LEARNING in the OUTDOORS

IN SCIENCE

TOOLKIT 7

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*

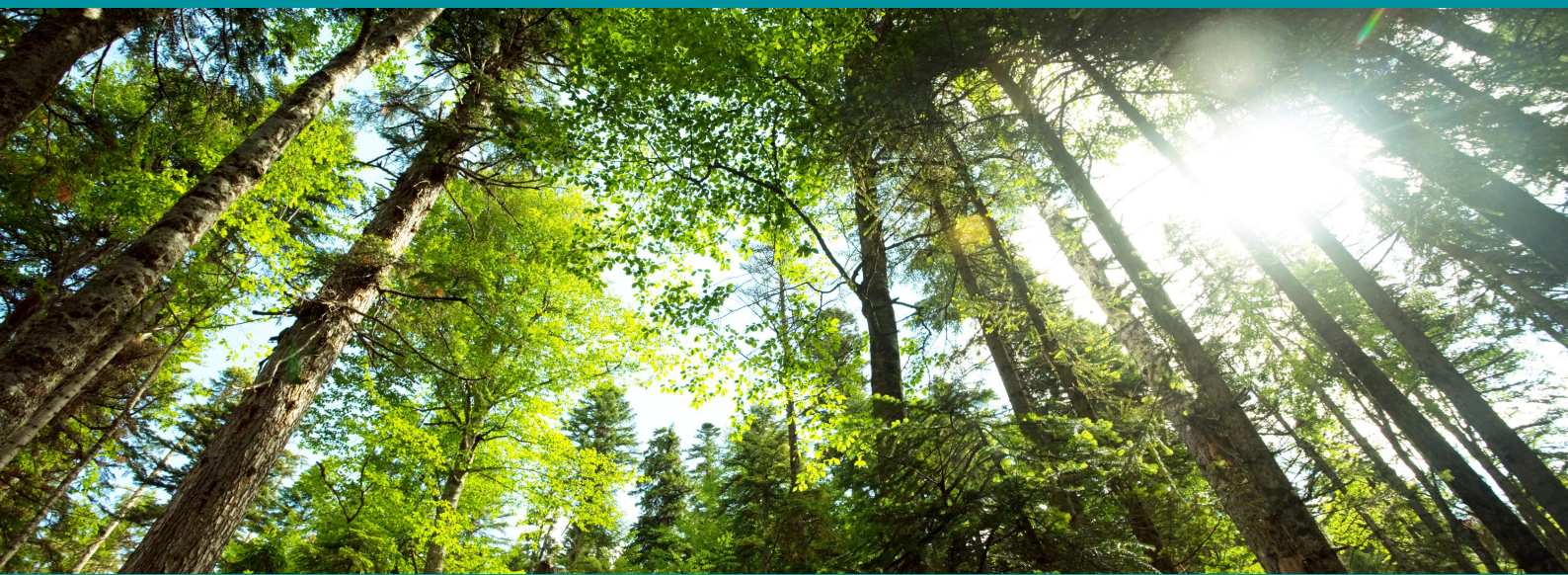
In 2020 a further six teacher toolkits will be created upon further consultation, if you would like to be involved in this process please use the contact details located on the last page of the document.

Please note the teacher toolkits will be constantly updated as emerging trends, activities and projects are created over the coming years. Videos and 360VR experiences are expected to be placed throughout the teacher toolkits above. These updates will occur within the FUSE Website.

Outdoors Victoria, in partnership with ACHPER (Victoria), EEV, GTAV and Parks Victoria, is 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 /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.



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INDEX

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 Science

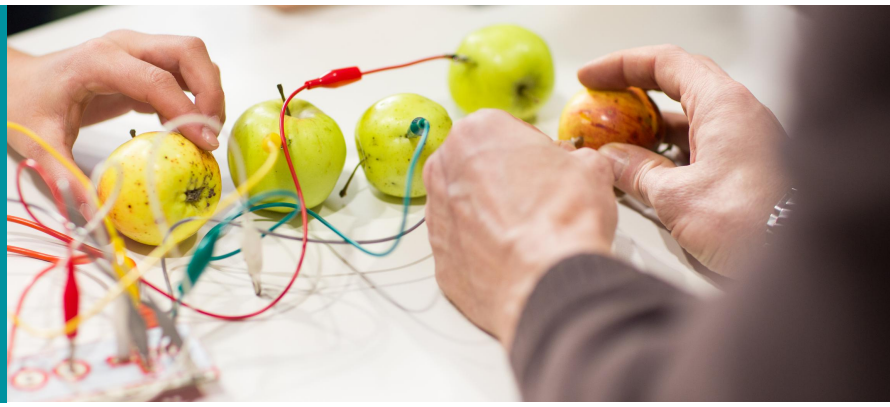
The outdoor environment has played an integral component of science teaching and learning ever since its introduction. This toolkit will provide you with 10 detailed science activities that can be conducted with outdoor learning. Each of these activities have been suggested by current science teachers with decades of experiences across a range of year and curriculum levels. Furthermore this toolkit has been created to provide generalist primary school teachers with an increased confidence in using the outdoors as a key part of the science curriculum. Within these 10 activities you will find a range of additional resources and videos that provide a deeper understanding and explanation for each of the activities.

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.



Benefits of Outdoor Learning in the Sciences

Research conducted by Roger Cutting & Orla Kelly (2015) (1) suggest that in education "we are surrounded by theories of learning, to lose track of simple truths, one of which is that going outside often feels like an adventure and science is about adventures"(p.130). By embedding elements of Outdoor Learning into science teaching we provide an enormous number of opportunities for all students to engage with sensory experiences that are not possible to be taught in the classroom such as touch, smell and sound, the outdoors allows students to observe these senses and then reflect upon this experience.

Further research suggests that by combining outdoor learning within the science curriculum students can engage with real-world problem-solving exercises which is fundamental to the Science curriculum. Additionally research by Marchant et al (2), finds that Outdoor Learning has been shown to have significant benefit for student wellbeing, memory, engagement (to all learner types) in addition to students being more likely to reflect upon the learning experience in a positive light in comparison to in classroom learning.

1 - *https://uk.sagepub.com/en-gb/eur/creative-teaching-in-primary-science/book239259*
2 - *https://www.sciencedaily.com/releases/2019/06/190611102710.html*

Habitat Observations

Students are to observe different habitats in the school ground.

Step 1: Ask students to come up with a list of creatures and habitats that they believe are located within the school grounds. Brainstorm reasons for the different habitats in the school grounds. For example, there might be a wet area in the shade, or a sandy or stoney place that is always in the sun in the school ground.

Step 2: Ask the students go outside and observe, draw and label the plants and animals in their chosen habitats.

Step 3: You can have students complete a living vs nonliving search in the school ground and complete analysis through recording, drawing and labelling their findings.

Equipment & Materials

- Journal/Worksheet for students to record their observations

(Students could create their own as an extension activity)

Step 4: Have students complete an analysis (this could consist of a notebook, drawing, creating maps, taking photographs, making a video or doing audio recordings) of the habitats located within the school ground and note what creatures were found. Encourage students to remain quiet while observing their areas.

Discuss with students that when scientists are observing varieties of habitats, they use their 5 senses to notice all the details, use questions such as what do you see, what do you hear and what do you smell.

This activity can be replicated at different times of the year to observe the changes. Discuss with students the possible reasons for the changes observed over a longer period.

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)
- 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
- Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)
- Identify and explain the interconnections within places and between places (VCGGC073)

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:

Observing & Recording Habitats: https://www.nationalgeographic.org/activity/observing-recording-habitats/

ACTIVITY 2

Littering Survey

Students will conduct a litter /pollution/recycling survey around the school environment.

Within this activity you will discuss littering, pollution and recycling and the reason why this occurs.

Hand out worksheets (Located in resources tab) and gloves, ask students to go outside, put on their gloves, and collect each piece of litter in the school ground (Define the area so periodic surveys can be completed)

Whilst outside categorize each of the litter items. Discuss what type of litter was found, who might have dropped it, and what litter was most common.

Now ask students to look in the recycling bins around the school ground and note if the items are placed in the correct bins.

You can compare your local results with your state or the national average by viewing the latest National Litter Index results on the Keep Australia Beautiful website.

Users are guided to convert results up to 1000m2 to enable direct comparison with the annual National Litter Index statistics (For more information go to the resources section below)

Save the results of the survey and complete another one later in the year. Analyze changes. Has litter increased or decreased? Are different items being littered?

EXTENSION SUGGESTION

- Create a science campaign that highlights the importance of recycling, compostable and rubbish bins within the school ground
- Create litter prevention strategies, have school ambassadors and influencers from the student body
- Create and place sign on bins within the school ground infrastructure.

Equipment & Materials

- Handout sheets for students to record survey items
- Pencils
- Rubber Gloves

Curriculum Outcomes

F-2
- Everyday materials can be physically changed or combined with other materials in a variety of ways for particular purposes (VCSSU045)

3-4
- Types of natural vegetation and the significance of vegetation to the environment, the importance of environments to animals and people, and different views on how they can be protected; the use and management of natural resources and waste, and different views on how to do this sustainably (VCGGK082)

5-6
- Environmental and human influences on the location and characteristics of places and the management of spaces within them (VCGGK096)

Additional Resources:

Keep Australia Beautiful - Teacher Resources: https://www.kabc.wa.gov.au/resources/for-schools/teacher-resources
Neighbourhood Litter Count: http://kab.org.au/wp-content/uploads/2012/05/Neighbourhood-litter-count.pdf

Human Sundial

In this activity students are going to create a Human Sundial using their shadow (for this activity to work best you need to choose a sunny day in which shadows are easily visible)

To start this activity break students into partner groups and provide each group with a piece of chalk and then go outside to an area (that has no shadows or clouds overhead) that has concrete or asphalt that allows sketching to occur.

Place groups of students 5-7 meters apart to account for the moving shadows.

Have one student stand in an area (mark this area with a X)

Then the other student in the pair can trace their shadow in chalk (Have students record the time next to each shadow)

Equipment & Materials

- Chalk
- Pencils & Paper to record tracing times

Once students have completed the first tracing have them draw a large circle with the middle of the circle being the X that was previously marked.

Have students estimate in which location the shadow will be the next time they come out.

Complete the tracing at least 3 times throughout the day (for the most accurate recording you could do every 2 hours throughout the day)

At the completion students will see a range of traces in the circle, discuss with students why the shadows would have changed throughout the day, what are shadows made out of, did the sun move, in what direction did your shadow move, are your tracings all the same height ?

Discuss with students how the earth spins on its axis in a day and makes its way around the sun in a year.

Curriculum Outcomes

F-2
- Visualise, generate, and communicate design ideas through describing, drawing and modelling (VCDSCD019)
- Use materials, components, tools, equipment and techniques to produce designed solutions safely (VCDSCD020)

3-4
- Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (VCDSCD029)
- Earth's surface changes over time as a result of natural processes and human activity (VCSSU062)

5-6
- Earth is part of a system of planets orbiting around a star (the Sun) (VCSSU078)

Additional Resources:

Human Sundial Shadow Science Experiment: https://rhythmsofplay.com/human-sundial-shadow-science-experiment/

NASA GLOBE Observer

Students will use a National Aeronautics and Space Administration (NASA) application to collect scientific data about elements of their surroundings.

Within this activity students are going to use a National Aeronautics and Space Administration (NASA) application called Globe Observer. This application hosts an international network of citizen scientists and scientists together to learn more about our shared environment and changing climate.

This application can be used to accept observations of clouds, mosquito habitats, land cover and trees.

Equipment & Materials

- NASA GLOBE Application

Clouds

- This aspect of the application helps NASA scientists understand clouds from the ground level in addition to their satellite imagery from space. By capturing this data NASA can complete a more detailed scientific picture of the rapidly changing cloud environment.

Mosquito Habitat Mapper

- This aspect of the application allows for citizen scientists (your students) to observe, record and share locations of mosquito habitats. This allows for scientists to track the range and spread of invasive mosquitoes from a global perspective.

Land Cover

- This aspect of the application allows for students to photograph the landscape, identify the kinds of land cover that they see (such as trees and grass) and then match this observation to recent satellite data. This provides scientists with updated land cover maps which allows more detailed community analysis and assess vulnerability to disasters like fire or floods.

Trees

- This aspect of the application allows for students to measure tree heights and tree circumferences that track the growth of trees over time. These measurements allow NASA scientists to understand the gain or loss of biomass which allow for more informed calculation of carbon that trees and forests either take in from or release into .

Curriculum Outcomes

F-2
- Observable changes occur in the sky and landscape; daily and seasonal changes affect everyday life (VCSSU046)
- 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
- Earth's rotation on its axis causes regular changes, including night and day (VCSSU061)
- Earth's surface changes over time as a result of natural processes and human activity (VCSSU062)

5-6
- Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)
- Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)

Additional Resources:

The Globe Project: https://www.globe.gov/web/australia
Help NASA measure trees: https://www.nasa.gov/feature/goddard/2019/help-nasa-measure-trees-with-new-app

ACTIVITY 5

City Nature Challenge

In this activity students are going to take part in a city nature challenge invented by citizen science staff at the Natural History Museum in California, USA. This challenge is completed by more than 159 cities throughout the world. This challenge is an international effort to document plants and wildlife in cities across the globe, within the challenge there is built rewards and contests to see who can make the most observations of nature, who can find the most variety of species and who can engage the most students. This challenge typically occurs in between April and May each year.

Firstly, you are going to download the iNaturalist app (Available on the Apple and Android Stores), this application allows you to track and maintain your encounters with organisms, to identify the organisms you find, to create useful data and to become a citizen scientist.

Equipment & Materials

- City Nature Challenge Website
- iNaturalist recording software

Once in the application, students will go into the outdoors and take photos and documentation of wild plants and animals (ensuring that their location on the phone is set to on), the application will automatically generate suggestions based on your photo and location.

Have a class discussion to confirm the various findings

After a set amount of time (2 weeks) ask students to identify what plants and animals were found and correlate these findings with their textbook or using the internet), compare findings with other classes in your school.

Please note there is an abundance of information on the City Nature Challenge website, including full lesson plans to use for all grades.

Curriculum Outcomes

F-2
- Natural, managed and constructed features of places, their location and how they change (VCGGK068)
- Identify elements of the kinship system and its links to place and natural species (VCLVU144)

3-4
- Types of natural vegetation and the significance of vegetation to the environment, the importance of environments to animals and people, and different views on how they can be protected; the use and management of natural resources and waste, and different views on how to do this sustainably (VCGGK082)

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:

City Nature Challenge education toolkit: http://citynaturechallenge.org/education-toolkit/
iNaturalist with students: https://education.eol.org/cnc_materials/iNaturalistWithStudents.pdf
City Nature Challenge age 5-8: http://citynaturechallenge.org/wp-content/uploads/2018/10/Age-5-8-Educator-Basecamp-with-Survey-Link1.pdf
City Nature Challenge age 8-11: http://citynaturechallenge.org/wp-content/uploads/2018/10/Age-8-11-Educator-Basecamp-with-Survey-Link.pdf

ACTIVITY 6

Building Materials

In this activity students are going to go around the school ground and complete an analysis on the different types of building materials that have been used throughout the area.

Firstly, provide students with a focus or ask them to suggest one, for example fences, seats, playground, classrooms etc.

Have the students go into the outdoor environment and capture the data on the different types of materials.

After collecting the data students need to investigate and write down the different types of materials that are used in the construction of that structure. E.g. – Wood, metal and paint for a playground bench. (If they do not know the right terminology, ask them to describe or take a photograph to help)

Equipment & Materials

- Pencil
- Paper
- Camera/Tablet

Now ask students to research how each of these materials were made. Ask them to propose reasons for that material being used in the school ground (What are the benefits of this material in comparison to other materials that could have been used)

In the last step, have students make and complete a presentation of their various findings about school building materials in the school environment.

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

- Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)
- Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (VCDSTC027)

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)
- Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)

Additional Resources:

Building material facts for kids: https://kids.kiddle.co/Building_material

ACTIVITY 7

A Mole of Chalk Laboratory

Students will calculate how many moles / the mass of chalk that are used to write their name. Atoms are so small it can be very difficult to work it out so in this activity "Moles" are uses instead. A Mole is 6.02 x 1023 atoms. Must express number as shown. Very different to 10.23!

Firstly, you need to weigh a piece of chalk before the students use it for the activity. (It may weigh 4.4 to 5 grams for example)

Secondly, have students go outside and draw their name on concrete in the playground

Thirdly, have the students weigh the chalk after they have written their name on. Once they have weighed the chalk have students calculate the difference (It may be 0.1 – 0.3 of a gram). We are now going to find the number of atoms of calcium, carbon and oxygen it took to write students names (on the assumption that the piece of chalk is 100% calcium carbonate)

Equipment & Materials

- Chalk
- Electronic Scales
- Calculator

We are now going to look at this through the scale of a "mole" which is typically used for this type of measurement in chemistry. (Because atoms are so small, we would require a large amount of numbers to count them so instead of this we break it down into 'moles".

Because molar mass of calcium carbonate is 100.g/mol, the number of moles in calcium carbonate will be equal to the mass of chalk that was used to write their names divided by 100. (You may have to assist students in this process)

For example if you weighed a piece of chalk at it was 4 grams, a student then wrote their name and then reweighed the chalk at it is now 3.5 grams (A difference of 0.500 grams) the number of moles of calcium carbonate that was used would be 0.500g / 100.g/mol which = 0.00500 mol.

Modifications:
- Have students experiment with different names and drawing and calculate the number of "moles" used in each.

Curriculum Outcomes

F-2
- Objects are made of materials that have observable properties (VCSSU044)
- Respond to and pose questions, and make predictions about familiar objects and events (VCSIS050)

3-4
- With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)

5-6
- Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)

Additional Resources:

Moles of Chalk worksheet: http://www.mrphysics.org/MrGuch/oct2003.pdf
How many atoms of chalk in my name?: https://prezi.com/rtfwkpsomman/how-many-atoms-of-chalk-in-my-name/
Moles of Chalk in a Drawing worksheet: http://kaffee.50webs.com/Science/labs/Chem/Lab-Moles.of.Chalk.Drawing.html

ACTIVITY 8

Rocks in the School Ground

Within this activity students are going to go into the school ground and discover a range of rock properties and complete an analysis.

Firstly, have students go and collect a variety of rocks from the school area, before they can take any rock they must record the exact spot that it was taken from (this can be recorded in a textbook or using a marker).

Once they have collected a range of rocks students must identify and tag each of the rocks (this can be through coloured dots etc.). They are then going to complete a detailed analysis of these rocks using the following methods (They can place the data into an excel spreadsheet or into a notebook)

Equipment & Materials

- A variety of rocks
- Pencil
- Paper
- Notepad

- Weighing (Using a scale weigh all the rocks)
- Counting (How many rocks do they have)
- Sorting the rocks (Sort the rocks by shape, size, colour or any other method)
- Magnification (Have students use a magnification glass and record the observations)
- Density (Have students use a water to see if the rock floats or if it sinks – Can use Pumice which floats)
- Hardness (Scratch the rock with a coin, with various other objects or rocks – does it show anything?)
- Rubbings (Rub the rock onto a blank piece of paper, what transfers across?)

Once they have completed the analysis of all the above areas (students can then return the rocks back to their original location) and then create a class presentation on their findings (Younger children could then pick one rock to create a rock pet)

Curriculum Outcomes

F-2
- Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (VCMMG115)

3-4
- Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)
- Identify symmetry in the environment (VCMMG144)

5-6
- Compare objects using familiar metric units of area and volume (VCMMG166)
- Create symmetrical patterns, pictures and shapes with and without digital technologies (VCMMG173)

Additional Resources:

Sedimentary Rocks lesson: http://preschoolpowolpackets.blogspot.com/2016/04/sedimentary-rocks-lesson.html
21 Rock activities for preschoolers: http://preschoolpowolpackets.blogspot.com/2016/08/21-rock-activities-for-preschoolers.html

ACTIVITY 9

Create a Dirt Battery

Within this activity students are going to complete an outdoor science project; within this project they will create a dirt battery (This is like building a battery from a lemon but does require some additional equipment)

The first step in creating a dirt battery is having students full an ice cube tray with moist dirt (if the dirt is too dry you can add a small amount of water to each part of the ice cube tray, additionally for extra connectivity, add lemon juice or vinegar to the soil.

Secondly, using a wire stripping tool (can be purchased from most hardware stores) you are going to strip a copper wire (You could also an old extension cord). You are then cut the wire into several strips that around 7-10cm each and twist all the strands together. Once you have a series of strips you are then going to attach the strands to a series of screws (can be purchased at most hardware stores).

Equipment & Materials

- Ice cube tray
- Galvanized steel screws
- Copper wire
- Dirt
- LED Pin Lights

For each strip of wire, you need one bolt / screw. You are then going to wrap the wire around the top of the screw 3 – 4 times leaving an extra amount (the length of the screw). This extra wire can now be bent downwards into the dirt. Once this is completed you can place this wire and bolt/screw into each ice cube cell (As you progress through adding in the screws into the ice cube try cells ensure that you connect the wires from each of the cells to the following ice cube cell)

Once completed you can add in LED lights into the tray and you will be able to power these lights (This will typically generate 5 volts). Additionally, you can use a power meter to record the amount of voltage the ice cube tray is generating.

For a step by step video please refer to the resources below.

Curriculum Outcomes

F-2

- Explore needs or opportunities for designing, and the technologies needed to realise designed solutions (VCDSCD018)
- Use materials, components, tools, equipment and techniques to produce designed solutions safely (VCDSCD020)

3-4

- 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)
- 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)

Additional Resources:

Step-by-step video - How to make a dirt battery: https://www.youtube.com/watch?v=aCCK132OIGA
The Dirt Battery experiment: https://teachbesideme.com/dirt-battery-experiment/

ACTIVITY 10

Seed Balls

Within this activity students a going to create a “seed bomb” and place this into an area of the school garden (Before completing this activity it is suggested that you have a conversation with the school gardener to ensure the appropriateness of the chosen seeds).

Firstly, you need to collect the following materials:

- Clay Powder (or Clay Soil)
- Compost
- Mixing bowl
- Seeds

To start this activity, you will mix 1 cup of seeds with 5 cups of compost and 2-3 cups of clay powder (or clay soil).

Slowly start to add water into your mix until everything starts to stick together

Roll this mixture into firm balls the size of a golf ball (Make the texture of the balls quite loose and not to firm or the balls will not work)

Leave the seed ball in the sun for it to set

Put the bombs into the garden and water them over the following weeks.

This activity teaches students about growing plants in the local school environment.

Equipment & Materials

- Clay Powder (or Clay Soil)
- Compost
- Mixing bowl
- Seeds

Curriculum Outcomes

F-2

- Everyday materials can be physically changed or combined with other materials in a variety of ways for particular purposes (VCSSU045)
- Observable changes occur in the sky and landscape; daily and seasonal changes affect everyday life (VCSSU046)

3-4

- Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)
- Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)

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:

Seed Bombs: https://www.abc.net.au/gardening/factsheets/seed-bombs/9436252

Conclusion

This teacher toolkit shows that integrating Science into the outdoors can be achieved with relative ease. Specialist Science teachers were interviewed whilst this resource was undergoing development with teachers expressing their favourite outdoor science activity that could be completed by generalist teaching staff with experience in non-science areas.

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

Get in contact:

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