LEARNING in the OUTDOORS

IN WATER BASED ENVIRONMENTS

TOOLKIT 3

TEACHER TOOLKIT SCHEDULE

Outdoors Victoria, in partnership with the Australian Council for Health, Physical Education and Recreation (ACHPER Victoria), Environment Education Victoria (EEV), Geography Teachers Association (GTAV) and Parks Victoria (Parks Vic) will produce 15 Teacher Toolkits between 2018 and 2020. These toolkits will be delivered to the following order:

2018

1 Introduction to Outdoor Learning
2 Outdoor Learning in the Play Ground
3 Outdoor Learning in Water-Based Environments

2019

4 Outdoor Learning in Physical Education
5 Outdoor Learning in Art
6 Outdoor Learning in Geography
7 Outdoor Learning in Science
8 Outdoor Learning in Mathematics
9 Outdoor Learning in Urban Environments

2020

10 Outdoor Learning in Health
11 Outdoor Learning in Sustainability
12 Outdoor Learning in History
13 Outdoor Learning in Reading & Writing
14 Outdoor Learning in Speaking & Listening
15 Outdoor Learning in Indigenous Activities

Outdoors Victoria, in partnership with ACHPER (Victoria), EEV, GTAV and Parks Victoria, are always interested in finding out what is occurring in the outdoors in your school.

If you are proud of a new program you have implemented or would like to be involved in, or contribute to any of the Teacher Toolkits, contact any of the above organisations. (Contact details are provided on the final page of this document)

Outdoors Victoria, in partnership with ACHPER (Victoria), GTAV, EEV and Parks Victoria, respectfully acknowledges the Traditional Custodians of the land and their Elders past and present, for the important and enduring role that Aboriginal and Torres Strait Islander peoples play in Australia regarding the land, water and sky used for learning in the Outdoors.

LEARNING IN THE OUTDOORS

IN A WATER BASED ENVIRONMENT

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This Teacher Toolkit is offered as a framework for developing your own curriculum specific ideas and activities for Outdoor Learning. It is quite flexible and should be adapted to suit your needs. Remember to note the benefits of Outdoor Learning in your teaching area, and to provide tips wherever you can for embedding Outdoor Learning into the curriculum. Include relevant research, case studies and examples that might assist teachers. Teacher Toolkit 1 Benefits of Outdoor Learning presents research that will help you argue the case for taking students out of the classroom.

Outdoor Learning in a Water Based Environment

This Teacher Toolkit will be looking at the opportunities for integrating Outdoor Learning in water-based environments. Teachers surveyed in the planning stages of these documents expressed apprehension about taking students to water-based environments.

In this Teaching Toolkit, we provide sample activities which use minimal equipment and have a quick setup time. As for all activities in the toolkits, it is important to survey your environment carefully, to ensure it is safe and appropriate for students. Some important factors to consider include weather, water flow direction and depth. staff experience/qualifications, Staff to student ratios and location to name a select few. Refer to the Department of Education Safety Guidelines for staff qualifications and ratios to student numbers for water activities.

Outdoor Learning in a water-based environment does not mean necessarily going swimming in a local pool. In which case you would have to comply with Guidelines. It may include activities such as creek hikes, bug exploration, painting and small raft building or even using the rain.

Remember that rain can trigger good conversations about safety. You may need to have a safety chat at the start of every rainy session. For example; steep hills, banks, and grass can become slippery.

Outdoor Learning activities are only limited by your imagination. We hope the activities described below will inspire you to explore further.

Do you have a great activity that you would like to share?
Please feel free to email **outdoorlearning@outdoorsvictoria.org.au** with any suggestions.

These Teacher Toolkits would not be possible without the wonderful support of many practising teachers willing to share their favourite ideas and activities.

ACTIVITY 1

Creek Hikes

Depending on the location and accessibility, creek hikes are a fantastic way for students to start exploring a water environment.

This activity can be structured or unstructured, depending on your ease and experience.

Set guidelines and boundaries for the Creek Hike. Make it clear where students can walk if they need a partner or a group, what to do if someone walks away from the group and so on.

Once guidelines are set, students can start exploring the environment with 'different lenses'. It may be with a scientific lens - is the water healthy, is it low or high? An English lens could lead to writing and reading about the water.

Clean Up Australia Day events focus on the health of Australian creeks and rivers. Find out when such events are held near your school.

Equipment & Materials

The particular lens you put on the Creek Hike will determine the equipment you need. Make sure you have a first aid kit with you.

Other equipment might include;

- Drawing materials,
- Diaries,
- Storybooks,
- Cameras,
- Thermometers and water sampling kits.

Curriculum Outcomes

F-2

- Living things have a variety of external features and live in different places where their basic needs, including food, water and shelter, are met (VCSSU042)
- People use science in their daily lives (VCSSU041)

3-4

- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Participate in guided investigations, including making observations using the senses, to explore and answer questions (VCSIS051)

5-6

- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)

Additional Resources:

Exploring for Creek Creatures (Youtube): https://www.youtube.com/watch?v=Z7u7FnQ6jbQ
ABC: River Kids Special: http://www.abc.net.au/btn/campaigns/river-kids-special/10559652
Exploring and Connecting with Nature: https://wehearyou.acecqa.gov.au/2016/07/20/exploring-and-connecting-with-nature/
ABC: Children Playing Outdoors: https://www.abc.net.au/news/2011-08-30/children-playing-outdoors-feature/2862558

ACTIVITY 2

River Detectives

River Detectives is an education program initiative of Catchment Management Authorities that supports teachers and leaders to get young people connecting to their local waterway.

Schools and youth community programs can apply to be a part of the program. If successful, your group can borrow a water monitoring kit, the teacher/leader can attend training sessions and can access more activities, resources and an interactive data recording portal on the website below. Spaces in the River Detectives program are limited. To apply, complete the form on the *River Detectives* website.

It has hundreds of activities that can be used without being an affiliate school. There are maps, colouring sheets, field manuals and board games that can be used for learning in a river-based environment.

Equipment & Materials

Look at the activities on the websites below. You may be able to purchase or make equipment shown if you don't access it from the formal program.

Curriculum Outcomes

F-2
- Natural, managed and constructed features of places, their location and how they change (VCGGK068)
- Reasons why some places are special and some places are important to people and how they can be looked after (VCGGK069)

3-4
- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)

5-6
- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)

Additional Resources:

River Detectives - Teacher Resources: https://www.riverdetectives.net.au/resource-river-bank/topics/
River Detectives - Explore the State: https://www.riverdetectives.net.au/explore-the-state/
Exploring for Waterbugs (Youtube): https://www.youtube.com/watch?v=dD9KCO636xc&feature=youtu.be
Waterbugs High Level Key: https://www.riverdetectives.net.au/wp-content/uploads/2018/08/Waterbugs-ALT-higher-level-key.pdf

ACTIVITY 3

Boat Building

This activity is a simple but effective one that students traditionally love. It can be delivered in a variety of ways - two common ones are described here.

Students design and build their boats out of sticks and leaves then float them down the watercourse.

If you are unable to use your river or creek for this activity, you could create your watercourse.

Students decide on, then find the objects they need, such as leaves, sticks and bark, then build their boat without explicit instructions. Younger children might need guidance for this.

Once the boats are created, you might add your focus like flotation and stability or set targets like getting past a particular rock.

You may also wish to use or create a restricted area in which to collect all the boats at the end of their journeys.

Equipment & Materials

The most common equipment and materials needed for this task are sticks, leaves, bark. It is important that you do not use materials that can be harmful to the environment.

Curriculum Outcomes

F-2
- Explore how technologies use forces to create movement in designed solutions (VCDSTC014)
- Objects are made of materials that have observable properties (VCSSU044)
- The way objects move depends on a variety of factors including their size and shape: a push or a pull affects how an object moves or changes shape (VCSSU048)

3-4
- Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)
- Compare results with predictions, suggesting possible reasons for findings (VCSIS070)

5-6
- Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (VCDSTC037)

Additional Resources:

How to build a boat: https://inspirationlaboratories.com/how-to-build-a-boat/
Boat craft ideas: https://www.redtedart.com/boat-craft-ideas-for-summer/
Boat building challenge: https://www.wikkistix.com/lesson-plans/stem-mayflower-boat-building-challenge/

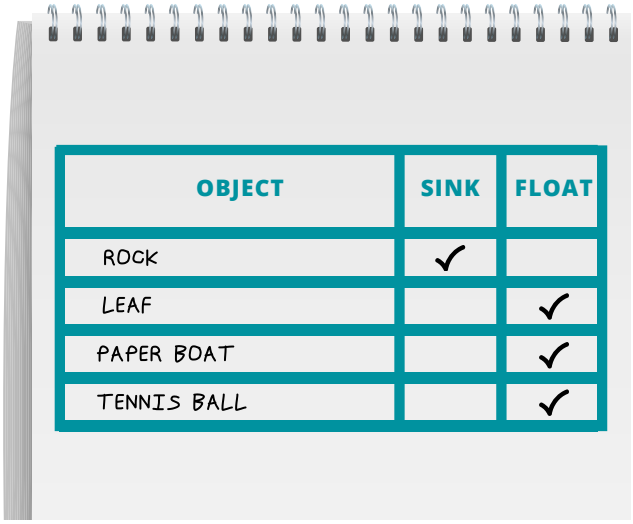
ACTIVITY 4

Float or Sink?

Ask your students to gather a range of objects and write down what they have found.

Then ask them to predict what the objects will do when dropped into water.

Then in a controlled manner, drop the objects one by one and see what they do.



OBJECT	SINK	FLOAT
ROCK	✓	
LEAF		✓
PAPER BOAT		✓
TENNIS BALL		✓

Equipment & Materials

A range of objects can be used for this, including sticks, pebbles, leaves, grass.

It is important to ensure that the objects are safe to be left in the waterway or easily retrieved.

Curriculum Outcomes

F-2
- Collect and record geographical data and information from the field and other sources (VCGGC060)
- Represent data and the location of places and their features by constructing tables, plans and labelled maps (VCGGC061)

3-4
- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)

5-6
- Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (VCDSTC037)

Additional Resources:

Science Curriculum - Float or Sink?: https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/science/continuum/Pages/floatsink.aspx
Float Or Sink (Youtube): https://www.youtube.com/watch?v=eQuW8G2QV_Q
Why do objects sink or float?: https://www.aitsl.edu.au/tools-resources/resource/why-do-objects-sink-or-float-illustration-of-practice

ACTIVITY 5

Relay Race

This activity is simple but effective and a great opportunity to challenge students' thinking skills.

Step 1: Divide the class into teams

Step 2: You need two buckets per team, 10 meters apart, with a clear space in the middle. The bucket at the start is full of water, the other at the end is empty.

Step 3: Each team has a cup with holes in it. Teams start the full bucket of water. One at a time they scoop water from the full bucket, transfer it to the empty one, then return the cup to the next team member.

The team which has the most water in the bucket being filled is the winner.

Variations to try:

- Students carry the cups above their heads.
- Rather than running in teams, run against the clock.

Equipment & Materials

For this activity, you will need:
- 2 buckets per team
- 2 cups with holes per team
- An open space

Curriculum Outcomes

F-2
- Explore the characteristics and properties of materials and components that are used to create designed solutions (VCDSTC017)
- Consider personal reactions to situations or problems and how these reactions may influence thinking (VCCCTQ002)

3-4
- Investigate a range of problem-solving strategies, including brainstorming, identifying, comparing and selecting options, and developing and testing hypotheses (VCCCTM020)

5-6
- Experiment with alternative ideas and actions by setting preconceptions to one side (VCCCTQ022)
- Investigate how ideas and problems can be disaggregated into smaller elements or ideas, how criteria can be used to identify gaps in existing knowledge, and assess and test ideas and proposals (VCCCTM031)

Additional Resources:

Water bucket relay game: https://tipjunkie.com/projects/water-bucket-relay-game-for-kids/
Sponge relay: http://www.ultimatecampresource.com/site/camp-activity/sponge-relay.html

ACTIVITY 6

Water Paint

Students paint with full-sized paint brushes but instead of paint, they use water. They paint on dirt, concrete or a solid path.

Challenge students to draw the river, or a place outdoors they enjoy.

Instead of water, use Magic Paint. To make Magic Paint, dissolve large bits of chalk in a pot of water or a puddle.

Make sure you are far enough away from local waterways to ensure no pollution occurs.

Equipment & Materials

- Water
- Chalk
- Paint brushes
- Stiff brush to erase chalk

Curriculum Outcomes

F

- Explore ideas, experiences, observations and imagination to create visual artworks (VCAVAE017)
- Experiment with different materials and techniques to make artworks (VCAVAV018)
- Create and display artworks (VCAVAP019)
- Respond to visual artworks and consider where and why people make visual artworks (VCAVAR020)

1-2

- Explore ideas, experiences, observations and imagination and express them through subject matter in visual artworks they create (VCAVAE021)
- Experiment with different materials, techniques and processes to make artworks in a range of art forms (VCAVAV022)
- Create and display artworks to express ideas to an audience (VCAVAP023)

3-4

- Explore ideas and artworks from different cultures and times as inspiration to create visual artworks (VCAVAE025)
- Explore visual conventions and use materials, techniques, technologies and processes specific to particular art forms, and to make artworks (VCAVAV026)

5-6

- Explore visual arts practices as inspiration to create artworks that express different ideas and beliefs (VCAVAE029)
- Select and apply visual conventions, materials, techniques, technologies and processes specific to different art forms when making artworks (VCAVAV030)
- Create and display artwork considering how ideas can be expressed to an audience (VCAVAP031)

Additional Resources:

How to paint with watercolour (Youtube): https://www.youtube.com/watch?v=ye23IkKlc-4
Watercolour techniques for kids: https://artfulparent.com/watercolor-techniques-ideas-kids/

ACTIVITY 7

Water Hunt

This is a water-based activity that does not require being in a water-based environment but uses aspects of water to educate students.

Step 1: Gather some small plastic bugs and then freeze these items in ice cubes.

Step 2: Once the cubes are frozen place the items into students' sensory boxes and utilising a squirt bottle/dropper or a bucket of water.

Challenge the students to try and melt the ice cubes and unfreeze the objects hidden inside. This activity challenges the students to come up with ways to melt the ice using problem-solving skills.

Equipment & Materials

This activity requires a range of small objects (Ideally plastic bugs) and the ability to freeze the objects (Freezer / Fridge).

To unfreeze the objects a squirt bottle/dropper or a bucket of water are common objects used.

Curriculum Outcomes

F-2
- Objects are made of materials that have observable properties (VCSSU044)
- Everyday materials can be physically changed or combined with other materials in a variety of ways for particular purposes (VCSSU045)

3-4
- A change of state between solid and liquid can be caused by adding or removing heat (VCSSU059)

5-6
- Solids, liquids and gases behave in different ways and have observable properties that help to classify them (VCSSU076)

Additional Resources:

Frozen water activities: https://theimaginationtree.com/?s=freeze

ACTIVITY 8

Water Bowls

This is a great activity to teach students about wildlife in the Australian environment.

Using a range of materials which might be found natural objects or manufactured ones, students design and create drinking containers for the local wildlife. These can be put in the school ground or near a dry watercourse.

This activity teaches students to always consider and respect our local wildlife and that birds and other animals may not always have access to water on a warm day.

Students can come up with their patterns, shapes and designs and over the course of a unit create the water bowls.

Equipment & Materials

Depending on how you structure this activity will affect the required equipment, normal equipment includes sticks, bark, glue, wooden bowls, twine and rope.

Curriculum Outcomes

F-2

- Identify how people create familiar designed solutions and consider sustainability to meet personal and local community needs (VCDSTS013)
- Explore the characteristics and properties of materials and components that are used to create designed solutions (VCDSTC017)

3-4

- Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (VCDSTC027)
- Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to create designed solutions (VCDSCD028)
- Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (VCDSCD029)
- Select and use materials, components, tools and equipment using safe work practices to produce designed solutions (VCDSCD030)

5-6

- Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (VCDSCD038)
- Generate, develop, communicate and document design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (VCDSCD039)
- Apply safe procedures when using a variety of materials, components, tools, equipment and techniques to produce designed solutions (VCDSCD040)

Additional Resources:

DIY Self Filling waterbowl: https://www.youtube.com/watch?v=GG8saybSsF8

ACTIVITY 9

Mudfaces

This learning experience helps develop communication and exploratory skills. And it's good fun. It offers an opportunity to explore mud textures while creating portraits or drawings of the local environment.

Ask students to collect mud and add different amounts of water to create a range of textures.

Then collect various natural loose objects. Now sculpt or model mud faces.

You could run theme days with this activity, making Superheroes or Parents - the possibilities are endless.

Equipment & Materials

For this activity, all you need is lots of mud, sticks and natural loose objects.

Curriculum Outcomes

F
- Explore ideas, experiences, observations and imagination to create visual artworks (VCAVAE017)
- Experiment with different materials and techniques to make artworks (VCAVAV018)

1-2
- Explore ideas, experiences, observations and imagination and express them through subject matter in visual artworks they create (VCAVAE021)
- Experiment with different materials, techniques and processes to make artworks in a range of art forms (VCAVAV022)

3-4
- Explore visual conventions and use materials, techniques, technologies and processes specific to particular art forms, and to make artworks (VCAVAV026)

5-6
- Explore visual arts practices as inspiration to create artworks that express different ideas and beliefs (VCAVAE029)

Additional Resources:

Mud painting for kids: https://handsonaswegrow.com/mud-painting/
Mud painting: A steam activity for kids: https://innovationkidslab.com/mud-painting/

ACTIVITY 10

Rainy Day / Water Box

Many schools are not located within proximity to a water-based environment and instead, teachers utilize the rain as an opportunity to educate students about water. In the past when it rains teachers have had a rainy-day box that includes colouring pens and pencils along with word searches if the weather did not permit students going outside. Instead of adopting this approach teachers can create a rainy-day box that encourages students to go outside and interact with the environment.

Within this box you could have watercolours (using the rain to dip your paintbrush in), greaseproof water to paint on. Foils to make streams with, half-cut plastic bottles to catch rain in. Sponges to soak the water up in or reusing bubble wrap to rest the materials when wet/ making pools of rain when looking at the water cycle.

Equipment & Materials

The equipment needed varies significantly but may include watercolours, greaseproof paint, foils, plastic bottles and sponges.

Curriculum Outcomes

F

- Explore ideas, experiences, observations and imagination to create visual artworks (VCAVAE017)
- Experiment with different materials and techniques to make artworks (VCAVAV018)
- Create and display artworks (VCAVAP019)
- Explore how technologies use forces to create movement in designed solutions (VCDSTC014)

1-2

- Explore ideas, experiences, observations and imagination and express them through subject matter in visual artworks they create (VCAVAE021)
- Experiment with different materials, techniques and processes to make artworks in a range of art forms (VCAVAV022)
- Create and display artworks to express ideas to an audience (VCAVAP023)

3-4

- Explore ideas and artworks from different cultures and times as inspiration to create visual artworks (VCAVAE025)
- Explore visual conventions and use materials, techniques, technologies and processes specific to particular art forms, and to make artworks (VCAVAV026)

5-6

- Explore visual arts practices as inspiration to create artworks that express different ideas and beliefs (VCAVAE029)
- Select and apply visual conventions, materials, techniques, technologies and processes specific to different art forms when making artworks (VCAVAV030)
- Create and display artwork considering how ideas can be expressed to an audience (VCAVAP031)

Additional Resources:

Rainy day activities: https://www.kidspot.com.au/things-to-do/activity-articles/a-rainy-day-activity-box/news-story/aa33e23461703655d8cd42ea6a38edf5

ACTIVITY 10

Natural Treasures/ Invertebrates

This is a series of activities that students can do over a course of several visits to a water environment. During the first visit, ask students to find three natural treasures, for example, sticks, rocks, clay, shells. Each child shares one of the treasures with a partner and describes its colour, shape and texture, what they like about it and what makes it a treasure.

Once they have done this, they choose their favourite one of the three objects and create a visual art display in the gravel or grass. This becomes an Art Exhibition where each student gets to talk about their object and discuss their creation.

For the next visit to the water environment, students are given a worksheet illustrating and naming five invertebrates. (This part of the activity matches the grade level of students), In groups, students must try to find the five creatures and sketch others they find in their booklets. Older students could describe or draw the habitat of each creature

Equipment & Materials

- Worksheet
- Note pad
- Pencils

Curriculum Outcomes

F-2
- People use science in their daily lives (VCSSU041)
- Objects are made of materials that have observable properties (VCSSU044)

3-4
- Living things can be grouped on the basis of observable features and can be distinguished from non-living things (VCSSU057)

5-6
- Select and apply visual conventions, materials, techniques, technologies and processes specific to different art forms when making artworks (VCAVAV030)

Additional Resources:

Invertebrate Animals (YouTube): https://www.youtube.com/watch?v=rzxFTrktN1c
What are invertebrates?: https://www.ducksters.com/animals/invertebrates.php

ACTIVITY 11

Make a River

This activity can be conducted in a variety of ways depending on the age of the students. (This can be done by a stream)

Use foil to make streams and connect streams. You will need two or more rolls of foil (which can be used later). Stretch a long piece of foil out and talk about where it should go (in the way the water runs)

Fold up the sides of the foil sheet. Use buckets and cups to fill the foil stream bed. Challenge students to get the water to flow from one end of their 'streams' to the other.

You might need to explain or allow children to discover that water does not flow uphill. What other characteristics of water flow can they discover?

Remember to point out the potential risks of using foil.

Equipment & Materials

- Two or more rolls of foil
- small cup or container
- spoons

Curriculum Outcomes

F-2

- Natural, managed and constructed features of places, their location and how they change (VCGGK068)
- Definition of places as parts of the Earth's surface that have been given meaning by people, and how places can be defined at a variety of scales (VCGGK064)

3-4

- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Earth's surface changes over time as a result of natural processes and human activity (VCSSU062)

5-6

- Impacts of bushfires or floods on environments and communities, and how people can respond (VCGGK095)
- Environmental and human influences on the location and characteristics of places and the management of spaces within them (VCGGK096)

Additional Resources:

Make a river!: https://www.pinterest.com.au/pin/134826582577590507/

ACTIVITY 12

River Rock Mystery

This activity is a great one for students to get hands-on in the natural environment. The activity is designed to shows how smooth, well-rounded stones in riverbeds have ended up where they are.

Ask students to pick up several different stones from the river and place them into a bucket. Ask students to imagine the journey these stones have had to make it downstream and discuss why they are more rounded than other stones.

Once students have found some smooth rocks, help the students follow or imagine their trail and suggest how the stones got to the river and where they came from. Go to different streams, look at rocks and gravel in the school ground and suggest why the rocks might be different.

Equipment & Materials

For this activity, all you need is a variety of rocks and stones.

Curriculum Outcomes

F-2
- Natural, managed and constructed features of places, their location and how they change (VCGGK068)
- Reasons why some places are special and some places are important to people and how they can be looked after (VCGGK069)

3-4
- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)

5-6
- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)

Additional Resources:

Rock Detective (YouTube): *https://www.youtube.com/watch?v=tNs1gqkYerg*

ACTIVITY 13

What's in the river?

This is a continuation of the previous activity.

Dig a shallow hole into the dirt or gravel at the bottom of the water and fill the bucket so it contains gravel, stones and river water.

Bring the bucket back to land then ask students to scoop a cupful of the dirt and water onto a piece of mesh or cloth that allows the water to filter through,

Ask students what they see. They may not see anything straight away, but a small watery world will slowly appear as they start to dig deeper

Equipment & Materials

- a bucket
- mesh/cloth.

Curriculum Outcomes

F-2
- Natural, managed and constructed features of places, their location and how they change (VCGGK068)
- Reasons why some places are special and some places are important to people and how they can be looked after (VCGGK069)

3-4
- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)

5-6
- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)

Additional Resources:

Lake & River Activities: https://lifestyle.howstuffworks.com/crafts/seasonal/lake-and-river-activities1.html

ACTIVITY 14

Pond Dipping

Students can make their dip net a or use ready-made ones.

To make a net:

Step 1: Bend a stiff wire coat-hanger to the shape of a D, leaving the hook in the middle of the straight part of the D.

Step 2: Straighten the hook and use heavy wood staples to fasten the straightened hook to the end of a broomstick. Fold the wire back over the last staple and wrap in waterproof tape.

Step 3: Measure the distance around the wireframe and cut cloth that width, sew the ends together into a tube. Stitch one end of the tube shut and sew the open end of the tube to the frame by turning the edge over the frame and then stitching the fabric to itself.

Equipment & Materials

- Wire coat Hangers
- Waterproof tape
- Staples
- Tubes
- Cloth

Once you have created your dip nets you have lots of options. Slowly move the net through the water, stop now and then and place the contents of the nets into water-filled buckets. After you have done several nettings, stop and have students examine their specimens. Once completed, return the water and specimens into the river.

Curriculum Outcomes

F-2
- Living things have a variety of external features and live in different places where their basic needs, including food, water and shelter, are met (VCSSU042)
- Living things grow, change and have offspring similar to themselves (VCSSU043)

3-4
- Living things can be grouped on the basis of observable features and can be distinguished from non-living things (VCSSU057)
- Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)

5-6
- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)
- The growth and survival of living things are affected by the physical conditions of their environment (VCSSU075)

Additional Resources:

Lake & River Activities: https://lifestyle.howstuffworks.com/crafts/seasonal/lake-and-river-activities4.htm

ACTIVITY 15

Water Monitoring

This activity has been created by Environment Australia to encourage students to check on the health of the local waterways with an easy to use the tool.

Use the online fact sheet located at: **http://nrmonline.nrm.gov.au/downloads/mql:2879/content**

Navigate to page 2 to find out how to conduct a rating on your local waterway, looking at key features such as land use, litter, pipes and drains, extra structures/modifications, smell and invertebrate life.

Once you have completed the analysis you will be able to look at what this equates to ?? and look at the steps your class can take to change this rating.

Equipment & Materials

Worksheet printed from NRMonline

Curriculum Outcomes

F-2
- People use science in their daily lives (VCSSU041)
- Observable changes occur in the sky and landscape; daily and seasonal changes affect everyday life (VCSSU046)

3-4
- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)

5-6
- Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)

Additional Resources:

Rating your local waterways: http://nrmonline.nrm.gov.au/downloads/mql:2879/content

ACTIVITY 16

Catchments Explained

Students will create their miniature catchment using a combination of soil, sand and gravel. Pile up some high areas to form hills and mountains and then dig some trenches and holes to create the rivers, ponds and lakes.

Using a watering can, you can demonstrate the waterfall and its effects on the simulated catchment area. Then discuss the water's behaviour as it flows down through the catchments. Does it flow down the side of the mound? If not, where is it going? What does this tell us about rainfall and our ability to catch it for human use?

Extension Idea:

As an extension, add a section of turf or plants to the mound to illustrate the effects they have on water flow and erosion.

Equipment & Materials

- Sand
- Gravel
- Grass
- Sticks
- Soil

Curriculum Outcomes

F-2

- Identify and describe the features of places at a local scale and how they change, recognising that people describe the features of places differently (VCGGC057)
- Collect and record geographical data and information from the field and other sources (VCGGC060)
- Represent data and the location of places and their features by constructing tables, plans and labelled maps (VCGGC061)

3-4

- Identify and explain the interconnections within places and between places (VCGGC073)
- Represent data and the location of places and their characteristics by constructing tables and simple graphs and maps of appropriate scale that conform to cartographic conventions of border, scale, legend, title and north point (VCGGC075)

5-6

- Represent the location of places and other types of geographical data and information in different forms including diagrams, field sketches and large-scale and small-scale maps that conform to cartographic conventions of border, scale, legend, title, north point and source; using digital and spatial technologies as appropriate (VCGGC089)

Additional Resources:

Water Educators Toolkit: http://www.awa.asn.au/documents/Water_Educators_Toolkit_2016_web.pdf

ACTIVITY 17

Catchments Visitation

As an extension activity, contact your local reservoir manager and enquire if student tours are possible. Find out how far the water must travel before it reaches their homes., and how it gets there. Find out how much water is needed to supply cities and town with drinking water.

While on the tour, students can look for water features like farm dams, tanks, creeks, and rivers, the effects on the waterways of human influences, like agriculture, industry, feral animals, weeds, and how natural features like rocky outcrops, roadside vegetation, native plants and animals affect water flow.

Make sure you observe staffing requirements and have permission forms and approval of the local water authority.

Equipment & Materials

This activity would require appropriate staff to student ratios, permission forms and approval by the local water authority.

Curriculum Outcomes

F-2

- Identify and describe the features of places at a local scale and how they change, recognising that people describe the features of places differently (VCGGC057)
- Collect and record geographical data and information from the field and other sources (VCGGC060)
- Represent data and the location of places and their features by constructing tables, plans and labelled maps (VCGGC061)

3-4

- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Identify and describe locations and spatial distributions and patterns (VCGGC072)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)
- Collect and record relevant geographical data and information from the field and secondary sources, using ethical protocols (VCGGC088)

5-6

- Collect and record relevant geographical data and information from the field and secondary sources, using ethical protocols (VCGGC088)

Additional Resources:

Water Educators Toolkit: http://www.awa.asn.au/documents/Water_Educators_Toolkit_2016_web.pdf

ACTIVITY 18

School Detectives

Students take on the role of an investigator looking around the school to see just how many places water comes from.

Ask students to list places where they think water is used, then walk around the school and grounds to review all the places where it is used. Students then make a water audit to see what fixtures and fittings the school has, noting any that are broken or leaking.

Students might like to try this activity at home too, One single dripping tap can waste up to 20,000 litres of water per year.

Equipment & Materials

Students can use a sheet to record their findings and calculate the effects of leaking taps throughout the school.

Curriculum Outcomes

F-2

- Participate in guided investigations, including making observations using the senses, to explore and answer questions (VCSIS051)
- Use informal measurements in the collection and recording of observations (VCSIS052)

3-4

- Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)
- Identify and describe locations and spatial distributions and patterns (VCGGC072)
- Collect and record relevant geographical data and information from the field and other sources (VCGGC074)

5-6

- With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)
- With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)

Additional Resources:

Water Educators Toolkit: http://www.awa.asn.au/documents/Water_Educators_Toolkit_2016_web.pdf

Conclusion

Although this Toolkit is about integrating Outdoor Learning into a water-based environment, many of the activities presented encourage ways for children to learn about water and can be done in the classroom or school ground. The knowledge and understanding gained can then support observations in the environment.

As educators we are continually seeking development If you have feedback or would like to share your experiences or activities please add a comment on the FUSE Webpage or email **outdoorlearning@outdoorsvictoria.org.au** and we will review it and get back to you as soon as possible.

Acknowledgments

This teacher toolkit could not have been created without the work and dedication of educators throughout Australia. Educators often need to look at their local environment and create activities that suit their needs for that day, we thank you for sharing your activities and hope others reading this document can utilise your creative thinking and implement these activities.

Furthermore, the following organisations and staff have assisted in the creation of this document including;

- Outdoors Victoria
- ACHPER (Victoria)
- Environment Education Victoria
- Geography Teachers' Association of Victoria (GTAV)
- Parks Victoria

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