

Year 2: HASS and Science

Lesson Plan 2: Looking after our catchments - Story of a river

Lesson 1 (explore)

(30-45 minutes)

Activity - Story of a river

This interactive activity tells the story of a river (you could use local place names throughout the story) and human interaction with the river.

It considers “who is responsible” for polluting the river and actions we can all take to care for our catchments and waterways.

Materials	Quantity
Fish tank or clear bowl filled with approx. 2 litres of clean water	1
Cannisters – filled – see table below	1
Small net	1
Storm water drain image	1
Image of drain outside house (under tap)	1
Paper towel	

SET UP

1 - Before class, prepare and label the film canisters (or other small opaque containers) using the items in the chart below. Prepare enough canisters for each student to have at least one. There are 15 different canister labels, so for large classes, you will need doubles of some characters.

Canister	Label	Contents	Issue
1	Jo	Yellow cordial and water (or food colouring)	Toilet waste
2	Brian	Soil	Land clearing
3	Priya	Milo and water	Animal poo
4	Theo	Food colouring	Pesticides at vineyard
5	Lani	Fishing line	Fishing
6	Felix	Small rocks	From construction site
7	Nathan	Detergent	Detergent from washing cars
8	Julie	Paint	Washing paint brushes
9	Alex	Oil	Oil leaking from cars
10	Finn	Milo and water	Dog poo
11	Charlie	Rubbish	Rubbish from street
12	Sukura	Grass	Grass clippings
13	Singh family	Rubbish	Rubbish from picnic
14	Aronn	Bicarb soda	Fertiliser
15	Mei	Food colouring – mixture of colours	Fuel leaking from boat

SESSION

- arrange your students in a circle around the water container, and hand out the containers (ask them to keep them closed and upright)
- introduce the concepts catchments
- read the following *Story of a River*
- get the students to add the item in their container to water as the story progresses.

Story of a River

Way up high in the mountains of Tasmania water flows down a small stream. As it moves down the mountain, more streams join it, and it carries more water.

In the national park **JO** is enjoying the amazing scenery on a camping trip. When nature calls, Joe answers it, just near the river. The waste enters the river and the river continues down the mountain.

As the river leaves the national park and enters farmland, Farmer **BRIAN** has cleared many of the trees. As the river goes through Brian's farm, soil, which doesn't have any tree roots to hold it together is washed into the river. The river continues down the mountain.

At the next farm, Farmer **PRIYA** hasn't fenced off the river and his cows are grazing right down to the water's edge. As the water goes past, cow poo is washed into the river.

Further down the river there is a vineyard. **THEO** is spraying the grapevines but hasn't checked the weather. It is very windy and some of the pesticide blows into the river.

Around the next bend **LANI** is fishing. She gets her fishing line caught on a branch and cuts it free. She watches the snarled fishing line float down the river.

The river starts flowing by a more populated area. New houses are being built. **FELIX** the builder has been working with an excavator making a big pile of soil just near a storm water drain [show picture of storm water drain]. When it starts raining, some of the soil washes into the stormwater drain and flows down into the river.

Down the road, **NATHAN** is washing his car on the driveway. As she hoses off the car, the water and suds flow into the storm drain and down into the river.

Closer to town, **JULIE** has been painting her house. As she washes out the brushes into the drain under her outdoor tap, the paint washes into the stormwater drain and into the river. (Show image of drain under tap.)

ALEX has just taken their car for a drive. Back in the driveway they notice some oil dripping on the driveway. It starts to rain and the oil gets washed into the stormwater drain.

FINN is taking his dog for a walk. As the dog does a giant poo on the nature strip, John looks the other way and pretends not to notice. Rain the next day washes the dog poo into the storm water drain.

CHARLIE is walking home from school. They eat a snack and drops the rubbish in the street. The wind blows the rubbish into the gutter and during the next rain event, the rubbish washes down the storm drain and into the river.

SAKURA is mowing the lawn. To get rid of the clippings she washes them down the drain out the front of her house.

As the river comes close into the town, there is a park on the river's edge.

The **SINGH FAMILY** are having a picnic. They leave behind some rubbish, which the wind picks up and blows into the river.

ARONN is putting fertilizer on his garden and nature strip. He didn't check the weather and the storm that comes later that afternoon washes some of the fertiliser into drain and it makes its way into the river.

Out on the river, **MEI** is out cruising around on her boat. Fuel is starts leaking from the tank into the river.

The river keeps flowing to where it meets the sea.

DISCUSSION QUESTIONS

- Would you want to swim in this water?
- Would it be healthy for plants and animals?
- Who is responsible for the pollution? (*all of the characters*).
- How could we clean it up? Ask one of the students to scoop out material with the net. Is it clean yet? There are still pollutants dissolved in the water.
- Is there a way that we could have prevented this pollution?
- Ask the students (in story order) what they could have done differently so that their character's actions didn't have a negative effect on the water quality.
- Reiterate that we all have responsibility to care for our catchment.

(See below for information).

	Label	Issue	How it affects water quality	What could they have done instead?
1	Jo	Toilet waste	Bacteria and viruses into water. The organic matter takes oxygen to break down which decreases the oxygen in the water (which fish and other animals need).	Number 1s – do them at least 100 metres from water. Number 2s – do them at least 100 metres from water and in a hole at least 15cm deep that you cover (carry out toilet paper).
2	Brian	Animal poo	As above	Fence the river so farm animals can't get down to the bank
3	Priya	Land clearing	Soil suspended in water stops sunlight getting down far enough for aquatic plants to grow	Leave (or replant) native trees along creeks and rivers
4	Theo	Pesticides at vineyard	Pesticides can kill aquatic life	Check the weather and don't spray on a windy day
5	Lani	Fishing	Animals can get caught in the fishing line.	Make sure you collect all fishing line and dispose of it a bin.
6	Felix	Soil from construction site	Soil suspended in water stops sunlight getting down far enough for aquatic plants to grow	Have barriers in place so soil can't get into the storm water drains

7	Nathan	Detergent from washing cars	Detergents can add nutrients like phosphates, which cause algal blooms (which cover water surfaces, blocking sunlight) as well as using up oxygen.	Wash car on grass or at car wash (where they recycle the water)
8	Julie	Washing paint brushes	Toxic chemicals in paint affect aquatic life	Wipe excess paint off brushes onto newspaper. Soak brushes in water in bucket and pour this water onto garden (away from drains).
8	Alex	Oil leaking from cars	Oil sits on top of water, blocking sunlight. Smothers and poisons marine life	Get car fixed
9	Finn	Dog poo	Bacteria and viruses into water. The organic matter takes oxygen to break down which decreases the oxygen in the water (which fish and other animals need).	Pick up dog poo and put it in the bin.
10	Charlie	Rubbish from street	Animals can eat and be trapped in rubbish. Plastic breaks down into microplastics.	Put in bin. If no bin, take it with you and put in next bin you see (or at home).
11	Sakura	Grass clippings	As grass clippings break down it uses up oxygen in water that aquatic life needs to survive.	Compost clippings, or spread in garden away from areas they could wash into drains.
13	Singh family	Rubbish from picnic	Animals can eat and be trapped in rubbish. Plastic breaks down into microplastics.	Take rubbish home with you.
14	Aronn	Fertiliser	Increases nutrients, which can cause algal blooms. Algal blooms block sunlight and deplete oxygen.	
15	Mei	Fuel leaking from boat	Can coat animals and poison them.	Make sure boat and motor are in good condition

Clean up

To minimise harm to the environment, don't pour the remaining water down the sink.

- Strain any solid material
- Remove oil from surface of the water with paper towel and dispose of in the rubbish
- Pour remaining water onto garden or lawn.