Minecraft: Eco Detectives Reflection Portfolio Lesson/s

Lesson Overview
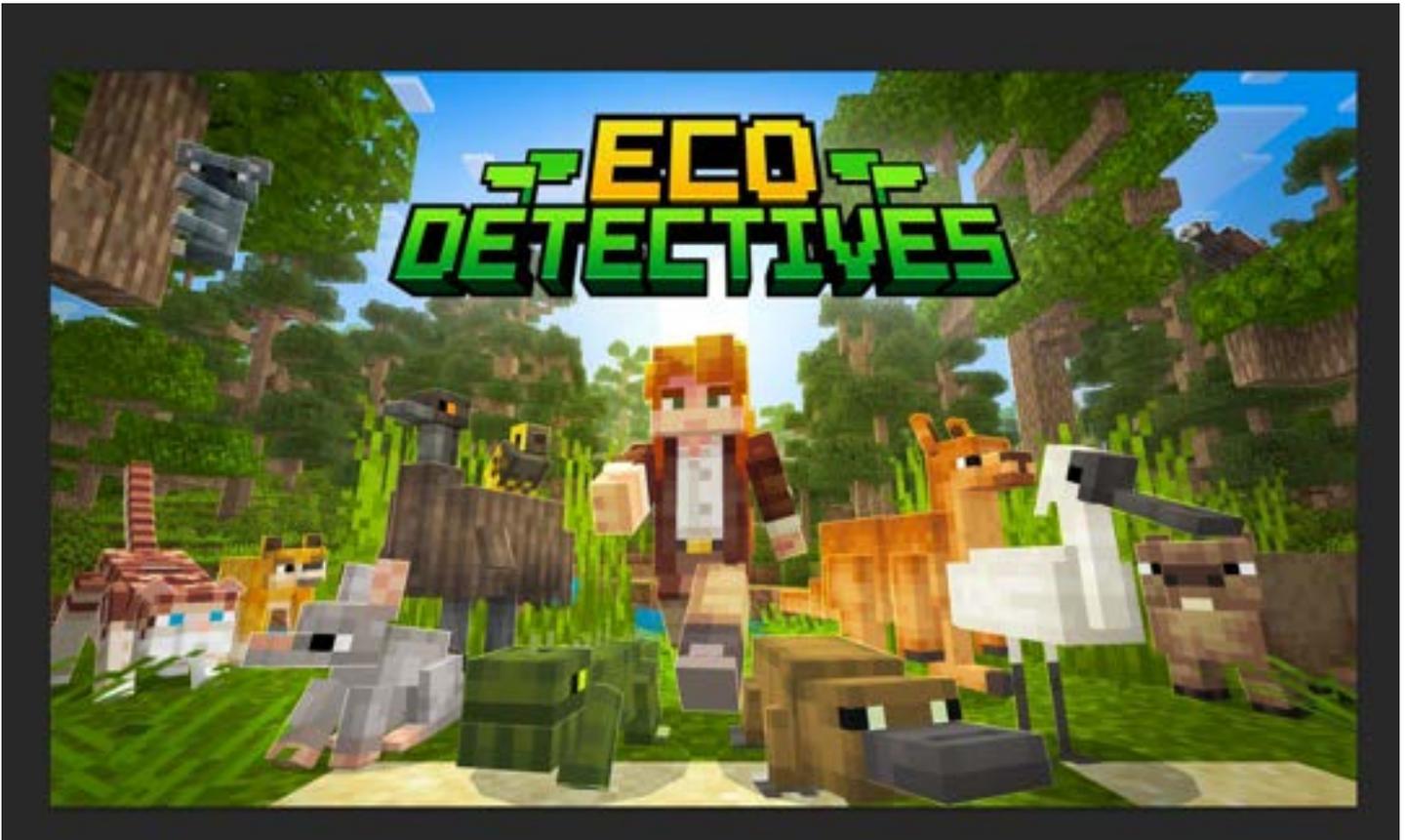
Title – Eco Detectives Reflection Portfolio

Short Description: This activity provides an engaging and educational way for students to reflect on their learnings from playing Eco Detectives and consider how to apply this learning to the real world.

Introduction: This document **does NOT have to be completed in one session;** it has been designed so the students can add to it over a series of lessons.

Student Ages: 8-10, 11-13,

Subjects: Geography, Animals, Climate & Environment,

Skills: Character, Creativity, Critical Thinking,

Estimated Time: 45 mins (this may vary see **Teacher Prep and Notes** below)

Australian Curriculum Mapping:

<mark>NSW & New Zealand Curriculum Outcomes are located at the end of this document</mark>

	Year 3	Year 4	Year 5	Year 6
English	AC9E3LY02 use interaction skills to contribute to conversations and discussions to share information and ideas AC9E3LY05 use comprehension strategies when listening and viewing to build literal and inferred meaning, and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features	AC9E4LY02 listen for key points and information to carry out tasks and contribute to discussions, acknowledging another opinion, linking a response to the topic, and sharing and extending ideas and information	AC9E5LY02 use appropriate interaction skills including paraphrasing and questioning to clarify meaning, make connections to own experience, and present and justify an opinion or idea	
Humanities & Social Science	AC9HS3S01 develop questions to guide investigations about people, events, places and issues AC9HS3S06 propose actions or responses to an issue or challenge that consider possible effects of actions AC9HS3K07 why people participate within communities and how students can actively participate and contribute to communities AC9HS3S07 present descriptions and explanations, using ideas from sources and relevant subject-specific terms	AC9HS4S05 draw conclusions based on analysis of information AC9HS4K05 the importance of environments, including natural vegetation and water sources, to people and animals in Australia and on another continent AC9HS4S06 propose actions or responses to an issue or challenge that consider possible effects of actions AC9HS4S01 develop questions to guide investigations about people, events, places and issues AC9HS4S07 present descriptions and explanations, using ideas from sources and relevant subject-specific terms	AC9HS5S06 propose actions or responses to issues or challenges and use criteria to assess the possible effects AC9HS5S07 present descriptions and explanations, drawing ideas, findings and viewpoints from sources, and using relevant terms and conventions	AC9HS5S06 propose actions or responses to issues or challenges and use criteria to assess the possible effects AC9HS6S07 present descriptions and explanations, drawing ideas, findings and viewpoints from sources, and using relevant terms and conventions

Science	**AC9S3I06** write and create texts to communicate findings and ideas for identified purposes and audiences, using scientific vocabulary and digital tools as appropriate			
Technologies	**AC9TDI4P03** generate, communicate and compare designs	**AC9TDI4P03** generate, communicate and compare designs		

Cross-Curriculum Priorities
Sustainability Futures (FS), Sustainability Design (SD)

- SF2 - Sustainable futures require individuals to seek information, identify solutions, reflect on and evaluate past actions, and collaborate with and influence others as they work towards a desired change.
- SD3 – Sustainable design requires an awareness of place, past practices, research and technological developments, and balanced judgements based on project environmental, social and economic impacts.

Lesson Plan

Learning Objectives:

After these activities, students will:

- **Environmental Awareness**: Develop a deeper understanding of environmental issues, such as deforestation or pollution, by reflecting on how these issues are represented in Eco Detectives and how they can be addressed in real life.
- **Problem-Solving Skills**: Enhance problem-solving skills by reflecting on challenges faced in the game, such as resource management or ecosystem restoration, and proposing creative solutions that can be applied both in the game and in real-world environmental scenarios.

Teacher Prep and Notes:

*There is an opportunity for classes to participate in **research** to help Zoo Education Officers assess the game's impact on student learning and environmental awareness. For more information, please see the end of this document.*

Prep

- Download a hard copy (paper version) of the Eco Detectives **Reflection Portfolio Activity Booklet** from the **Supporting Files** section (one for each student).
- Computer or tablet with internet access
- Minecraft Education app (downloaded and installed) to play Eco Detectives
- Pen or pencil
- **OPTIONAL:**
  - Explore the **Immersive Reader** option for **Building Your Vocabulary** activity OR use **teacher definition** page from the **Supporting Files** section

- **Immersive Reader** embeds text reading and comprehension capabilities into Minecraft Education. This option help users of any age and reading ability with features like reading aloud, translating languages, and focusing attention through highlighting and other design elements. Click "i" or select the Immersive Reader icon next to text in the game to activate the feature. Scenarios where immersive reader works in:
  - Portfolio (if there is at least 1 photo)
  - Book&Quill (including signed Book&Quill)
  - NPC (dialog box)
  - Slate / Poster / Board
  - Sign / Hanging Sign
  - Code Builder/MakeCode/Tutorials

Notes

- Hand out a copy of the **Reflection Portfolio Activity Booklet** to each **student**. This could also be worked through as a class group with a teacher leading the lesson for each page of the **Reflection Portfolio Activity Booklet** as a guide for younger students. Teachers

can show the students the activity/ies on a digital whiteboard/screen that they would like the students to complete after they have played part or all the game.

- This document **does NOT have to be completed in one session;** the students can add to it over a series of lessons.

Guiding Ideas and Questions

Briefly describe the purpose of the reflection portfolio and its connection to Eco Detectives.
- *"You will use this document to help you reflect on your actions after playing various aspects of Eco Detectives"*

Explain the importance of reflection in learning and how it can help deepen understanding and improve future actions.
- *"Reflecting on your actions within the game allows you to learn more about yourselves and how we learn. Reflection also helps you to make sense of and grow from your learning experiences within the game improving your critical thinking skills."*

Take time to explore the document as a class. Take the students through the document, answer any questions that might come up.

- Students play the game; this may take 2-3 lessons of 30-40 mins.
- When the game playing has finished, the students can complete part of the Reflection Portfolio designated by the teacher.

Activities in the **Reflection Portfolio Activity Booklet** include;

- My Eco Detective Profile: 15mins
- Building Your Vocabulary: 20 minutes (+ extension activity at end of document)
- Exploring Biomes: (plants) 30 minutes
- Exploring Biomes: (animals) 30 minutes
- Protecting the Environment: 15 minutes
- Making Connections: 20 minutes

Conclusion: 15 minutes

RESEARCH ELEMENT

Overview / blurb

As Zoo Education Officers, we are committed to evaluating the effectiveness of educational initiatives like Eco Detectives. By collecting learners' Reflection Portfolio Activity Booklets, we aim to ethically assess the game's impact on student learning and environmental awareness.

What are we gathering?

We are collecting digital copies of the Reflection Portfolio Activity Booklets completed by students. These portfolios showcase part of your class's learning journeys.

It also really helps if you share your
- school name,
- the country your school is based in, and
- the age of your learners when they complete the portfolios.

Don't worry, all school names and ages will be anonymised – it just helps us understand the impact of the game for different ages and across the world!

Why?

We want to understand how engaging with Eco Detectives helps students learn. By looking at these completed student portfolios, we can see how effectively the game and lesson resources are supporting student learning, creativity, and problem-solving skills. This research will help us improve and better support students and teachers around the world.

How to share your portfolios

You can email digital copies of the portfolios to;

ecodetectiveszoo@gmail.com

If the portfolios are in physical form, please scan them and email them to the same address. We accept PDFs and Word documents.

Where and how will we store information?

All submitted portfolios will be securely stored and encrypted, following the latest data protection regulations. Only individuals completing the research will have access to these files. We take the confidentiality and security of all submissions very seriously to ensure learner privacy.

What will happen with the research?

We will analyse the portfolios to find out more about how learners are reflecting on their engagement with Eco Detectives. The findings will be shared through reports and presentations within the Wildlife Conservation and Education industries. We may use anonymised quotes and excerpts from the portfolios to show the impact of the game.

Permissions

By sending us copies of the Reflection Portfolio Activity Booklets your learners complete, you're giving us permission to use anonymised samples of the work in the research and presentations. All portfolios will remain anonymous, and no personal information will be used.

Your participation is crucial in helping us understand and enhance the benefits of Eco Detectives. Thank you for your support!

How can I find out more now and after the research has finished?
To learn more about the research, get involved with other areas of Eco Detectives research and/or stay updated, please email ecodetectiveszoo@gmail.com to contact the Zoo Education Research Team. The final report will be shared with individuals who have expressed interest in receiving a copy. Updates and summaries can be sent to all schools and teachers participating in the research where they have opted in to hear more.

Supporting Files

NOTE: as part of the **Building Your Vocabulary** activity, please see below definitions from the game.

Student **Reflection Activity Booklet**, PDF

NSW Curriculum

	Stage 2	Stage 3
English	**EN2-OLC-01** communicates with familiar audiences for social and learning purposes, by interacting, understanding and presenting **EN2-CWT-02** Plans, creates and revises written texts for informative purposes, using text features, sentence-level grammar, punctuation and word-level language for target audience. **EN2-VOCAB-01** builds knowledge and use of Tier 1, Tier 2 and Tier 3 vocabulary through interacting, wide reading and writing, and by defining and analysing words	**EN3-OLC-01** communicates to wide audiences with social and cultural awareness, by interacting and presenting, and by analysing and evaluating for understanding **EN3-CWT-01** plans, creates and revises written texts for multiple purposes and audiences through selection of text features, sentence-level grammar, punctuation and word-level language **EN3-VOCAB-01** extends Tier 2 and Tier 3 vocabulary through interacting, wide reading and writing, morphological analysis and generating precise definitions for specific contexts
Geography	**GE2-1** examines features and characteristics of places and environments	**GE3-1** describes the diverse features and characteristics of places and environments
Science & Technology	**ST2-2DP-T** selects and uses materials, tools and equipment to develop solutions for a need or opportunity. *develop, record and communicate design ideas and decisions using appropriate technical term * develop, record and communicate design ideas and decisions using appropriate technical term	**ST3-3DP-T** defines problems, and designs, modifies and follows algorithms to develop solutions *develop solutions through trialling and refining using iterations

New Zealand Curriculum mapping:

	Levels One and Two	Level Three and Four	Level Five
English	**Speaking, writing and presenting** Level 1) Acquire and begin to use sources of information, processes, and strategies to identify, form, and express ideas. Level 2) Select and use sources of information, processes, and strategies with some confidence to identify, form, and express ideas. **Ideas** Level 1) Form and express ideas on a range of topics. Level 2) Select, form and express ideas on a range of topics.	**Speaking, writing and presenting** Level 3) Integrate sources of information, processes, and strategies with developing confidence to identify, form, and express ideas. Level 4) Integrate sources of information, processes, and strategies confidently to identify, form, and express ideas. **Ideas** Level 3) Select, form and communicate ideas on a range of topics. Level 4) Select, develop, and communicate ideas on a range of topics.	**Speaking, writing and presenting** Integrate sources of information, processes, and strategies purposefully and confidently to identify, form, and express increasingly sophisticated ideas. **Ideas** Select, develop, and communicate purposeful ideas on a range of topics.
Science	**Investigating in science** Extend their experiences and personal explanations of the natural world through exploration, play, and asking questions. **Communicating in science** Build their language and develop their understandings of the many ways the natural world can be represented. **Participating and contributing** Explore and act on issues and questions that link their science learning to their daily living.	**Investigating in science** Build on prior experiences, working together to share and examine their own and others' knowledge. **Communicating in science** Begin to use a range of scientific symbols, conventions, and vocabulary. **Participating and contributing** Use their growing science knowledge when considering issues of concern to them. Explore various aspects of an issue and make decisions about possible actions. **Living world – Ecology** Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.	**Communicating in science** Use a wider range of science vocabulary, symbols, and conventions. **Participating and contributing** Develop an understanding of socio-scientific issues by gathering relevant scientific information in order to draw evidence-based conclusions and to take action where appropriate. **Living world - Ecology** Investigate the interdependence of living things (including humans) in an ecosystem.
Social Sciences			Understand how people's management of resources impact on environmental and social sustainability

Definitions: Building Your Vocabulary

Apex Predator: are animals that are at the very top of the food chain. They hunt other animals but are not hunted themselves.

Australasian: involves a large area of land (a geographical region), located in the southern area of the globe including Australia, New Zealand, Indonesia and many other islands.

Biodiversity: is the variety of animals and plants found on this planet and how they interact with each other. The more biodiversity there is, the stronger an ecosystem is because small changes will have less of an effect on its stability. Every living thing depends on another.

Domestic: Living with or under the care of humans instead of living in the wild, such as a domesticated (pet) cat

Destructive: the act or process of damaging something so badly that it no longer exists or cannot be repaired.

Ecosystem: is a community of inter-connected living (such as animals, plants, fungi and bacteria) and non-living things (weather, sun, earth, climate, soil and atmosphere) in a particular area. The removal of any of these living and non-living things weakens the ecosystem.

Endangered: to be threatened with extinction, meaning that few of these animals exist now, and it is possible that there will be no more of these animals in the future.

Endemic: originating (native) or found or growing, from a certain area or region.

Eroding: is a process where natural forces like wind, ice, water and gravity cause rocks and soil to wear away. These forces may move bits of rock and soil to new places and change the shape of the land.

Fertilise: to make able to produce babies, seeds, fruit, or eggs. The male fish fertilises the eggs of the female.

Feral Cat: is a domestic cat that was lost or abandoned and has reverted to a wild state or a cat that was born to a stray or feral mother.

Feral Species: this can be a plant or an animal which has been brought into Australia from another country. This animal may have been a pet that has escaped (or a plant that has been cultivated) to being in the wild and now lives there.

Fish Harvester: a person registered by the Boards and engaged in commerial fisheries.

Generation: the entire body of people who were born at roughly the same time.

Landscape: is part of the Earth's surface (consisting of geographic features i.e. rivers, deserts, mountains, valleys, hills) that can be viewed at one time from one place.

Macropod: means 'big foot' and is used to describe the marsupial family Macropodidae, which includes kangaroos, wallabies, tree-kangaroos, pademelons, bettongs and several others. They are generally recognized by their long powerful hind legs and feet.

Marsupials: are a group of mammals that are known for carrying their young in their pouch.

Monotremes: are the most ancient living order of mammals, that lay soft-shelled eggs rather than giving birth to live young. Monotremata means "one-holed" meaning that both genders only have one opening at the rear of the body used for both reproduction and excretion. There are only two kinds of monotremes the platypus and echidnas.

Pollinators: When an animal and/or insect pick up the pollen of flowers and spread it, they allow plants, including many food crops to reproduce.

Predator: an animal that captures and eats another animal (prey).

Raucous: very loud or behaving in a noisy manner.

Reptile: cold-blooded animals that have scales and the ability to lay eggs.

Spawning: when the female fish lays eggs, and the eggs are fertisled by the male fish.

Species: refers to a kind of organism, for example, a group of living things that naturally produce young with other members of the same group but not with those of other groups.

Talons: a claw of an animal i.e. bird of prey Wedge-tail eagle it is its primary hunting tool.

Thrive: to grow strong and healthy.

Wildlife Corridor: is a strip or pathway of natural habitat that connects fragmented (separated) landscapes. It is a connection between two (or more) patches of land to provide safe passage for animals to travel through without having to cross potentially dangerous environments.

Definitions adapted from:

- www.kids.britannica.com/kids/browse/dictionary (2024)
- www.australian.museum (2024)
- www.education.nationalgeographic.org (2024)
- www.agriculture.gov.au (2024)
- www.wordsmyth.net (2024)

Image by: Team Workbench

Reflection Portfolio

Name: _____

**Bringing biodiversity back,
one adventure at a time!**

Are you ready for adventure, discovery,
and environmental responsibility,
while also playing Minecraft?

Image by: Team Workbench

Welcome to the Eco Detectives Reflection Journal!

This journal is designed to help you reflect on your experiences playing Eco Detectives. In this game, you will explore different biomes, learn about the plants and animals that live there, and complete challenges to protect the environment and increase biodiversity. Use this journal to record your thoughts, ideas, and learning as you play.

Section 1: My Eco Detective Profile

In this section, you will create your Eco Detective profile. In the space below draw a picture of your character and write a short description of your interests and goals in the game.

Draw a picture of your character here:
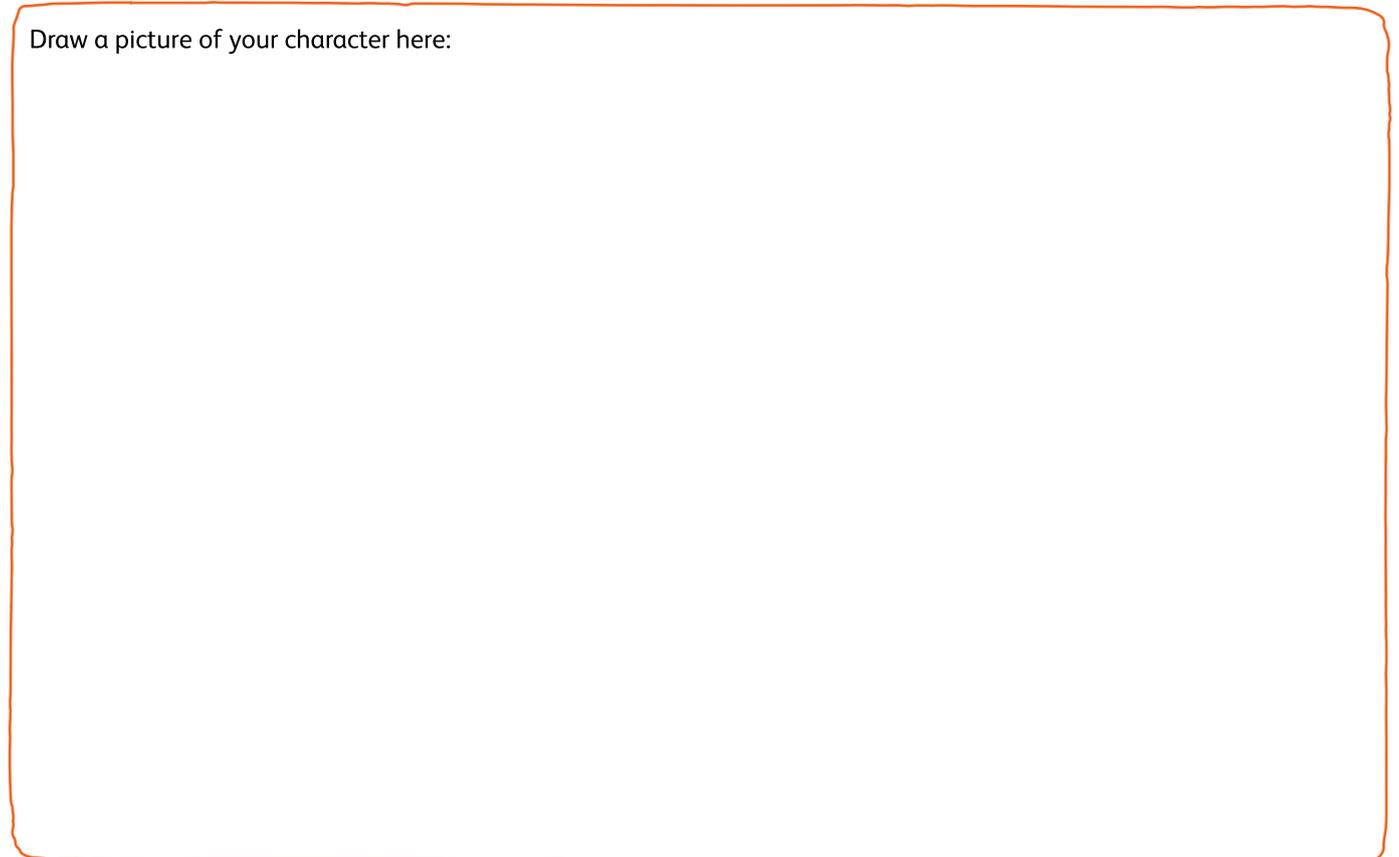
1. What are your interests?

_____

_____

_____

_____

2. What are your goals in this game?

_____

_____

_____

_____

Building Your VOCABULARY:

In Eco Detectives we are trying to increase biodiversity! In this section, we are going to increase your vocabulary. When we are learning about new things there are times when we come across a word we have NEVER heard of or seen before!

Each time you come across a new word we can unpack it using the activity below. Complete the boxes around the NEW WORD. You can place your FIRST TWO new words in the boxes below.

Definition:

Sentence:

NEW WORD:

Examples:

Illustration:

Non-examples:

Definition:

Sentence:

NEW WORD:

Examples:

Illustration:

Non-examples:
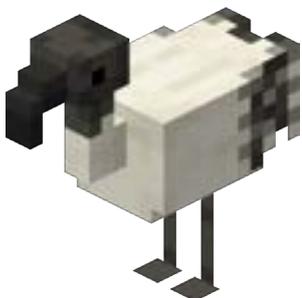
NOTE: More Vocabulary boxes will be placed at the end of this Journal for you to use.

Image by: Team Workbench

Section 2: Exploring Biomes (plants)

In this section, you will reflect on your experiences exploring different biomes in the game and where you live.

Draw and **describe** TWO plants you have discovered in the Eco Detectives biome and TWO plants that live outside your classroom.

Discovered Plants:

Eco Detectives Plant Drawing 1	Description (colour, height, patterns, biome, other)

Why did you choose this plant?

_____

_____

Eco Detectives Plant Drawing 2	Description (colour, height, patterns, biome, other)

Why did you choose this plant?

_____

_____

_____

Image by: Guy Dixon

Outside Plant Drawing 3

Description (colour, height, patterns, biome, other)

Outside Plant Drawing 4

Description (colour, height, patterns, biome, other)

When you are exploring the different **plants**, write about the **challenges** you have faced and the things you have **learned**.

Challenges included: _____

_____

_____

Things I have learned: _____

_____

_____

Are there any plants you didn't like? Why was this so? _____

_____

_____

ECO DETECTIVES

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For the Wild

Section 2: Exploring Biomes continued... (animals)

In this section, you will reflect on your experiences exploring different biomes in the game and where you live.

Draw and **describe** TWO animals you have discovered in the Eco Detectives biomes and TWO animals (or insects) that live outside your classroom.

Discovered animals:

Eco Detectives Animal Drawing 1	Description (colour, height, patterns, biome, legs, other)

Why did you choose this animal?

_____

_____

_____

Eco Detectives Animal Drawing 2	Description (colour, height, patterns, biome, legs, other)

Why did you choose this animal?

_____

_____

_____

Image by: Team Workbench

Outside Animal/Insect Drawing 3

Description (colour, height, patterns, biome, legs, other)

Outside Animal/Insect Drawing 4

Description (colour, height, patterns, biome, legs, other)

It's exciting to discover new animals!

When you are exploring the different **animals** in the biomes, write about the **challenges** you have faced and the things you have **learned**.

Challenges included: _____

_____

_____

Things I have learned: _____

_____

_____

Are there any animals you would like to find out more about? What would you like to know? _____

_____

_____

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Section 3: Protecting the Environment

In this section, reflect on your experiences completing the challenges to protect the environment in the game. For example, building a sanctuary for bilbies, herding cows, counting the animals, anything!

You can write about the **actions** you have taken, the **impact** you had, and the **skills** you have developed.

Eco Detective Challenge: _____

What actions did you take to overcome the challenge? _____

_____

_____

_____

_____

_____

_____

_____

What impact (positive/negative) did your actions have when trying
to protect the environment OR when trying to increase biodiversity? _____

_____

_____

_____

_____

_____

_____

_____

How did you feel after seeing the impacts of the actions you took? _____

_____

_____

_____

_____

_____

_____

_____

Image by: Team Workbench

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What skills have you developed from this (increased knowledge in Minecraft, understanding more about this biome, learning about a new animal/s, other)? Give two examples. _____

_____

_____

_____

_____

_____

_____

_____

How could you use the skills you developed? _____

_____

_____

_____

_____

_____

_____

Image by: Team Workbench

Section 4: Making Connections

Reflect on how your actions or learnings in the game **relate to your life outside of the game**.
List the ways you can apply what you have learned in the game to…
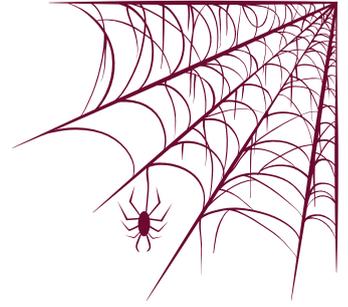
- ■ protect the **environment** in your community.

- ■ increase **biodiversity** in your community.

For example:
Environment: In my community, I can fish in the right area to protect the young fish.
Biodiversity: I can increase biodiversity by planting native flowering plants to attract birds and bees.

Environment – In my community, I can...

_____

_____

_____

_____

Biodiversity – I can increase this by...

_____

_____

_____

_____

Draw a picture of yourself taking **action** here

Conclusion:

We hope that this journal has helped you reflect on your experiences playing the game and deepen your understanding of biodiversity and environmental conservation.

Think about what you have learned in the Eco Detectives game and finish the following sentences:

I used to think... _____

_____

_____

Now I think... _____

_____

_____

What did you enjoy most about the Eco Detectives game? _____

_____

_____

Is there anything you would like to learn more about? _____

_____

_____

What were some of the most interesting discoveries you made while playing the Eco Detectives game?

About the biomes?	About the environment?	About yourself?

Did you achieve the goals you set out for yourself? _____

_____

How will I use what I learned in the future? _____

_____

_____

**Keep exploring, learning, and making a positive impact on the world around you.
Congratulations on completing the Eco Detectives Reflection Journal!**

Image by: Team Workbench

ECO DETECTIVES

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For the Wild

Building your VOCABULARY:

Each time you come across a new word we can unpack it using the activity below.
Complete the boxes around the **NEW WORD**.

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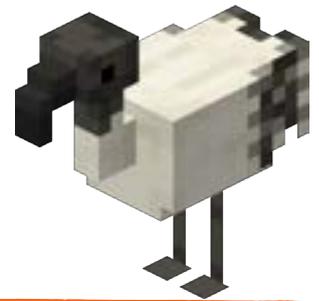
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