Flushed Away

Lesson Objective: I will learn what should and should not be flushed down the toilet and the environmental impact of items flushed down the toilet

Length: 20 mins

Age Range: KS1 & KS2 (suitable for ages 5 – 11yrs)

National curriculum links:

Science: Understanding the impact of materials breaking down and how we dispose of them

Understand and develop knowledge and practical understanding of how different materials break down in the same environment and critical thinking as to why that may happen

This session offers children an opportunity for critical thinking and problem solving

Other links:

UN Sustainability Development Goals (SDGs)

4: Quality Education

14: Life Below Water

Equipment:

- Character List
- 3 tall containers filled with 300ml tap water (per person or as a group)
- Toilet paper (1 square per person or as a group) *This is the control*
- Kitchen roll (1 square per person or as a group)
- Baby wipes / wet wipes / flushable wipe (1 square per person or as a group)
- Something to stir the material in the water with e.g spoon
- A timer for 1 minute
- Pen & paper / something to record results

Experiment Method:

1. Split into groups of 3s. One person will be in charge of the timer, the second in charge of stirring and the third, recording the results. They can swap after each round
2. Set 3 tall containers (e.g glasses or plastic cups) next to eachother with water in them
3. Put toilet paper by one glass, kitchen roll by the second and a baby wipe by the third
4. Set the timer for 1 minute
5. Put the toilet paper in the glass, start the timer and stir
6. If it breaks down before the 1 minute is up, record the time in the worksheet. Once the time is up, record the results. What do you see?
7. Repeat for the kitchen roll and then for the baby wipe / wet wipe / flushable wipe

Vocabulary: fatburg, blockage, drains, sewage

Skills: Children will learn to think about different materials and how they break down in the same environment

Lesson Plan:

1. Discuss vocabulary
2. Introduce the activity characters in the character list and text below
3. Follow instructions to complete the Flushed Away experiment
4. Discuss background questions
5. Go over closing questions and what was learnt

Main characters:

The goodies:

Eco Protection Squad: A team of diverse super kids helping save Terra, Mother Earth, from Bill McGreedy and the Eco Squashers

Introducing NEW CHARACTER FROM ADVENTURE 2: Turn The Tap Off
Thandi: There's an air of mystery surrounding her, likely due to the amount of time she spends around water.

She protects water, as well as all biodiversity that thrives off water, and shares tips to reduce water waste, as well as what we can do to save our waterways, rivers and oceans.

The baddies:

Eco Squashers: Led by Bill McGreedy, this is a team who wants all the money and power and they don't care what they destroy in order to get it

Bill McGreedy: Bill McGreedy is the dosh behind the Eco Squashers. He made his fortune through banking, oil and livestock…and he won't give up his ways easily. He has his fingers in many business pies and will always choose the option that suits him the best, rather than working with Terra. He often goes out of his way ordering trees to be chopped or investing in oil digging rather than earth friendly alternatives. As he says 'My money, my rules"

Flushed Away:

Intro:

Sapling Squad – we have a CODE OAK emergency! Terra, Mother Earth, needs your help to fend of the Eco Squashers! Turn The Tap Off Thandi from the Eco Protection Squad has uncovered a plot to block our drains and build up giant fatberg monsters in our sewage systems! If this happens, lots of plastic and single-use items will end up in our rivers, seas and on our beaches. This will hurt Terra!

Thandi has discovered Bill McGreedy from the Eco Squashers are telling people that it is OK to flush kitchen roll and wet wipes down the toilet. Bill McGreedy is spending money on adverts everywhere to say kitchen roll and wet wipes will break

down the same way as toilet paper. But we need to show everyone that unlike toilet paper, kitchen roll and wet wipes will block our loos!

And Sapling Squad, we need your help to show this.

Will you help Turn The Tap Off Thandi defeat Bill McGreedy?

TREEmendous! OK, please split into groups of 3s.

In front of you, you will have 3 glasses…(see activity)

Activity:

Facilitator to go through Experiment Method. After 1 minute, write down what happens to each material in the water.

Background Questions:

- Do you know why what we flush down the toilet is important? *The drains from the toilet take what we flush from our toilet through pipes to a waste water treatment site where it is supposed to be cleaned. But sewer blockages and heavy rainfall can lead to overflow in the sewer system. Wastewater treatment places can currently release untreated water into rivers which go into seas (see Surfers Against Sewage at bottom of document). This means what we flush down the toilet could end up in the sea, rivers or on the beaches! The only items the sewage system can treat and remove are toilet paper, pee and poop. Anything else puts more strain on them leading to the blockages…and even FATBURGS!*

- Do you know what a fatburg is? *It is a giant blob in our sewers made up from congealed fat, oils and wet wipes that have been flushed down toilets and sinks. It can block our sewers and cost money to get people to go in and break them down. There are about 300,000 blocks every year in the UK and did you know it costs the UK about £88 million to clear those blocked drains every year? And we pay for this through our water bills!*

- Do you know what the only 3 things we should flush down the toilet are? *Pee, Paper (toilet paper) and Poop! Some kids may also want to say Puke!*

- Can you think of any odd items that could easily be flushed down the toilet? *Cotton buds, wet wipes, contact lenses, cotton balls, period products, kitchen roll, nappies, tooth floss, cigarettes. Sometimes toys and even a pack of Yorkshire puddings have been flushed too!*

Closing Questions:

- What did you find out?

- Can we prove that only toilet paper should be flushed down the toilet?
- Did you learn anything else today?
- Will you help Turn The Tap Off Thandi in the future and make sure you only flush the 3 Ps?

Curriculum Extension Ideas

DT: Design a poster to highlight why it is important to only flush the 3Ps down the toilet

English: Write a short poem about what should or shouldn't be flushed down the toilet

History: Research toilet and sewage from the past. How did the tudors get rid of waste? Was it any better than now? What can we learn from the past to help solve this for the future?

Information from 3rd Parties:

Surfers Against Sewage

"Untreated sewage and wastewater frequently discharges from thousands of sewer overflows around the UK, sometimes significantly reducing water quality. When these events occur, Surfers Against Sewage is automatically notified by the water company and issues a real-time sewage alert through the Safer Seas & Rivers Service so surfers, swimmers and other water users can avoid this potentially harmful pollution incident.

Water quality can also be reduced by heavy rainfall causing the input of multiple, often unidentified pollution sources, including road, urban and agricultural run-off and leakage from septic tanks. When these sources combine, they can often have a significant impact on water quality. The app includes daily pollution risk forecasts made by the Environment Agency, NRW and SEPA for 200 locations across the UK."

https://www.sas.org.uk/safer-seas-service/

City To Sea

Unflushables Campaign

https://www.citytosea.org.uk/campaign/unflushables/

Water UK

In a recent report, Water UK found that fatburgs are made up predominantly of wet wipes (93%)

https://www.water.org.uk/news-item/new-proof-that-flushing-wipes-is-a-major-cause-of-sewer-blockages/