

Facilitator notes: Making and cleaning sewage soup activity

Summary

The activity enables participants to think about what goes into our sewers; from bodily waste to the chemicals and cleaning products we use at home, and the soil and litter that runs into our roadside drains.

The resources list assumes six groups of up to six participants.

Prior to the activity, participants are asked to identify the various things we may find at a Severn Trent Water sewage treatment works.

Participants are then divided into groups and asked to treat their sewage using different equipment with the aim of producing the cleanest effluent possible.

Groups are judged on who has the cleanest effluent and also the largest amount of effluent ready for returning to the water courses.

Aim

To improve understanding of the sewage treatment process and how to use drains and sewers responsibly.

Objectives

Participants will understand that:

- sewers and drains, whether private or public, are designed to deal with human waste, toilet paper, waste water and nothing else
- any other items, even if they claim to be flushable, should be disposed of responsibly in either the bin or the nearest recycling/disposal bank
- placing the wrong items in our sinks and toilets could cause blockages that lead to sewage flooding into, or around, people's homes
- the majority of these blockages are avoidable.

National Curriculum links

Geography

- Geographical enquiry and skills
- Knowledge and understanding of environmental change and sustainable development

Proposed Curriculum Links (September 2010)

Areas of Learning

- Responsible Citizen
- Skills & Attitudes
- Personal Development
- Human Social & Environmental Understanding

Other Educational Initiatives

DFSC Sustainable Schools Framework

- Energy and Water
- Purchasing and Waste

Resources

1 set of the following:

1 large clear container/tank half full with tap water

piece of poo*

4 pieces of toilet paper

100ml of wee*

shake of salt

1 crisp packet

handful of cereal

small squeeze of toothpaste

sprinkling of soap powder

couple of leaves

squirt of shower gel

squirt of washing up liquid

1 cotton bud

1 plastic goldfish

small squirt of oil

small handful of soil (compost)

short length of dental floss

false teeth

1 wet wipe

One set for each group (approximately 6 children per group)

plastic tray to save spillage whilst group treats 'sewage'

1 litre jugs

clear plastic bottle

fine sieve

colander

funnel

filter paper

plastic beaker

2 x plastic cups

*Instructions to create 'poo' and 'wee'

Make the 'poo' by mixing weetabix with gravy granules and a small amount of water (some sweetcorn can be added if desired). Shape into rough cylinder shapes and wrap loosely in the toilet paper.

Make the 'wee' by squeezing a used tea bag into tap water to the desired colour.

Setting up

Place all your ingredients in a big box at the side of the room, and ask participants what they think we might find in sewage, pull out the items you have as they are called and, one ingredient at a time, ask pupils to help you add each to the container/tank of tap water, mixing well after each new ingredient is added.

Look at and discuss what happens to each ingredient. Does it dissolve, disperse, melt, sink, float...?

The liquid in the tank at the end of the activity is your sewage.

Running the activity: instructions

Introduction

Ask participants to list as many uses of water as they can think of.

Do we use too much water in this country?

How much water do we each use per day?

Why should we avoid putting fats, oils, greases and other items down the toilet and drains?

Cleaning the sewage soup

All cleaning activity should be done over the trays to collect any spilt liquids and prevent mess.

A participant from each group collects some sewage from the facilitator using their one litre jug. This is taken back to the group.

Group members decide for themselves how to clean their sewage using the remaining items of equipment.

Final clean effluent should be put into the clear plastic bottle for comparison.

It is expected that participants will use the colander, sieve and filter paper in order, straining their sewage to remove solids and using the beaker and plastic cups to collect the partially treated sewage between stages.

Plenary or discussion

Participants to state ways in which we can change our behaviour towards disposal of waste into the sewers

Why is it important that we all act to stop putting fats, oils, greases and other items down the toilet and drain?

What are you going to do when you go home?

Who will help you to achieve these changes in behaviour and who else can you influence?

Session leader(s) provide routes for feedback, give out leaflets, fat traps or other appropriate resources.

Session leader makes record of participant numbers and comments for reporting.

Facts to support facilitator

On average Severn Trent Water attends around 20,000 blockages each year.

55% of these blockages are caused by domestic misuse.

Of these blockages, a high percentage go on to cause pollution and sewer flooding. Most incidents are avoidable by simple action by our customers.

If liquid fats, oils and grease are disposed down the drain or sink, they quickly solidify on contact with the cool walls of the sewer, sticking to the sides. Other debris flowing down the sewer is then trapped and causes a blockage.

Flushing personal and 'disposable' products down the toilet can cause huge problems when they reach the sewage treatment works.

Synthetic materials such as wet wipes, nappies, female sanitary products etc. which are disposed of down the toilet cause over two-thirds of all sewer blockages which may lead to sewer flooding.