



The Arts - Contents

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FOCUS

- How does the water cycle function?
- What part do waterways play in the water cycle?

OBJECTIVES

- Dramatise the water cycle
- Understand the various processes of the water cycle

BACKGROUND

Understanding the water cycle is an important part in understanding catchment processes. Removing riparian vegetation from along waterways increases the volume of water which runs off the land, and the amount of pollution it carries from the wider catchment. Likewise irrigation and water use by towns can reduce flows in streams, and impact on the health of waterways.

NOTES

This activity is best conducted outside or in an open area such as a multi-purpose room or art room. If you invite a presenter to your school during the week, they could conduct this during their visit.

LEARNING TASKS

- 1 Arrange the classroom into areas (see Teacher Task Card 1),**
 - Start without the irrigation channels.
- 2 Assign four students to each role in the water cycle**
 - 4 water carriers per group (clouds, river, lake, ground and trees / irrigation channel)
 - 1 'sign holder'. (signs titled 'Evaporation', 'Condensation', 'Precipitation', 'Transpiration' and 'Runoff')
 - In Part C, the 'Trees' become 'Irrigation Channels'.
- 3 Follow instructions on Task Card 2 to conduct the dramatisation.**
 - You can a 'freeze' the situation, where students resume human roles to discuss the process and it's implications.
- 4 Restrict the dramatisation to the water cycle only for the first time.**
 - Or, focus an entire session on the activity, repeating it several times to allow students to swap roles.
- 5 If time allows, a reliable student can become the narrator.**

CSF II LINKS

- THE ARTS 4.1 Drama
4.2 Drama
4.3 Drama
- SCIENCE 4.1 Biological

MATERIALS

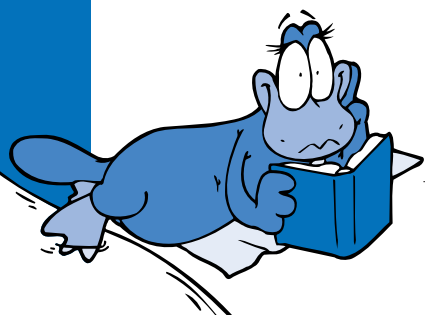
- **'Let's Act It Out' Teacher Task Cards 1 & 2**
- **16 water containers** (milk cartons, buckets, bottles)
- **Signs**
- **Bed sheet**
- **Chalk** to mark boundaries (optional)

EXTENSION

Discuss other impacts on the water cycle from human activities, these could include pollution from towns, impacts of livestock, industrial use of water and dams. Compare this to how Indigenous Australians used water in the past.

ASSESSMENT

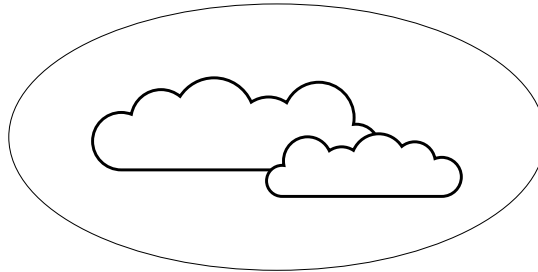
Did students demonstrate the ability to take on roles and experiment with ideas through drama? Could they describe personal observations about the content of the drama and draw parallels between the concepts explored and those that occur in our natural environment?



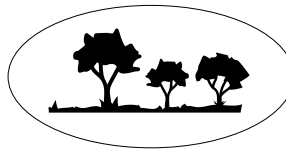
Let's Act It Out - Teacher Task Card 1

Water cycle map

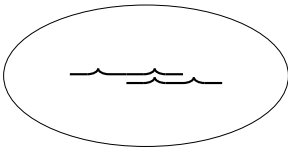
Clouds



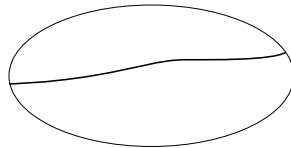
Trees



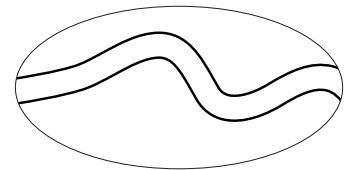
Lake



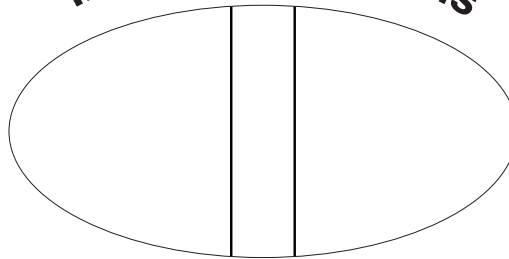
Ground



River



Irrigation Channels



BEGIN
USE
NOTE

the activity with students in designated positions, with all water containers in the lake area.
water containers to represent water movement.
the Sign Holder holds up the sign (shown in capitals on the next page) for each process.



Let's Act It Out - Teacher Task Card 2

Part A

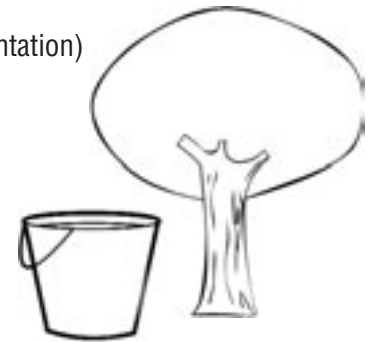
The Water Cycle

- 1 The four **Lake** people each carry a bucket to the **Clouds** (EVAPORATION).
- 2 The **Clouds**, receive the water containers, and prepare for rain (CONDENSATION).
- 3 The **Clouds** deliver three water containers to the **Ground** and one to the **River** (PRECIPITATION).
- 4 **Repeat the process three more times.**
- 5 The **Ground** passes four buckets to the **Trees**.
- 6 The **Ground** passes two buckets to the **River** (RUNOFF).
- 7 The **River** passes two buckets of water downstream to the **Lake** and two buckets back to the **Clouds**.
- 8 The **Trees** use the water and release the four buckets onto the surface of their leaves. (TRANSPIRATION). This water then evaporates back to the **Clouds**.

Part B

Depleted Riparian Vegetation (Increased runoff, erosion and sedimentation)

- 9 Remove three **Trees**.
 - 10 Reset the scene and repeat to step 4.
 - 11 **Ground** passes one bucket to the **Tree** and five buckets to the **River**.
- Repeat the cycle two more times.

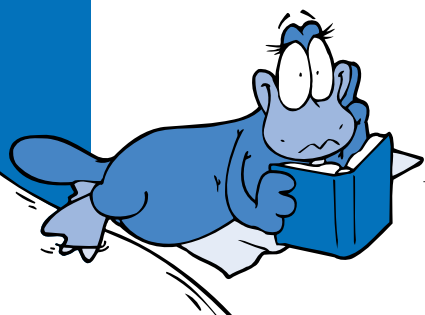


Part C

Alterations to natural flow patterns (Irrigation and domestic water use affects waterways)

- 12 Three **Trees** become **Irrigation Channels** running from the **River**.
 - 13 Reset the scene and repeat steps 1– 2
 - 14 The **Clouds** deliver four buckets to the **Ground**,
 - 15 The ground passes the buckets onto the **River**. **Irrigation Channels** cross their arms (closed).
 - 15 The **River** passes the water on to the **Lake**.
 - 16 Repeat to step 14,
 - 17 This time **Irrigation Channels** open arms (channels open), and use three buckets. One bucket goes to the **Lake**.
- Repeat the irrigation cycle two more times

DISCUSS The water cycle, the impact of depleted riparian vegetation and alterations to natural flow patterns.



FOCUS

- How can my actions impact on waterways?
- How does pollution affect waterways and humans?

OBJECTIVES

- Participate in a role play
- Increase awareness of river management issues

BACKGROUND

The actions of individuals affect catchments and waterways. While the actions of one person alone may not have a serious impact, the collective actions of all members of a community may result in a polluted waterway. River management, therefore, is most effectively achieved as a whole community working together rather than by individuals alone.

NOTES

'River Role Play' provides an excellent insight into the issues of water quality and river management. On the completion of this activity use a sieve to remove gross pollutants from the water in the aquarium and then pour the remaining liquid on to a well-mulched garden.

LEARNING TASKS

- 1 Use the 'River Role Play' Task Card 1 to prepare sticky labels for each plastic film canister, stating character's name and position.**
 - Prepare a canister for each student.
 - Fill canisters with pollution prior to the lesson.
- 2 Assign roles and distribute the labelled canisters to students.**
- 3 Half fill the aquarium with rain / tap water and place on display.**
- 4 Fill one clear glass with the same water. Leave it aside for comparison at the conclusion of the activity.**
 - Revise the concept of a catchment, identify a local waterway that receives water from your catchment and discuss the known land uses and industry in your area.
- 5 Introduce the roles using the Teacher Task Card 1.**
- 6 Read Teacher Task Card 2.**
 - Students pour the contents of their canister into the fish tank at the end of the paragraph naming their character.
- 7 Discuss the impacts of the pollution on the waterway and ways we can work together to improve the health of our catchments.**

CSF II LINKS

THE ARTS	4.1 Drama
	4.2 Drama
	4.3 Drama
	4.4 Drama
SCIENCE	4.1 Biological
	4.2 Chemical
SOSE	4.3 Geography

MATERIALS

- 'River Role Play' Teacher Task Cards 1 & 2
- Aquarium half filled with water
- 20 film canisters
- Two clear glasses
- Sticky labels
- 'Pollution' (see Teacher Task Card 1 for further details)

EXTENSION

Involve Junior School students in this activity, with the help of your class. Create two class collages the first showing the people polluting a catchment and the second with people taking positive actions to mitigate pollution.

ASSESSMENT

Could students describe personal observations about the drama and draw parallels between concepts explored and those that occur in our natural environment?

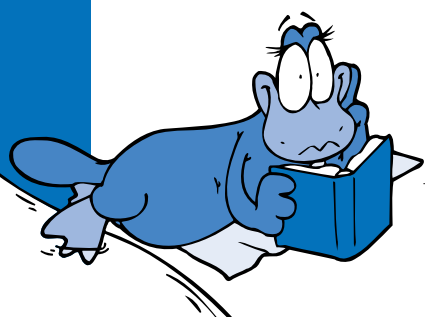


River Role Play - Teacher Task Card 1

Roles and Preparation

PREPARE a film canister for each student using the instruction below.

Canister label		Canister contents	
Name	Position	Use	Amount
Sally Stockwoman	Cattle Farmer	Thick muddy water	One container full
Wendy Woollyjumper	Sheep Grazier	Salt	One teaspoon
Otto Oinkalot	Piggery Operator	Thick muddy water	Container full
Harry Harvester	Wheat Farmer	Baking powder	One teaspoon
Rock'n'Robin	Quarry Hand	Vinegar	Container full
Peaceful Pete	Hobby Farmer	Yellow water and toilet paper pieces	One container full
Rebecca Reel'em'in	Fisherperson	Nylon string	A tangle of line
Speedfreak Susie	Water Skier	Vegetable oil	One teaspoon
Tommy Tourist	Picnicker	Plastic bag	One bag
Cruiser Chris	Tour Boat Operator	Plastic bag	One bag
Barry Build'em'up	Building Site Worker	Soil	One teaspoon
Garry Green-Thumb	Gardener	Baking soda	One teaspoon
Victor	Mower Man	Grass clippings	Container full
Wayne Wag-a-lot	Dog Owner	Sultanas / muddy water	One teaspoon
Zooming Zac	Motorist	Vegetable oil / mud	Container full
Ziparound Zara	Motorist	Vinegar	Container full
Marvin the Maker	Industry	Detergent	Five drops mixed with container of water
Knock'em'down Ned	Tannery	Water with food colouring or soy sauce	Five drops mixed with container of water
Neighbourhood Nelly	Community	Band-aids, paper pieces, or detergent	Container full



River Role Play - Teacher Task Card 2

READ the following story emphasising the bolded words and pausing where indicated by a ♣ .

MAKE sure students listen carefully for their cue.

The River Story

The river travels through the hills to area owned by **Sally Stockwoman** who owns and runs a cattle farm. The cattle drink water from the river every day. ♣

As the river winds it's way down through the gentle slopes, it gathers speed. Passing **Otto Oinkalot's** piggery, some of the pig's manure is washed into the river. ♣ At **Harry Harvester's** wheat farm, he waters his crop after recently fertilising it. ♣ The river passes the grazing sheep on **Wendy Woollyjumper's** farm. Many native trees have been removed. The rising watertable beneath the soil brought salts up to the surface. ♣

Around the corner **Rock'n'Robin** digs for rocks in her quarry. The quarry pumps water out of the river to clean its equipment and flush out some of the waste. ♣

The river winds its way through the outskirts of town. People like **Peaceful Pete** come out to the country on the weekend to escape the city. The houses have septic tanks that sometimes overflow. ♣

Rebecca Reel'em'in is fishing off the riverbank. She has more fish than she needs and her line gets tangled around a snag. **Speedfreak Susie** is water skiing and she has not been looking after her boat. Oil is leaking into the river, leaving a small shiny oil slick over the surface of the water wherever the boat goes. ♣

Tommy Tourist is enjoying a BBQ with his family near the river. All of a sudden a gust of wind blows their litter into the water. ♣ **Cruiser Chris** provides snacks and drinks to tourists on his boat. He has not installed rubbish bins so the careless tourists throw their bottles and cigarette butts overboard! ♣

The river now winds through town where **Barry Build'em'up** is busy developing a new housing estate. Rainfall erodes the top layer of soil and deposits it in the river. ♣

Most established houses, like **Garry Green-Thumb's** have a garden. Garry turns on the sprinkler and the pesticide he uses washes into stormwater drains. **Victor** has just finished mowing his lawn. He dumps the clippings down the stormwater drain. ♣ Down the street, **Wayne Wag-a-lot** lives with his poodle, Paris. Wayne takes Paris for a walk every day but he does not pick up after her when she relieves herself. ♣

It's 5 o'clock and people like **Zooming Zac** and **Ziparound Zara** are driving home from work and running their afternoon errands. Oil drips out of the cars onto the road. ♣

Further down the river **Marvin the Maker** is one of the industry owners who use detergents to keep his equipment clean. Marvin sometimes hoses out his factory into a gutter that flows into our river. ♣

Knock'em'down Ned has some empty chemical drums. He will have to pay to take them to landfill or to a hazardous waste dump so he leaves them lying by the river. ♣

The river flows behind a row of houses. Here, the untreated sewage from **Neighbourhood Nelly's** home overflows into the river. ♣

What was fresh clean, clear water is now dirty, slimy, cloudy and polluted simply because it passed through our catchment.

*Scoop a glass of water from the tank. Ask, "Would you drink this water?"
Compare it to the original glass.*

Discuss ways we could change prevent this pollution from impacting on our waterways.



FOCUS

- What creatures live in our waterways?
- What do they look like?

OBJECTIVES

- Research the appearance of a chosen creature
- Design and construct a model using art materials

BACKGROUND

Many diverse creatures inhabit our waterways, including amphibians, fish, mammals, birds, reptiles and invertebrates. These animals can range in size from very large to microscopic. Some spend all or part of their life cycle in the water and some visit the water only for feeding, roosting or during times of breeding. You could incorporate this art activity into a broader study of a particular aquatic invertebrate, researching its life cycle, diet, habitat and threats.

NOTES

'Create-a-Critter' is a Waterwatch art competition held annually, often as a follow-up for primary schools that have participated in an Aquatic Invertebrate Sampling Activity (see Welcome, 'Waterwatch Activities').

LEARNING TASKS

1 Assist students to research an aquatic invertebrate.

- Investigate its size, body shape, proportions, number and type of body parts, texture, colour and the distinguishing features that make it unique.

2 Assist students in planning the design of their models.

- What will form the structural basis of the model?
- How will it be joined together?
- What materials will be used to ensure that the model is realistic?

If you wish to enter models in the 'Create-a-Critter' competition contact Waterwatch for guidelines on model size and construction materials.

3 Select from suggested items in the materials section.

- construct the basic structure of the model
- complete the outer shell
- add distinguishing features and finishing touches.

CSF II LINKS

- THE ARTS 4.1 Art
4.2 Art
- SCIENCE 4.1 Biological Science
4.2 Biological Science
- TECHNOLOGY
4.1 Materials
4.2 Materials

MATERIALS

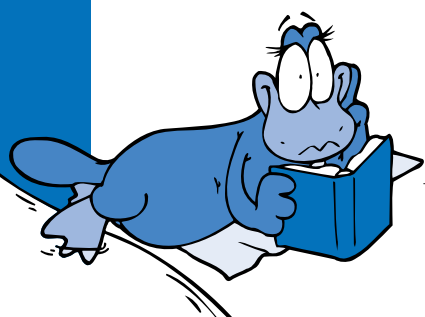
- **Construction items** (paper maché, wire, icy pole sticks, straws, boxes / containers, clay, cloth material, buttons, paper / card, feathers, felt, tissue paper, cellophane, glitter, foil).
- **Glue / sticky tape**
- **Blue tac**
- **Scissors**

EXTENSION

Enter appropriate critters in the 'Create-a-Critter' competition or decorate your classroom or school's foyer/corridor as a waterway and display your creatures in their natural habitat.

ASSESSMENT

Were students able to investigate the features of an aquatic invertebrate and create a realistic representation based on their research? Did they choose effective materials and apply creative construction techniques?



FOCUS

- What do healthy / degraded waterways look like?
- What life exists *in* and *around* our waterways?

OBJECTIVES

- Design and build a diorama to represent knowledge of aquatic life and waterway health.

BACKGROUND

Waterways are diverse and individual places. Each has its own combination of values and threats. This activity will allow students to use their imaginations to create their own waterway scene, incorporating what they have learnt throughout the week.

NOTES

Although primarily an Art activity, knowledge of some of the features of aquatic ecosystems will be required to construct dioramas. Consequently, this task would work well as an activity to conclude Water Week and provide students with an opportunity to demonstrate learning in an eye-catching, fun and hands-on manner.

LEARNING TASKS

- 1 Working alone or in pairs, students decide on the scene to create inside in a shoe box.**
 - an underwater cross-section
 - a view looking up or downstream with banks on either side
 - looking at the bank as if you are on the water
 - running through a town, park, farm, etc.
 - healthy, degraded or even polluted waterways
 - devoid of people or full of people to show a weekend scene
- 2 Encourage students to complete a sketched plan of the diorama.**
 - Consider making the scene three-dimensional
- 3 Students begin their diorama by making the background scene.**
 - Measure and cut the paper required for the floor, ceiling and walls first, decorate then secure it in place.
- 4 Assist students as they create their scene.**
 - What plant / animal life will be in the scene and where?
 - Will there be humans, and what will they be doing?
 - Will there be man-made features present?
 - Will there be observable threats to the waterway or obvious signs of poor / good management?

CSF II LINKS

- THE ARTS 4.1 Art
4.2 Art
4.3 Art
4.4 Art

MATERIALS

- **Shoe box**
- **Glue**
- **Scissors**
- **Pens and pencils**
- **Paint**
- **Construction items** (e.g. coloured card, wool, cellophane, containers, material, straws, foil, icy pole sticks, twigs, leaves, pebbles, grass, modelling clay, toy people / animals / buildings, magazine pictures)

EXTENSION

Complete English activity 'Quirky Cinquain' using the complete diorama as inspiration. Use dioramas as the focus of oral presentations to other classes, parents or the community.

ASSESSMENT

What do dioramas demonstrate about waterway knowledge and artistic skill?



FOCUS

- How can we express a waterway scene?

OBJECTIVES

- Explore moods, actions and situations through mime
- Adopt the identity of living and non-living things
- Use body language, facial expressions and gestures

BACKGROUND

Unhealthy catchments lead to the degradation of our waterways. When this occurs, the plants, animals and humans who live in and around the waterway are affected. This activity will demonstrate the effects that negative impacts can have on catchments and therefore waterways, as well as illustrating some of the components of a healthy catchment.

NOTES

The following list of drama ideas can be implemented in a variety of ways depending on the dynamics of your class, space available and your students' previous drama experience.

LEARNING TASKS

- 1 Students will need a large open space for this activity.
- 2 The following are prompts to explore ways of moving and performing to express moods, actions and situations. Each should be performed as mime to encourage students to use alternative methods of communicating. Refer to the task card for further details on each activity.

Activity A

- Students choose a scenario, which they mime.

Activity B

- Start with an empty space, one by one each student enters the scene as an object (living or non-living) and freezes until an entire scene has been created. Later bring the whole scene to life.

Activity C

- The class creates a scene that portrays a healthy waterway. When this is complete, begin altering the scene, adding the other half of the class as unhealthy elements including litter, oils, garden waste etc.

CSF II LINKS

- THE ARTS 4.1 Drama
4.2 Drama
4.3 Drama

MATERIALS

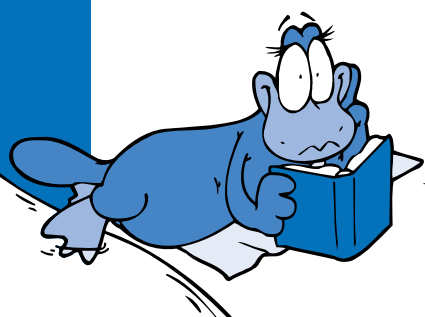
- *'Some Dramatic Ideas'* Teacher Task Card
- **Costumes** or pieces of fabric to assist in expression
- **Open space**

EXTENSION

You could have scenes created by half the class with the other half making decisions about how to alter the scene. Perhaps a student could commentate or narrate the scene?

ASSESSMENT

What did students' chosen roles demonstrate about their understanding of waterways? Were they able to predict and portray how their role may change in a new situation?



Dramatic Waterway Scenes - Teacher Task Card

Activity A

Students should choose a scenario from the list below that they are to mime.

- Drinking a mouthful of pure, fresh water
- Drinking a mouthful of turbid (muddy) water
- Canoeing in a clean, healthy waterway
- Canoeing in a polluted waterway
- Digging a hole and planting a tree
- Growing from a healthy seed to a tree
- A murray cod looking for a hollow
- An aquatic invertebrate affected by toxic waste
- A piece of soil being eroded from the bank
- A possum looking for shelter in a bare riverbank
- A fish with its path blocked by a weir
- Wading through sludge covered water
- A fish hiding among snags from a hungry carp
- A tourist having a picnic beside a healthy river
- A tourist having a picnic beside a degraded river
- A piece of rubbish travelling in stormwater
- A riverside tree full of life – birds, possums etc.

Activity B

Start with an empty space, one by one each student enters the scene as an object (living or non-living) and freezes until the entire scene has been created. Consider creating a scene with multiple levels i.e. on the floor, crouching or standing. These scenes could include:

- river
- town
- wetland
- forest
- farmland
- tourist riverboat
- water cycle
- town picnic



Activity C

Half of the class could create a scene that portrays a healthy waterway. Use the list below to generate characters in the scene. When the scene is complete, the teacher could give a cue for the scene to come alive and for a short time the trees could sway, river flow, frogs jump and birds feed. Given a cue, the scene must freeze again.

- part of a river
- a kangaroo
- a swamp
- a building in the town
- a big old tree
- native grasses
- a hill
- a happy farmer
- a young seedling
- waterbirds
- frogs
- a child planting a tree
- a snag in the river
- a native fish
- an aquatic invertebrate

Begin altering the scene, adding the other half of the class as pollution to make the waterway unhealthy. Students demonstrate how these changes will affect the scene and their role.

- litter
- oils
- weeds
- fertilisers
- sediment
- factory waste
- salt
- polluter
- introduced fish



FOCUS

- What interactions with waterways form part of Aboriginal people's life?
- How do these interactions change over time / space?

OBJECTIVES

- Prepare and describe artworks that depict a sequence
- Research Aboriginal people's interactions with waterways

BACKGROUND

Aboriginal people have had a constant, yet dynamic, association with waterways for over 40 000 years. In this time they have maintained these systems for their own survival, which is linked to the health of the environment. Tradition, trade / economics, spirituality and environment have been part of this interaction and will continue to be so in the future. This association includes both physical and spiritual connections.

NOTES

When undertaking this activity you are encouraged to invite a traditional landholder or tribal Elder to the classroom. These people are amazing human resources who can greatly value add to the session.

CSF II LINKS

- THE ARTS 4.1 Art
4.2 Art
4.3 Art
4.4 Art
- SOSE 4.1 History
4.3 Geography

LEARNING TASKS

- 1 Read a number of extracts on Aboriginal people's interactions with local waterways from current and historic perspectives.**
- 2 Discuss with students some Aboriginal people's associations with waterways.**
 - economic / trade, social, spiritual and environment.
- 3 Students work in groups to complete spiral artwork, which depicts Aboriginal people's interactions with waterways.**
- 4 Start with each group cutting out a large circle from their piece of card.**
- 5 Groups then decide on the theme for their wheel.**
 - time (e.g. pre and post European people's arrival)
 - across association types (economic etc.)
 - from the perspective of different tribe members
 - from different tribes.
- 6 Complete the collage (or mural) around the wheels.**
- 7 Groups then present their artwork to the class and discuss the similarities between Aboriginal people's and student's associations with waterways.**

MATERIALS

- **A1 or A0 sized card**
- **Variety of materials** for a collage

EXTENSION

Undertake a fieldtrip to the Barmah forest. Look at the similarities between local Aboriginal people's experiences and the art produced by students.

ASSESSMENT

Were students able to prepare work that demonstrated a good understanding of their theme? Did they work effectively in groups? Were their presentations effective?

