

What's happening in Australia to the rivers? Do we know?



What is happening to the Australian rivers?

Lets find out:

The main focus in this Inquiry is upon what lives in and on the mighty Australian rivers and their tributaries and to explore the health of these rivers.

The students will create a River mural as they get opportunities to explore concepts, processes and materials throughout the program. They will be encouraged to research and explore their ideas about what they think is happening to the Australian rivers.

The program content:

Students will complete a series of structured learning activities in Art/ Craft/ Science / Geography/Literacy and Mathematics connected to the Australian curriculum [Year 4] over the duration of the program



The curriculum content:

Biological Science:

- *Living things have structural features and adaptations that help them survive in their environment.*
- *Living things, including plants and animals, depend upon each other to survive.*
- *Living things have life cycles*
- *Natural and processed materials have a range of physical properties which influence their use*

Science Inquiry skills:

- *Science involves making predictions and describing patterns and relationships.*
- *Science knowledge helps people to understand the effect of their actions*
- *With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge*
- *Suggest ways to plan and conduct investigations to find answers to questions*
- *Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate.*
- *Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends*
- *Compare results with predictions, suggesting possible reasons for findings*
- *Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports*

Geography:

- *The types of vegetation and the significance of that vegetation to the environment and the river.*
 - *The different perspectives on how this environment can be protected.*
 - *The natural resources in the local environment that need to be sustained.*
 - *An individual action that can be taken in response to a local geographical challenge in relation to the river*
 - *The natural resources provided by the environment, and different views on how they could be used sustainably*
 - *The sustainable management of waste from production and consumption*
- Present findings in a range of communication forms, for example, written, oral, digital, graphic, tabular, and visual, and use geographical terminology*
- Reflect on their learning to propose individual action in response to a contemporary geographical challenge and identify the expected effects of the proposal*

Mathematics:

- *Statistics and Probability:*
- *Identification of everyday events where one cannot happen if the other does.*
- *Measurement and size/ shape*

Visual arts:

A set of tasks that support artistic investigation and exploration

- *Use materials / techniques and processes to explore visual conventions when creating art works: Colour/ shape/ design/ texture and size.*
- *Manipulate and experiment with combination of various materials.*
- *Practice a variety of techniques and materials to interpret a theme: tie dyeing, Screen printing, collage, creating using marine debris collected from the river, using recycled products to make and create,*

Literacy/ language: 'Storm Boy' by Colin Thiele: Text and the movie of the same name.

- *Build comprehension strategies to build literal and inferred meaning.*
- *Understand the language of opinion and feeling and the language of factual reporting*



Tuning in: Use some video clips/ travel clips of some of the beautiful Australian rivers.... for some time. Check out the maps of the rivers

Ask the students:

What is the life of a river.... above and below?
Mind map all the ideas that they come up with.
Provide opportunities for discussion/ questions.
Create a River question board nearby, for hard questions.
Get the Students to really to explore what they know...

Create a Questioning space/ Provocation or Inquiry table:

On the table:

Place:

- River sand
- Water from the river
- Rocks
- Greenery from the edge of the river
- Greenery from the river: weed
- Shells/ sponges/ reeds
- Dried bugs
- Mud
- Dried fish....5/6 different sort... or?



Introduce group to Scientific exploration tools:

Dissectors and Magnifiers. Show how to use them

Break into small groups. Each group to have a Dissector and a Magnifier

Each group to choose at least one object from the Inquiry table:

Then they need to describe what they are looking at:

- Looks like / feels like/ smells like on the outside

Then, using Dissector, cut

- Same thing on inside?
- What would help you 'look' closer?

10 magnifiers

Look at the object on the outside then get closer and closer.



Then:

Looking like a Scientist drawing like an artist.
Drawing what they see...as small as small as they can....
Maybe into a bottle top or a milk bottle lid.
Watch and listen for the language of exploration/ curiosity:



Collect all the small lid drawings. Shuffle them up and hand them around to each other.
See if they can guess what they are seeing in front of them. Cells? Hairs? Is it the water?
Is it the sand? Have fun with this!

Finding out:

A. Discuss what is happening at the:

- bottom
- middle
- top of a river?

What is actually **IN** the river?

B. Divide a length of white sheeting into 4 sections lengthwise. [like a folded up blind.]

Leave the top section white.

C. Brainstorm in small groups together.

Create a little graph or table and divide into the 3 areas

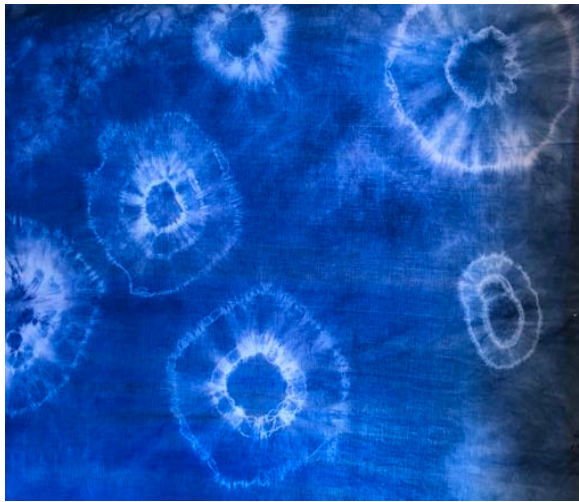
Fill each space...

What is happening in the river???

This process is very important for the successful completing of the River mural.



D. In the bottom three sections of the sheeting using elastic bands tie to create circles or patterns as in water When completed dye the tied sheet in blue dye and hang outside to dry.

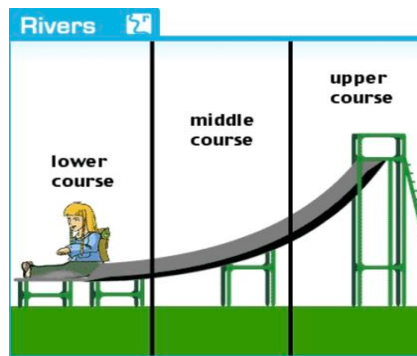


Thread a bamboo stick through the top of the hanging so that it can be hung in the classroom. Fold sheeting into 4.

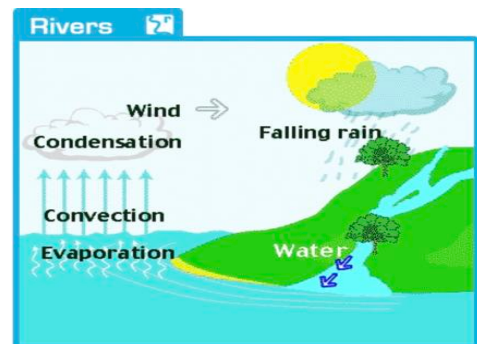
Using 3 bamboo sticks: Thread them through the sheeting to symbolize the bottom, middle and the top sections of the river

Finding out:

A. Discuss the making of a river and the water cycle. Weather patterns, seasonal change and where the river originates and where it finishes and moves into the sea



B. Discuss the river water and it's qualities and the river's length and power in relation to the water cycle. Who looks after it?



C. Discuss dams and hydro electricity.

Ask some questions about what is happening to the rivers?

Do they know?

What rivers have dams?

How many dams?

Where?

Why?

D. Transportation: Travelling on an Australian River... how? Who travels on a river?



E. What lives in the river?

Everything:

Discuss food chains and connections. Birds/ insects/crustaceans/turtles/pelicans cormorants etc.,

Introduce 'Storm Boy' by Colin Thiele:

<https://www.australiancurriculumlessons.com.au/2013/11/16/storm-boy-by-colin-thiele-a-mini-unit-of-lessons-and-activities/>



Then:

F. What makes a fish a fish?

List all the body parts of a fish: Chart these: Gills, tail, fins etc., How do they move/
breathe?

Live?

Grow?

Recreate?

Sorting out:

Discuss the largest fish/ dolphins/ stingrays etc., at the bottom of an Australian river...

How big / how long and live where?

Compare sizes/ weights. Use tape measure and scales.

Feed on?

WWWWH and W



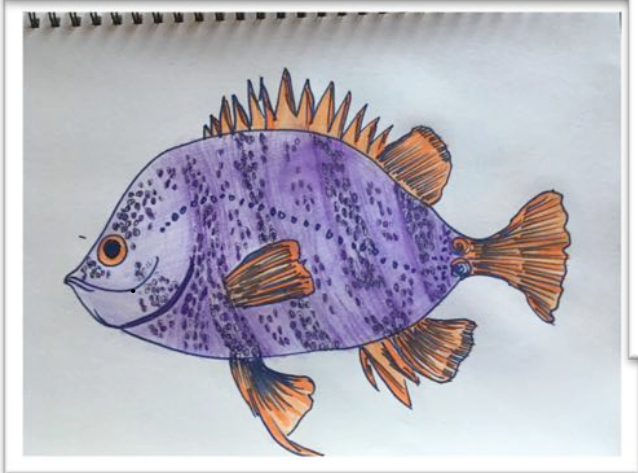
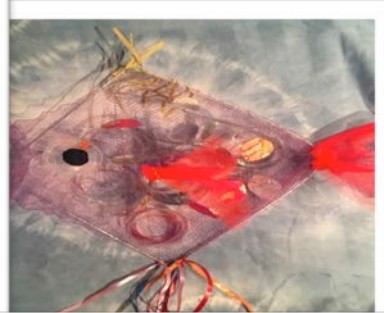
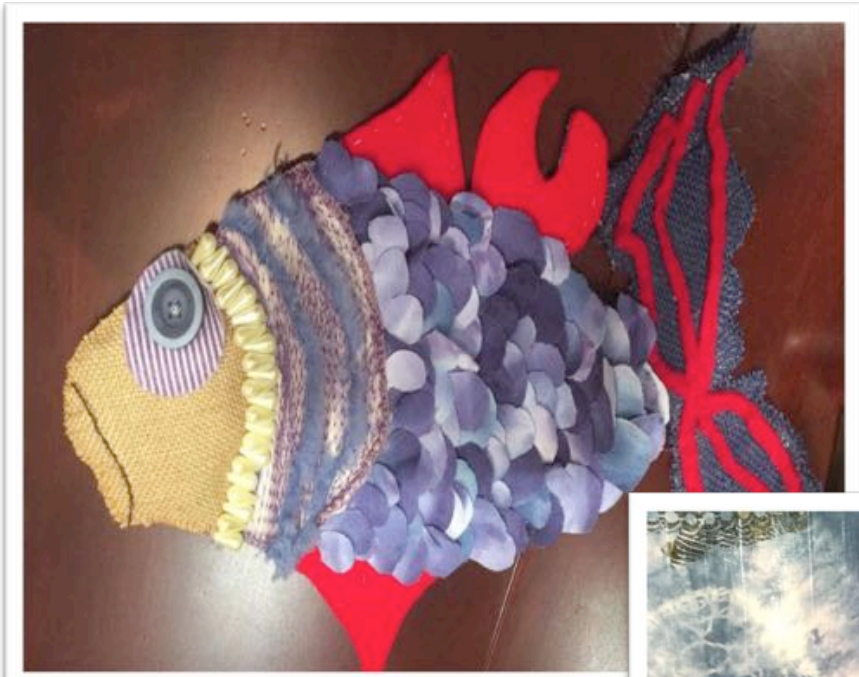


Each group of students choose a photo of a large Australian river fish to make and create. What is it? What river does it come from? How endangered is it? WWWWWH Draw it on a sheet of butcher's paper first. Make it large.

Then

Layout netting/ coat hangers/wool/ sheeting / lids/ scraps/ string/ recycled products, into the fish shape and put it together with wire/ string/ rope.





Hang the large fish created from the bamboo at the bottom section of the river mural
Create rocks and holes for the bottom of the river.
Perhaps make several large fish if there is time.

Then:

Look at the fish in the middle of the river. Use images again.
What are they?

Discuss: How endangered are they? What is happening for them right now in 2019? Look at videos of the Murray-Darling river. Spend some time exploring this....

WWWWW and H





Is this a problem in other rivers in Australia ? Why?

Discuss drought/ climate change / industry/tourism/overfishing/ floods/ fire etc., and the effect that these issues are having on Australia's rivers.

Get the students to explore one of these issues in relation to a particular Australian river that they have chosen, in more depth. Write a persuasive article for the local newspaper.

Then:

Create fish using at least 2 or 3 different printing techniques:

- Printing using foam cut outs.
- String printing



Print these fish in the middle section of the mural

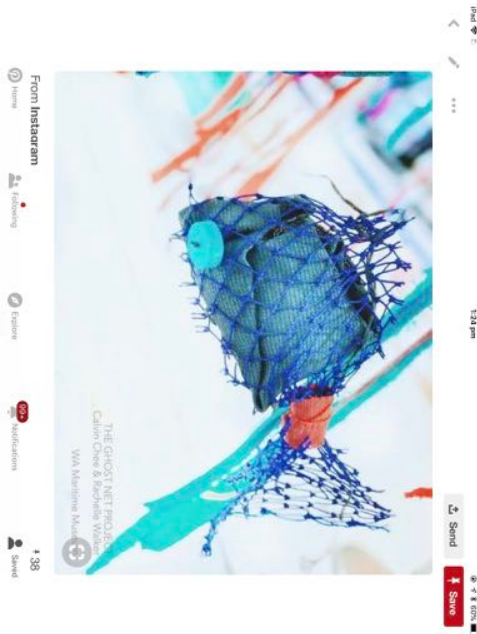


Make smaller or little fish at the top of the river using a variety of collage materials:
Once again: demonstrate a few different techniques. Coloured card and string, little fish stuffed with paper and stapled together, netting fish stuffed with material etc.,

WWWWWH

How endangered are these fish?

Hang these from the bamboo at the surface of the river mural.





Create a scene at the top of the river mural with coloured paint/ crayons: sandbanks, trees and mountains, sky and sun etc.,.



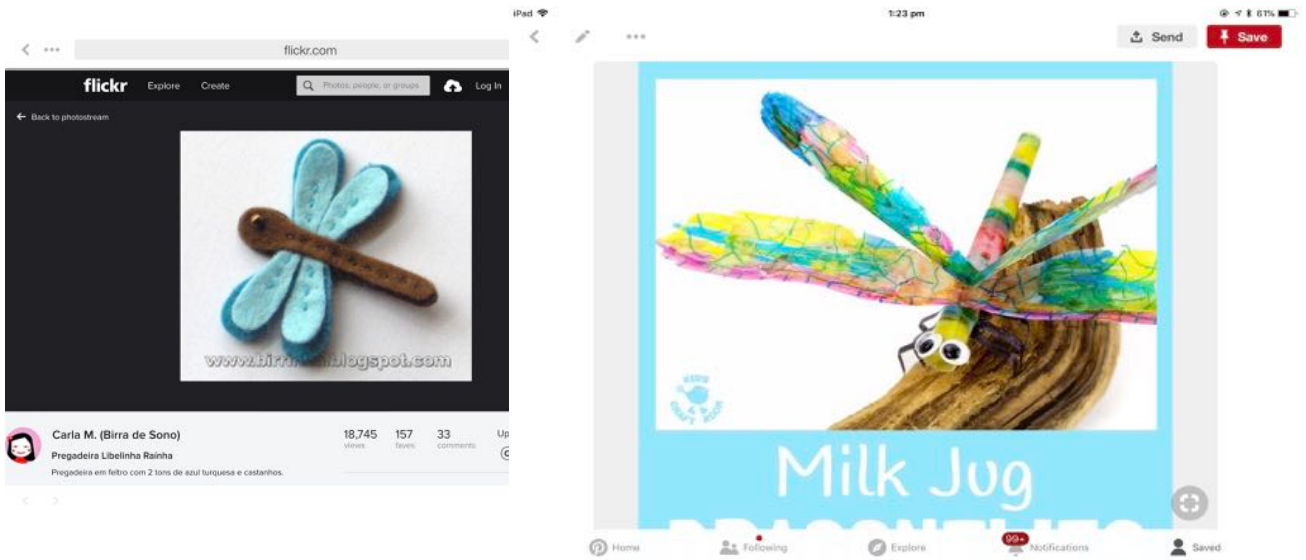
Then using plastic bottles and a variety of art and craft materials, tissue papers/ cellophane and crepe papers create dragon flies nymphs/ mosquitoes/ butterflies/ birds, more that live and feed on the surface of the river..... What is their food web? What are the dependent upon?

What body parts do these creatures have?

Look at microscopes and insects and flies collected on the Inquiry table again:

What do they have to have if we are looking like a scientist and creating like an artist?
What else?

How endangered are these creatures? What is affecting them?



Glue these or pin/ staple to the water surface at the top.



Going further: Exhibiting:

What do the students know about Australian rivers now?

Share River murals....

Then:

Student's present information learnt in a prezi or a powerpoint or a portfolio exhibition.
Share new discoveries with parents/ classmates.

Focus upon concluding with 5 new ideas about what the students think could be done to support the health of Australia's rivers for ever!!

