read on and learn more



Spread the message!

Write and draw your message in the square below. Think about:

- What do you want people to know?
- What can people do?
- How can you grab people's attention?

A large, empty square with a thick purple border, intended for the user to write and draw their message.

Share the message

Take a photo of your picture and ask people you know with social media to post it on their accounts.



Spread the message!

Plan your video using the storyboard below. Think about:

- What do you want people to know?
- What can people do?
- How can you grab people's attention?

Storyboard for 60-second video

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|------------------------|--|--|--|
| Picture in these boxes | | | |
| Description here | | | |
| Picture in these boxes | | | |
| Description here | | | |