

I wonder what lives here?

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Number of lessons: Five

Year level(s): F, 1, 2

Australian Curriculum content descriptions:

Foundation

Living things have basic needs, including food and water [\[ACSSU002\]](#)

Science involves observing, asking questions about, and describing changes in, objects and events [\[ACSHE013\]](#)

Pose and respond to questions about familiar objects and events [\[ACIS014\]](#)

Participate in guided investigations and make observations using the senses [\[ACIS011\]](#)

Engage in discussions about observations and represent ideas [\[ACIS233\]](#)

Share observations and ideas [\[ACIS012\]](#)

Year 1

Living things have a variety of external features [\[ACSSU017\]](#)

Science involves observing, asking questions about, and describing changes in, objects and events [\[ACSHE021\]](#)

People use science in their daily lives, including when caring for their environment and living things [\[ACSHE022\]](#)

Pose and respond to questions, and make

predictions about familiar objects and events [\[ACIS024\]](#)

Participate in guided investigations to explore and answer questions [\[ACIS025\]](#)

Use informal measurements to collect and record observations, using digital technologies as appropriate [\[ACIS026\]](#)

Use a range of methods to sort information, including drawings and provided tables and through discussion, compare observations with predictions [\[ACIS027\]](#)

Compare observations with those of others [\[ACIS213\]](#)

Represent and communicate observations and ideas in a variety of ways [\[ACIS029\]](#)

Year 2

Living things grow, change and have offspring similar to themselves [\[ACSSU030\]](#)

Science involves observing, asking questions about, and describing changes in, objects and events [\[ACSHE034\]](#)

People use science in their daily lives, including when caring for their environment and living things [\[ACSHE035\]](#)

Pose and respond to questions, and make predictions about familiar objects and events [\[ACIS037\]](#)

Participate in guided investigations to explore and answer questions [\[ACIS038\]](#)

Use informal measurements to collect and record observations, using digital technologies as appropriate [\(AC SIS039\)](#)

Use a range of methods to sort information, including drawings and provided tables and through discussion, compare observations with predictions [\(AC SIS040\)](#)

Compare observations with those of others [\(AC SIS041\)](#)

Represent and communicate observations and ideas in a variety of ways [\(AC SIS042\)](#)

Achievement standard:

By the end of the **Foundation year**, students describe the properties and behaviour of familiar objects. They suggest how the environment affects them and other living things. Students share and reflect on observations, and ask and respond to questions about familiar objects and events.

By the end of **Year 1**, students describe objects

and events that they encounter in their everyday lives, and the effects of interacting with materials and objects. They describe changes in their local environment and how different places meet the needs of living things. Students respond to questions, make predictions, and participate in guided investigations of everyday phenomena. They follow instructions to record and sort their observations and share them with others.

By the end of **Year 2**, students describe changes to objects, materials and living things. They identify that certain materials and resources have different uses and describe examples of where science is used in people's daily lives. Students pose and respond to questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They record and represent observations and communicate ideas in a variety of ways.

Unit overview

Students will become **Earthwatch Explorers** by using their senses to explore sections of their school using science equipment and techniques. They will capture images of what they see in their chosen "exploring spot" and create a collage using natural materials found in and around that spot. Students will then research their insect/bug/creature and create a booklet with facts and information about it. They will then present their booklet and collage to others in a classroom exhibition event.

Lesson 1: I am an Earthwatch Explorer

Context

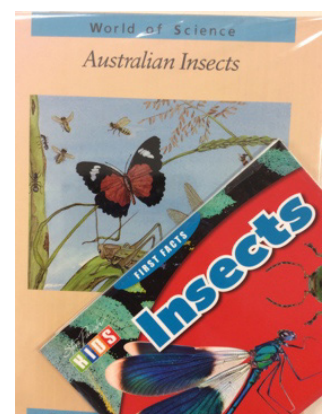
Engage (5E's) Tuning In (Inquiry)

Materials and equipment



Create badges for your Earthwatch explorers and flags/ banners for their Earthwatch exploring spot.

Provide texts about insects, images, etc.



Safety Advice

Nil

Objectives

Elicit students' prior knowledge, stimulate interest and gather diagnostic data to inform teaching and learning.

Introduction

Review photographs of different areas in the school eg garden, grass, sandpit, etc; and images of different insects you might find in your local area. Include larger animals such as birds, frogs, etc, to differentiate 'small' from 'large' animals.

Core

Introduce the insect photographs and books, etc, to students. Ask students questions to find out what they already know about insects, bugs, etc. Capture responses, perhaps in a floor book or classroom journal that will be used for the unit.

Introduce the school yard images. Ask questions about what students might expect to find in those areas. Capture responses. If needed here explore the idea of 'small' and 'large' animals with students.

Show students the Earthwatch Explorer badge template. Discuss what it might mean to be an explorer. Introduce the idea 'I am an **Earthwatch explorer**...what can I hear, see, touch, smell, taste? Here is my Earthwatch badge. Here is my Earthwatch Explorer spot sign.'

Conclusion

To conclude ask students to **choose where** (based on the photographs) they might put their "Earthwatch Explorer spot sign" and what they might find in that spot.

Ask: 'I wonder what I can find in this spot? Ants? Grasshoppers? Bugs? Beetles? Grass? Slaters?'

Resources

Useful links: <https://www.flickr.com/groups/ccbugs/pool/>
<https://www.flickr.com/groups/insects-in-cc/pool/>

Lesson 2 and 3 (Double): My Earthwatch learning spot

Context

Explore (5E's) Finding out (Inquiry)

Materials and equipment

Tweezers
 Vial or small container
 Pipette
 Magnifying glass
 Net
 Aspirator/pooter (link to make one below)
 Hula hoops (to mark learning spot)
 Plastic insects for demonstration and student practice
 iPads or cameras to take photos of creature discoveries



Safety advice

Students will be moving to different areas in the school to establish their “exploring spot”. Remind students of the need to move carefully when carrying equipment. Discuss with students what steps to take if they find something ‘dangerous’ or that they are unsure of. Eg. Don’t touch it. Move away. Tell the teacher. Predetermine ‘safe’ areas for exploration by students within your school environment and in line with student capabilities.

Objectives

Students carry out hands-on investigations in which they can explore the concept or skill. Develop the required research skills, have some shared experiences that will allow conversations and the sharing their thinking with others and learn how to record information gathered in efficient ways.

Introduction

Recap previous lesson using classroom journal and individual student work.

Core

Ask students to think about what equipment they may need. Introduce equipment available to the students and explain its purpose and demonstrate how to use it. Give students time to practice the skills required for the chosen equipment. Plastic bugs can be used here to assist. Record information in classroom journal.

Students then search for their Earthwatch Exploring spot. Allow a suitable timeframe for students

to find their spot, set up, observe/explore, and to capture images/information from their spot.

'I have a magnifying glass and a net and a vial to save my creature in to look at it properly and a hoop to show my exploring spot.'

'I am looking for my Earthwatch exploring spot out in the playground: On the lawn, in the leaf litter, in the sand, near the mud, in the flower garden, under the tree, etc.'

'Here is my Earthwatch flag, in my Earthwatch spot.'

Conclusion

Regroup class and discuss student discoveries (and manage any disappointments). Capture information in the classroom journal.

Resources

Useful links: How to make a "pooter": <http://bushblitz.org.au/teachlive/mini-blitz-info-sheet-pooters/>

Lesson 3: Creature features Part 1

Context

Explain (5E's), Sorting out (Inquiry)

Materials and equipment

Collage materials: items from the explorer spots, newspaper, tree bark, dirt, leaves, etc.

Photo credit: naturecraftsforkids.com

Safety advice

If revisiting explorer spots, take care with sharp or dangerous objects that may be in that area. Teacher may pre-collect materials from different spots if this is not an option for students.

Objectives

Support students to develop scientific explanations, drawing from experiences and observations, and using representations. Students will also reveal their new thinking and deeper understanding through answering questions, interpreting information and communicating with others.



Introduction

Recap previous lesson and student discoveries. Use classroom journal, student notes and photographs.

Core

'I need to look like a scientist...draw like an artist.'

Teach the students to look like a scientist using the iPad.

Get as close as they can to the subject. Assist students with the identification of the key features of their creature. Eg number of legs, wings, body sections, eyes, etc.

If the photos aren't great look at Google images and get the students to choose one of them.

Print the image in black and white.

Cut it out and put it onto some newspaper... then maybe create the collage on that.

Get the student to trace around the subject in black pen.

Photocopy it.

Conclusion

Conduct a carousel walk of the displayed items. Capture images for the classroom journal.

Resources

Useful links: <https://www.drawingtolearn.com.au/>

<http://anic.ento.csiro.au/insectfamilies/>

<https://www.thisiscolossal.com/2017/08/insect-flower-arrangements-by-raku-inoue/>

<http://naturecraftsforkids.com/insect-nature-craft-collage/>

Lesson 4: Creature features Part 2

Context

Elaborate (5E's) Going further (Inquiry)

Materials and equipment

iPads, digital technology, apps, to create booklet and digital portfolio. Books, websites, information for students about their chosen creature.

Safety Advice

Nil.

Objectives

Students research key information about their insect. They discuss and compare their ideas with each other and apply what they have learned to new situations and so develop a deeper understanding of the concept. It is an opportunity for students to pursue questions and interests arising from the journey so far.

Introduction

Review previous lesson using student work and classroom journal.

Core

Get the students to identify key information about their chosen creature. What does it eat? What changes does it go through in its lifecycle? Where does it find shelter? What might eat it? What special features or habits does it have?

Use a digital publishing program/app such as WePublish, Seesaw or other program for students to create their booklet. Use the photo of their insect collage (and habitat if created) as well as a 'real' image of the insect. Pages include information about the student as an Earthwatch Explorer, their exploring spot, their discovery (creature), the collage and real insect (side by side), creature facts and a student reflection about the learning experience.

Determine the exhibition details for students to invite special guests to attend.

Conclusion

Remind students of all the work completed throughout the unit. Collect comments/feedback in the classroom journal and individual student reflections. 'I have learned...', etc.

Resources

Useful links: <https://kidsownpublishing.com/products/we-publish-app/>
<https://web.seesaw.me/>

Lesson 4: Earthwatch Explorers Exhibition

Context

Evaluate (5E's) Reflecting, Acting and evaluating (Inquiry)

Materials and equipment

Student created booklets, collages, classroom journal. Special guest/visitor feedback forms.

Safety Advice

Nil.

Objectives

Students will share their learning with an authentic audience and reflect on their achievements for the unit. They review and reflect on their own learning, and on their new understanding and skills, including personal growth throughout the unit.

Introduction

Recap previous lessons using student work and the classroom journal.

Core

Create an exhibition of all the student work completed across the unit. Students have their own space for their work and present it to special guests and visitors. Students talk through their insect features and characteristics with special guests and visitors. The stories and information maybe pre-recorded prior to the exhibition.

Each student may have a feedback/comments sheet in their space for entries made throughout the exhibition.

Conclusion

Celebrate the unit of work with students and guests.

Don't forget to take photos of the exhibition in action and collect feedback sheets.

Resources

Acknowledgements:

I acknowledge the guidance and support provided by Leith Hogan, Curriculum Consultant and Teacher Coach, Perth, WA, during the creation of this unit.

Lesson #	Phase / Stage of 5E's / Inquiry learning
One	Engage / The purpose of the Engage phase is to elicit students' prior knowledge, stimulate interest and gather diagnostic data to inform teaching and learning. Each unit begins with a lesson that mentally engages students with an activity or question. It captures student interest, provides an opportunity for them to express what they know about the concept or skill being developed, and helps them to begin to make connections between what they know and new ideas.
	Tuning In / Provoking interest, curiosity, tension or uncertainty. • gathering data about students' existing thinking, knowledge, feeling and understanding • helping students make connections with the key concept/s • providing purpose, the big picture and authenticity • motivating, exciting, engaging
Two	Explore / Students carry out hands-on investigations in which they can explore the concept or skill. They grapple with the problem or phenomenon and describe it in their own words. This phase allows students to acquire a shared set of experiences that they can refer to to help each other make sense of the new concept or skill. The Explore phase is characterised by multiple opportunities for students to experience hands-on learning and represent their thinking.
	Finding out / gathering new information to address the compelling question. • developing the required research skills • learning how to organize and manage the process of finding out • having some shared experiences that will allow us to talk and share our thinking with others • stimulating curiosity through new experiences and information • learning how to record information gathered in efficient ways
Three	Explain / The purpose of the Explain phase is to support students to develop scientific explanations, drawing from experiences and observations, using representations. Students continue to develop knowledge of concepts and demonstrate their developing understanding or alternative conceptions.
	Sorting out / comprehending – making meaning of the information gathered. • revealing new thinking and deeper understanding • answering questions • reviewing/revising early thinking and synthesizing • interpreting the information and communicating with others
Four	Elaborate / This phase provides opportunities for students to apply what they have learned to new situations and so develop a deeper understanding of the concept or greater use of the skill. It is important for students to discuss and compare their ideas with each other during this phase. Investigations in the Elaborate phase build student capability for science inquiry skills in a meaningful context.
	Going further / opportunities for students to pursue questions and interests arising from the journey so far • learners work more independently on investigations
Five	Evaluate / The final phase provides an opportunity for students to review and reflect on their own learning, and on their new understanding and skills. Student represent changes to their understanding, beliefs and skills.
	Reflecting / helping students apply their learning to other contexts – to put the learning to use. • enabling students to reflect on what and how they have learned and set goals for the future • assessing final understanding and growth in skills Acting & Evaluating / reviewing the inquiry to identify strengths and weaknesses. • identifying recommendations for future planning