











River Detectives at a Distance

Theme: Urban Stormwater & Rural Runoff

Objective: To understand the impact stormwater/runoff can have on aquatic life, strategies to maximise waterway health and how to reframe stormwater as a resource.



Please adhere to all current COVID-19 advice, particularly for activities in orange. Make outings part of your daily exercise and work with others in your home or remotely by phone, zoom, facetime, etc

Ways to be Smart	Knowing . . . START HERE	Understanding	Applying	Analysing	Creating	Evaluating
 Word Smart I learn best by reading, writing & speaking	Use the Stormwater and Me sheet to brainstorm the topic before you begin on this learning journey. What is it, where does it go, what can be washed into waterways, what happens next? Add to the sheet as you work on this matrix.	 Get to know the lingo by completing Stormwater Words , a Stormwater Crossword , or the Stormwater Find-a-word .	Watch this video from Dubbo and this one from Canberra . Populate a table or spreadsheet to list pollutant types, where they come from, what impact they have on waterways and the positive strategies that can reduce them.	Watch these videos about microplastics in our streams and oceans . Illustrate and label a food chain or food web to explain how humans can unknowingly end up ingesting plastics.	 Download this enviro-story as inspiration to create your own Day in the Life Of story. Write and illustrate it, make a slideshow, create a comic strip, make a short film . . .	Very few people know about soft plastic recycling . Come up with a plan to spread the word. Design a flyer or poster, write an article for your school/community newsletter or lobby staff/school council to get your school/families involved.
 Number Smart I learn best by working with numbers/science	Take a walk and tally the types of litter you see at your school/ street/park/waterway/beach. Make a picture graph or bar graph to show the most common items. Tally the number of stormwater pits you find on your walk.	Work with an adult to do the From Your Street To Your Creek activity. Research the impact pollutants have on waterways and complete the sheet, Link It All Together .	 Complete some Brain Benders to calculate the size of the impact stormwater and runoff can have on our waterways.	Learn about Victoria's little-known soft plastic recycling program . Save soft plastics over several weeks and measure the volume of litter you have saved from landfill. Calculate the volume if every family in your street/school/town participated.	Design a simple factsheet to show how runoff and water quality are linked; sediment to turbidity or nutrients to phosphorus . Use the rating scale from your region, explain how contamination occurs and give solutions to reduce it.	Well vegetated stream banks and riparian verges can buffer the impact of surrounding land uses and filter potential pollutants, especially in rural areas. Conduct a habitat survey at your local waterway and rate it's health.
 Picture Smart I learn best by drawing and visualising	Visit " The Dirty Truth " website. Read the stormwater summary and watch the two video animations to learn more. Make a flyer to show three simple ways to keep stormwater clean. With an adult, do a letter box drop in your area.	Use these photos as an example or use photos of your own to understand the movement of water in your area. Draw a map with labels and direction arrows to demonstrate. Next time it rains, go outdoors to see how it plays out.	Save clean 'litter' from your household over a week; empty boxes, packets, containers, broken toys, old clothes, etc. Design and build a stylised model of an aquatic creature that can be impacted by stormwater pollution.	In rural areas, excess rainfall that flows over the land is called runoff. Use the riparian illustration to explore what natural and man-made materials might end up in a waterway if poor land management practices are employed.	People often confuse stormwater with treated wastewater. Explore this interactive graphic then use google images to research 'drain stencil' slogans and images. Design a stencil for your area to raise awareness of stormwater.	Hear inspiring stories of how stormwater is being harvested and repurposed in Fitzroy Gardens and Kingston . Illustrate a map/plan or make a model to show how and where this could be done in your community.
 Body Smart I learn best by being active and hands on	Photograph the 'pervious' and 'impervious' surfaces at your house/school/in your neighbourhood, the path water might take (down hills, into drains/pits/out of pipes) and where it might end up.	Watch a video about litter and platypus . Add drawings of aquatic creatures (don't forget water bugs) and other types of pollution to this poster . Insert speech bubbles to show the thoughts and feelings of creatures and plants.	Did you know that 90% of litter in a waterway sinks! What we see, is only part of the problem! With adult supervision complete Pollution On The Move to investigate how different pollutants behave in water.	Get active at your place, at school or in your local neighbourhood. Check with an adult first; pick up rubbish, sweep up sand/soil, rake up leaves, plant native grasses, plan a makeover to change a paved surface to a natural one, etc.	Study stormwater solutions; trash traps , sea bins , drain socks . Design your own invention to either reduce waste, clean up the streets or catch pollutants before they enter waterways. Sketch or build a prototype.	Devise an experiment to assess the permeability of surfaces; soil, sand, mulch, grass, pavers, etc. You could also test the amount of runoff when various quantities and flow rates of water are applied. Conduct and evaluate your results.
 People Smart I learn best by working with others	Do the Urban Stormwater Survey with people you know and discuss the answers with them. They may be very surprised by the things you can teach them. Ask them to tell you the most important thing they learnt.	Be a 'mythbuster' and explain to someone else why these facts aren't true; Stormwater is treated before it enters waterways, litter is the only thing that can be washed into waterways, stormwater is useless wastewater.	Work with others and use props if necessary to complete Activity A or C from the Dramatic Stormwater Scenes activity OR play 3R's Bingo by listing family and friends that fit each clue.	Play one of the games in the Bits and Pieces activity with your family. It will really get your brain thinking and demonstrate what you have been learning!	Watch one or all of these small , medium and long videos about ocean pollution. They can be confronting – discuss them with family/friends. Come up with some practical ways that you/your family can help.	Water sensitive urban design sees stormwater as an asset, not a problem. Watch this video , reframe your thinking about stormwater and use the innovative ideas to redesign a house, street or housing estate in your area.
 Self Smart I learn best by myself	Read the stormwater factsheet or watch this video for an introduction to Urban Stormwater. Check in with yourself. How do you feel about this topic so far . . . ? You may like to keep a journal to track your feelings during this theme.	Everyone is responsible for reducing stormwater pollution. What does your family do to prevent the three forms of stormwater pollution; organic, chemical and litter? What could you do better / differently?	Research the time it takes for various materials to biodegrade. Display your findings on a timeline. You might even like to set up a long term experiment, burying various items in your garden and digging them up after 6 or 12 months.	 Show your creative thinking skills by completing a Brain Booster . Devise some brain boosters for your friends and family.	The best way to prevent litter in waterways is to stop producing it in the first place. Analyse yourself as a consumer and the packaging you bring into your home. Create a plan to cut down or cut out your rubbish production.	Consider these innovative ideas; trash traps , sea bins , drain socks , soundscapes , litter trackers , rain gardens and stormwater stencils . Do a 'PMI' listing the positives, negatives and interesting points about each approach.

For this matrix it is best to start with an activity in the 'Knowing' column first.

Send your efforts to your teacher and it may be shared in the school newsletter or on the Billabong Banter tab of www.riverdetectives.net.au Make sure you have permission from parents first.