












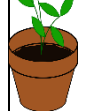






River Detectives Activity Matrix

Theme: Water Cycles and Water Quality

Objective: To appreciate water as a precious, finite, cyclic resource and develop knowledge and skills to monitor water quality

Please adhere to all current COVID-19 advice and ensure you have teacher/parent permission/supervision before heading out near waterways for any of these activities

Ways to be Smart	Knowing	Understanding	Applying	Analysing	Creating	Evaluating
 <p>Word Smart I learn best by reading, writing & speaking</p>	Learn about the water quality elements we test each month by reading fact sheets on salinity , turbidity , phosphorus and pH . Can you explain each element in your own words?	 <p>Water is a non-renewable resource. Watch this video as people learn this little-known fact and then watch these videos (F-2) or this video to learn how the earth's water is recycled.</p>	Watch the amazing Rhythm of the Rain story then think about where the rain that falls on your home or school may travel. Research your catchment and where water flows, joins with other water and ends up.	Watch this story Water is Water about the different states of water then explore it yourself with this science experiment . Record your results here . Write a recount of a memorable time when you've experienced one of the states.	 <p>Read or watch When Water Lost Her Way and then write your own journal, story or poem about the journey of a drop of water or a day in the life of an aquatic plant / animal impacted by water quality.</p>	Humans may be clever but we cannot make water – or can we? Watch this desalination video and evaluate the pros and cons. Conduct a class debate about the merit of boosting supply this way.
 <p>Number Smart I learn best by working with numbers/science</p>	Research the equipment and units of measurement for each water quality test using the fact sheets above. List other equipment and units of measurement; how do we measure speed, rainfall, weight, height, distance, time, etc. . . .	 <p>Practise using your water quality kit and mix up different salt or turbidity solutions to test. How much salt or sediment is needed to achieve each category on your region's rating scale?</p>	Determine the water quality of your waterway by comparing the result of each test to your region's rating scale . Enter your data into the River Detectives website with your teacher's permission and login details then move below ↓	There is A LOT of water on earth but not all of it is available to us. Study the numbers by watching the first 1m20s of this video (F-6) or this video (7-12). How does this make you feel? Devise a way to share this knowledge with others.	Learn about rain – how we catch it, store it and clean it – to make our beautiful drinking water. Watch this video then have a go at making your own water filter and use this worksheet to record your results.	 <p>Use this map to compare / contrast your results to other sites up or downstream on your waterway, to other waterways within the region or from across the state. Why do results vary?</p>
 <p>Picture Smart I learn best by drawing and visualising</p>	 <p>Use what you know about the water cycle to fill in and decorate this water cycle chart. You could also do this water cycle word find or make up your own crossword.</p>	Design and illustrate your own water cycle chart and keep adding more details to it as you learn new things by doing activities on this matrix. This poster may inspire you.	Tell others in your class, family, school or local community about the health of your waterway by filling out the ' month at a glance ' chart or designing your own poster / graphic. Move to the right →	 <p>Keep annual records with this 'year at a glance' chart, graph results, calculate averages and analyse patterns. Or for immediate data test a variety of water samples on the same day.</p>	Watch this video to learn about the impact of livestock on the erosion, turbidity and phosphorus of our waterways then learn how farmers can make a difference. Draw your own farm plan and design how it can be managed sustainably.	Watch videos about Aboriginal perspectives of water . Draw a mind map of the way water is viewed by traditional owners. Draw another to illustrate the contrast to western viewpoints?
 <p>Body Smart I learn best by being active and hands on</p>	 <p>Enjoy this 5min relaxing water cycle meditation or a 13min water cycle yoga session. It will feel great and help you explore and understand this concept by using your body.</p>	Get to know your water quality kit with this video then head to your school's test site with an adult. Collect a sample, complete site observations in sections 1 and 3 of the data sheet then see right →	On site or back at school watch demonstrations of each test before having a go yourself; temperature , salinity , turbidity , phosphorus and pH . See two boxes above ↑ or one below ↓ to move to the next step.	Get busy and make a rain gauge to learn why tracking rainfall can help inform your water quality testing. Predict, keep, graph and analyse rainfall records – do they correlate with or influence WQ results?	 <p>Watch this water cycle rap and learn it – maybe even perform it! Write your own song/rap or choreograph a water cycle dance or dramatisation . . .</p>	What can YOU do to save our precious water or help keep our waterways healthy? Take shorter showers, plant native plants, fix leaking taps, pick up rubbish, make a frog bog or something else ? Make a plan and convince others.
 <p>People Smart I learn best by working with others</p>	With others, list the reasons why good quality water is important in your lives (health, recreation, culture, farming, plants, animals, industry, transport, etc). Display them as a list, with pictures, with objects or in role play.	Contact your regional River Detectives coordinator to be connected with a local Waterwatch volunteer. Interview them about why they choose to test water quality each month and what they have learnt about their waterway.	After learning how to test for water quality (above), teach someone else how to do it; a friend, a younger student, a family member, a teacher, a community member. Do this in person, write instructions or create an illustrated flow chart.	Get together with your friends and an adult and use pH strips to test the acidity or alkalinity of common household items on the pH scale . We do not recommend testing highly acidic or alkaline substances unless supervised and wearing PPE.	 <p>Gather your friends and enjoy doing a science experiment together to learn how plants can 'drink' water in the water cycle. Record your results here.</p>	The urban water cycle is very important to our daily lives. Learn about it here . Have friends source similar videos from other Victorian water authorities. Compare and contrast the innovative approaches they are taking.
 <p>Self Smart I learn best by myself</p>	Watch this reading of the picture story Water Is Water then keep a journal over a day or week of the various forms you see water and all the ways you use water in daily life. Write, draw or take photos.	Sometimes we only appreciate water when we experience an extreme event. Watch a reading of picture story books Drought , Flood and Fire and reflect on your own experience of events such as these.	 <p>Model and experiment by making the water cycle in a bag! Instructions and the labels you'll need are here.</p>	Watch this animation or this video about the River Detectives program, reflect on your own experience and list the positive, negative and interesting aspects of being involved.	 <p>Water can be locked underground. Try this fun and yummy activity at home to make an edible aquifer and learn more about the water table and how it works.</p>	 <p>Explore three interactive online games to learn about the natural water cycle, the urban water cycle and water sources.</p>

For students; 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.
For teachers; This matrix is a springboard of inspiration to engage students of all ages, abilities and learning styles. Feel free to simplify, extend or adapt the activities in any way to suit your unique situation.