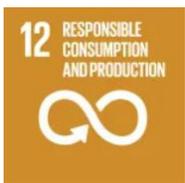


Unflushables

Sustainability Goals:



Subject links:

Science, Citizenship,
Design technology

Ages 7-11

Curriculum links:

Human impact, Topical issues, Investigation,
Environmental responsibility, Design

Ocean Literacy Principles:

6. The ocean and humans are inextricably interconnected

Learning Objectives:

- To learn about the impact of plastic pollution in the environment
- To conduct an experiment looking at materials and their properties
- To work in small groups to problem solve and share ideas for a campaign

Resources provided:

- [Wet Wipe Fact File](#)
- [How Does Waste Reach the Sea?](#)
- [Unflushables Image Reel](#)

Extra resources needed:

- Sample bottles, water, wet wipes, tissues

Step 1

Background

An average of 18 wet wipes were found for every 100m of coastline cleaned and surveyed during the Great British Beach Clean 2020. This made them the third most common litter item found on UK beaches in 2020. They shouldn't be flushed, these have the nickname 'unflushables.' This can include wet wipes, cotton bud sticks, tampons and other sanitary items. If these end up in the ocean, they can harm marine wildlife through ingestion.

More information can be found in our [Wet Wipe Fact File](#).

To give an overview of how litter affects marine life, take a look at the lesson, [How Clean Are Our Seas?](#)

Step 2

Set the Scene

15 minutes – What are Unflushables?

Today's topic isn't a glamorous one, but it's an important one. With most of our waste, whether its litter or sewage, we don't think about what happens to it after we throw it away.

Ask students if they know what happens to sewage once flushed down the toilet. Look at the [How does waste reach the sea?](#) diagram, pointing out the network of pipes, house outflows, misconnections, treatment plants and sewage outflows. Explain that sometimes these drains overflow causing flooding because the pipes become blocked by things that shouldn't be flushed.

Ask students for ideas of what should and shouldn't be flushed down the toilet. Use the [Unflushable Image Reel](#) to follow a wet wipe on its journey to the sea.

Start by showing the photo of fat bergs, and use the information on the [Wet Wipe Fact File](#) to explain the problems these can cause. Next, show the video of the sewage outflow to show sewage entering the environment. Lastly, show the images of wet wipes on beaches and beach clean data.

Step 3

Activities

Activity 1: 30 minutes – Paper vs. Wet Wipes

Explain that today you will be doing an experiment to see what happens to a wet wipe when it's flushed down a toilet.

In groups of four, ask children to compare the material and properties of wet wipes to paper. Encourage children to share their predictions of which one they think will last longer once flushed down a toilet. Which is stronger? Write a hypothesis.

Now each group should add a wet wipe (baby wipes would be best for this experiment) to one bottle of water, and toilet paper to another. Screw the lids on tightly and shake for 30 seconds, before passing to another group member and repeating so all have a turn. This works best if the bottles are about 3/4 full.

Children should closely observe their bottles, and draw illustrations of the two materials after the experiment to show results. Students should write up their methods and use their findings to draw conclusions, returning to their original hypothesis.

Activity 2: 30 minutes – Unflushables Campaign

In groups, discuss what could be done to stop people putting inappropriate items down the toilet. After 5 minutes share ideas as a class and discuss.

Show the *Unflushables* video in the [image reel](#) as an example of a public campaign aimed at raising awareness of the topic, and changing consumer behaviour to reduce litter. Show the 'Fine to Flush' image to highlight how campaigns can also focus on changing the behaviour of businesses, in this case to change labelling on wet wipes and to remove plastic from them. Show the *Bincentive* image to showcase an example of a school campaign aimed at raising awareness and changing behaviour.

Return back to small groups to continue generating ideas for a campaign in school or within the local community to raise awareness of the problem with flushing wet wipes. Each group should present their campaign ideas and vote on one campaign idea to take forward.

Step 4

Extend

30 minutes – Spreading the word

Children could run an assembly for the rest of the school to introduce their campaign. They should explain what they have learned, why there is a problem and what we can do about it.

If their chosen campaign is school focused rather than community focused, children should think of ways that they could also take their message to a wider audience. For homework, they could take their campaign idea home and explain their learning to the rest of their family and friends to help raise awareness.

Step 5

Reflect

5 minutes

Revisit the original questions – where does sewage go? What things should go down the toilet? Where should other items go? What is a fatberg? Why are plastic wet wipes in the environment bad?

Step 6

Follow up

To experience litter in the environment first-hand, you could organise a litter pick by using our [Litter in the Environment](#) lesson.

To learn more about sources of marine litter, have a look at our [From Source to Sea](#) lesson.

To learn about using art to raise awareness and campaign, have a look at our [Artivism](#) lesson.

Wet Wipe Fact File



The problem

At last year's Great British Beach Clean, an average of 18 wet wipes were found for every 100 metres of coastline cleaned and surveyed, making them the third most common litter item on UK beaches in 2020. (1) Wet wipes find their way to the beach when people flush them down the toilet.

Plastic pollution

Some wet wipes contain plastic fibres, and they therefore pose a threat to marine wildlife.

These plastic items, along with the toxic chemicals and bacteria that attach to them on their journey down the drain, might be accidentally ingested. When wet wipes eventually start to break up they become microplastics, making them more easily ingested by marine animals.



© Natasha Ewins



© Natasha Ewins

1. Marine Conservation Society 2020

Wet Wipe Fact File

Saturated sewers

In sewers, wet wipes can combine with fat, grease and oil to form giant fatbergs. However, only 5% is actual fat – 93% is wet wipes! (2) One of the biggest fatbergs found in London was longer than Tower Bridge and as heavy as 11 double-decker buses. (3) Fatbergs cost the UK a staggering £90 million per year to remove. (4)



Whitechapel fatberg sample at the Museum of London. © Seeing Sanitation



A drain pipe on the beach. © MCS/Kate Wilson

Wet wipes can reach the ocean from sewer systems in several ways:

- Fatbergs block sewage drains and can cause sewage to overflow into our streams, rivers and ocean
- Some wet wipes can get through sewage treatment works to end up on our beaches
- Drains can overflow after heavy rain when the system cannot cope with the volume of water
- Between 15,000 and 500,000 homes in the UK are thought to have drain misconnections. (5) This is when household drains are plumbed into the wrong external drain. Sewage water that should be transported to wastewater treatment plants is instead drained directly into rivers.

2 & 3. BBC 2017

4. Grease Guardian 2017

5. The Rivers Trust 2019

Wet Wipe Fact File



The solution

- Don't put oil down the sink, as this helps create fatbergs. Wait for the pan to cool, wipe the oil off with a tissue, and dispose of in the bin instead.
- We've worked with industries to remove plastics from wet wipes labelled 'flushable', and to ensure clear 'do not flush' labelling on all wet wipes unless they pass the Fine to Flush standard.
- Helping consumers understand the problem through education and raising awareness can help to reduce the number of wet wipes being flushed. Check out the video of [Wallace the wet wipe monster](#) used around the country to highlight the problem.
- Highlighting which brands don't contain plastic helps consumers make more responsible choices. Find out more in the results of our [wet wipe survey](#) of UK high street retailers.
- It can be confusing to know which wet wipes are fine to flush. If you're unsure, then pop it in the bin instead and only flush the 3 Ps (pee, poo, and paper) down the toilet.



A wet wipe in sand. © Natasha Ewins



Fine to Flush logo. © Water UK

How does our waste reach the sea?

Sewerage System

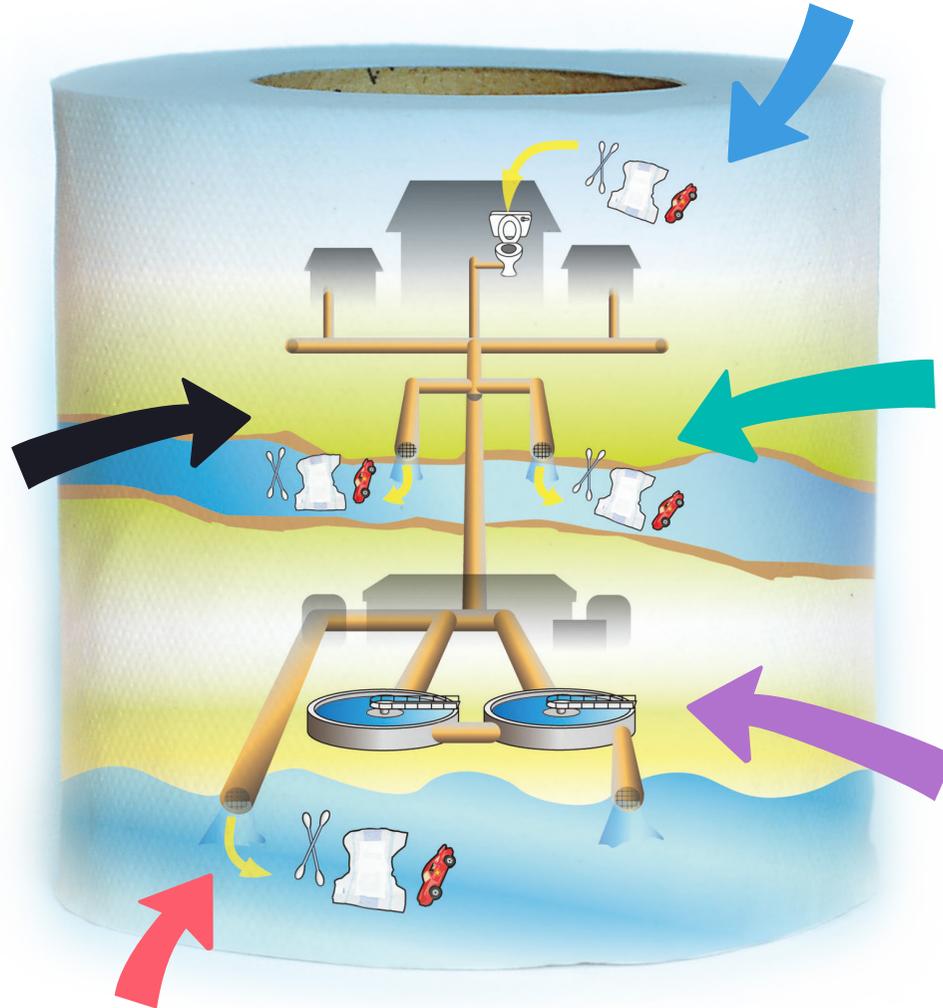
Our homes, schools and other buildings are connected to our sewerage system. This is a network of pipes designed to take human waste after it has been flushed down the toilet, to the sewerage treatment works where it is processed, made safe to humans and animals and then returned to sea. Our sewerage system also collects rainwater from drains and directs this to the sea, to prevent our towns from flooding.

Overflows

These are the sewerage networks emergency release valves. During heavy rain, or if the pipes become blocked with items that should not be flushed down the toilet, there is not enough room in the pipes and they have to release into local streams and rivers. This is so that the waste does not back up and flood people's homes!

Overflows

There are grills over the end of outflow pipes but smaller items, like cotton buds and bits of plastic that have been flushed down the toilet still get through, and can end up in the ocean and on our beaches.



Misconnections

This is when household drains are plumbed into the wrong external drain. Sewage water that should be transported to wastewater treatment plants is instead drained directly into rivers.

Sewerage Treatment Works

This is where our waste water and sewage is treated to a series of processes to make sure that it is safe to be released into the sea and back into the water cycle. Water from here is no longer harmful to us.