

Global Conservation

Teaching and Learning Resource Year 9 and 10

How connected are we to wildlife?

Introduction

As a Zoo-based Conservation Organisation, our mission is to be a leader in the protection of wildlife and motivate all visitors to take up actions for conservation. The Global Conservation program explores the issues and ethics relating to the protection of wildlife.

Strongly linking to the Victorian Curriculum's Geography concepts and skills as well as Ethical Capabilities. Students will explore their own values and ethics with regards to interconnectedness of wildlife, environments and consumerism.

Students will be provided with opportunities to discuss and collaborate with peers, drawing links between the social, environmental and economic issues that surround wildlife conservation. Ultimately, students will develop the understanding and skills to lead a campaign within their school community to make tangible impacts for conservation.

Throughout the Global Conservation program students will:

- Participate in two educator facilitated experiences
- Gain an in-depth understanding of one of Zoos Victoria's conservation campaigns
- Be encouraged to become an effective leader in conservation.

Curriculum Links

Victorian Curriculum levels 9-10

This program supports the learning area of Humanities (Geography) and the capabilities of Critical and Creative Thinking, Personal and Social Learning, as well as Ethical Understanding.

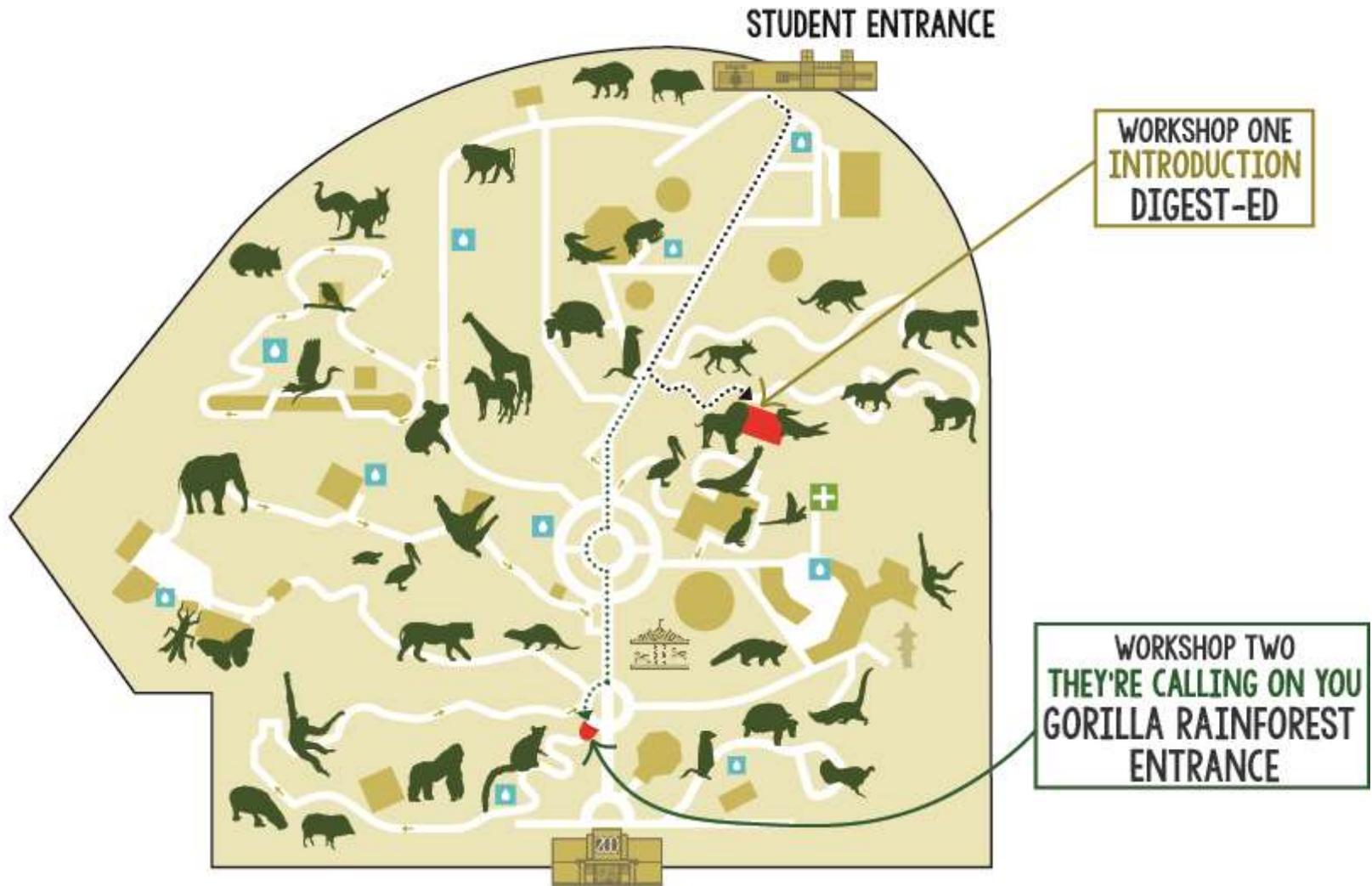


The Melbourne Zoo Learning Experiences Team, respectfully acknowledges the Wurundjeri People, the Traditional Custodians of the land on which we work, live and learn. We recognise their continuing connection to land, water and wildlife and pay respect to Elders past, present and emerging.



Onsite Activities

The program consists educator lead activities and discussion at two locations – Digest Ed and Gorilla Rain Forest. Students will have time to have a break and quick snack between the two sessions.



Global Conservation Program Outline

ACTIVITY	TIMES & LOCATIONS
<p>Workshop 1 Our Educator will tune students into the ethics of interconnectedness and consumerism.</p>	<p>Workshop 1 is held at the time found on your booking confirmation. This workshop will be held in the DigestEd Learning Space, located next to the Lion enclosure in the Lion Gorge Precinct. This space is not shared with the public.</p>
<p>Workshop 2 Onsite discussion directly discussing the issues surrounding one of Zoos Victoria's campaigns.</p>	<p>Workshop 2 is held on the hour, after Workshop 1 finishes. This workshop is located in the Gorilla Rain Forest. Meet your Educator at the Elephant Barns. This space is shared with the public.</p>
<p>Student Led inquiry - Optional Onsite Activity Students select a species and campaign to critically examine and complete the following flow chart to practice the Connect-Understand-Act model.</p>	<p>Task can be complete either before or after the workshop with a Zoo Educator. The task will require students to explore the Zoo and locate inspiration to develop their own conservation campaign.</p>

PLEASE NOTE:

If you arrive after your scheduled education session time we may be unable to accommodate your students, due to scheduling restrictions. In this event your education program may be cancelled.



Pre-Excursion Activity



Data Analysis

Comparison of Malaysia and Australia

Victorian Curriculum Links: This activity integrates Geography, Biomes and food production and Geographies of interconnection Level 9 and 10.

Website: 'Gap Minder': <http://www.gapminder.org/tools>

Activity: Students are able to use Gap Minder to make comparisons between countries and also examine the changes to countries over time.



Figure 2



Figure 1

Loading the page you will have a default scatterplot comparing Income and Life Expectancy (Figure 1);

Possible questions;

- Is there a correlation between life expectancy and income? What is the pattern?
- What trends can you notice about the world regions and life expectancy/income?

Change the **y-axis** to represent **Cell phones per 100 people**. This is done by selecting the label of the axis. To compare between two countries **select Australia and Democratic Republic of Congo**. Follow their trails of development over time by clicking the play button at bottom left (Figure 2).

Possible questions;

- What are the similarities and differences in the data between Australia and Democratic Republic of Congo?
- How has the life expectancy and income changed overtime for Democratic Republic of Congo and Australia?
- Why might there be a lack of data for malnutrition in Australia?
- Are there any other points of interest or comparisons that you would like to investigate further?



Website: 'Global Forest Watch': <http://www.globalforestwatch.org/map/>

Activity: Students can examine the amount of 'Tree Cover' Loss and compare between different countries or regions.



Figure 3

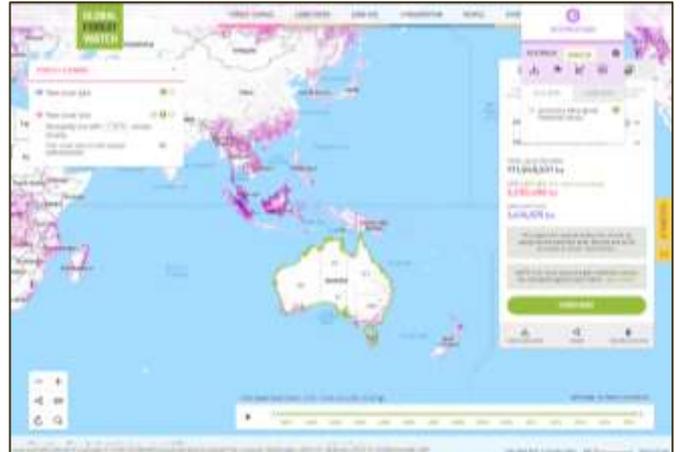


Figure 4

Loading the page you will have a default map displaying Tree Cover Loss and Gain across a Global Map (Figure 3). Students can change the view by turning 'off and on' the shading by clicking the 'eye' symbol in the 'Forest Change' box. You can also see the change over time using the play button down the bottom.

Possible questions;

- What do you notice is happening to the global tree cover?
- Which regions appear to be impacted by these changes?

Compare the Tree Cover Loss of **Australia** and **Democratic Republic of Congo** by selecting **Country Data** in the top right and then selecting 'analyse'.

Possible Questions;

- What is the percentage of Tree Cover Loss for each Country?
- Besides natural decrease of Tree Cover, what might be some causes of the Loss of Tree Cover?

Select the 'Land Use' from the top of the map and turn on the different types of land use.

Possible questions;

- What appears to be the greatest land use affecting Tree Cover in Australia and Democratic Republic of Congo?



Website: 'Australian Atlas of minerals resources, mines and processing centres':

<http://www.australianminesatlas.gov.au/aimr/commodity/tantalum.html>

Activity: Using this additional information about resource production, alongside the other information they've discovered, students can start to apply their learnings and come up with questions related to tantalum production.

"Based on estimates published by the United States Geological Survey (USGS) and Geoscience Australia, the world resources of tantalum in 2012 totalled 156 kt. The world's largest holder of tantalum resource is Brazil with an estimated 88 kt, followed by Australia with 60 kt and Canada and Ethiopia with 4 kt each.

Using USGS data, Geoscience Australia estimated world production of tantalum in 2012 to be 765 tonnes (767 tonnes in 2011). Production in 2012 was dominated by Mozambique, with 260 tonnes, which amounted to about 34% of world output. According to the USGS, other main producers were Brazil with 180 tonnes, Congo (Kinshasa) with 95 tonnes, Rwanda with 90 tonnes and Nigeria with 50 tonnes."

Possible question;

Australia and Canada are holders of Tantalum resources, thinking about what you learnt on GapMinder, why might these countries have low production?



Pre-Excursion Activity



The Concept Game

Issue of 'Justice' explored through Illegal Coltan Mining

Victorian Curriculum Links: This activity integrates Ethical Capabilities, Understanding Concepts Level 9 and 10 with Geography, Biomes and food production and Geographies of interconnection Level 9 and 10.

Reference: 'Connecting Concepts: Thinking Activities for Students' by Clinton Golding

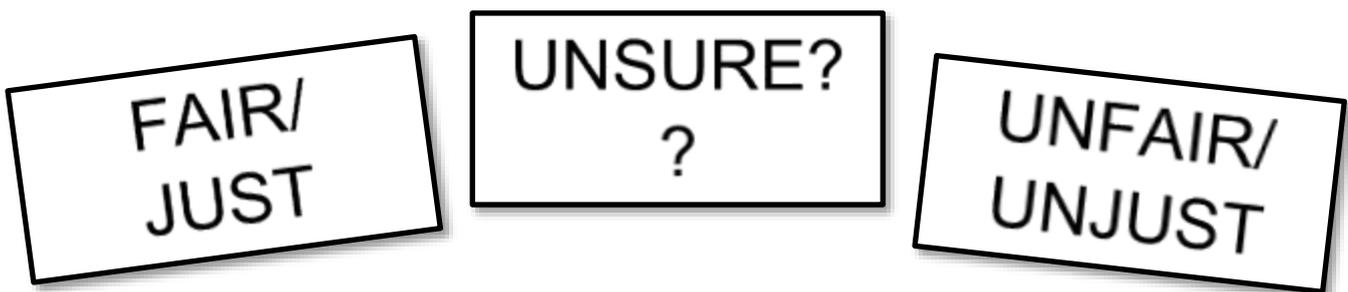
Excerpt from reference:

The concept being explored here has two means- 'justice' and 'fairness', they are roughly the same concept and either name can be used. The major question we are exploring are 'How should things be distributed?' or 'Who should get what?'. All children have said 'that's not fair' at some stage of their lives when things haven't gone the way they thought they should go. This concept game explores what we might mean when we say 'that's not fair' or the adult equivalent 'that's unjust'.

We do seem to understand that the notion of fairness or justice has something to do with what someone has a right to or what they deserve. It is fair if they have a right to do it, unfair if they didn't deserve it. However there are many different competing notions about a person's rights or what they deserve, so there are many different notions of fairness. In this concept game students should be trying to identify the principles of fairness that we use, and deciding which they think are best.

The activity can be used to lead a group discussion, students are to assign each case to one of the categories. When placing the case, the students need to explain their reasoning, students can support or challenge the decision. It may be important to remind students that discussions should be kept respectful and students are encouraged to provide constructive additions or questions.

Labels for categories



List of Cases

Needs
A starving person steals a loaf of bread
Some people have excessive products in their homes while others have no homes
Some workers can only find jobs that harm themselves or the environment
All creatures and humans have the same rights to food, shelter and water
Some animals compete with humans for their survival needs
A human might kill an animal for food
Equality or difference
Laws to protect environments are different in different countries
The value of mineral resources depend on global markets and demands
Some people are poor and others are rich
A government gives subsidies to mineral companies for assistance
Gorilla, monkey and bird lives are less valuable than humans

Ability and fairness
Developing countries clear 'cheap land' such as natural forest to make land for cash crops
Some countries are more developed and other are not
Educated people get better jobs than uneducated people
Transnational Corporations can avoid unfavourable legislation by operating in particular countries
Political leaders can use their power to change laws
Some countries have natural resources that benefit developing their economies

Hard work
Some people in developed countries get good jobs without trying
Rangers that work to protect endangered gorillas are killed while working
Estimated 2 out of 5 of children aged 5 to 14 work in the Democratic Republic of Congo
Employees who cannot pay a debt to their employer are to work for free

Money
CEOs of technology companies can earn \$20 million annually
Average wage in the Democratic Republic of Congo is \$518 annually
Mark-up for manufacturing costs to sale price for a smartphone can be \$300 to \$600

Privileges
Sometimes you can't be informed about products you purchase
Rich nations have high levels of consumerism
Some people have no choice, but to consumer bushmeat for required nutrition
3 in 4 children will have a mobile phone at the age 14 in Australia
All students have access to information through technology

Adapted from 'Connecting Concepts: Thinking Activities for Students' by Clinton Golding

Pre-Excursion Activity



Hexagonal Thinking

Exploring perspectives from multiple sources through conflict minerals in Congo

Victorian Curriculum Links: This activity integrates Critical and Creative Thinking, Questions and Possibilities Level 9 and 10 with Geography, Geographies of interconnection Level 9 and 10.

Reference: No Tosh, Design Thinking, website reference: <http://lab.notosh.com/making-connections-with-hexagonal-thinking>

Excerpt from reference:

If your students have been deep immersing themselves in conflicting, complex ideas for some time, there will come a point when it's essential to make sense of things. One effective tool for beginning to synthesise ideas is Hexagonal Thinking.

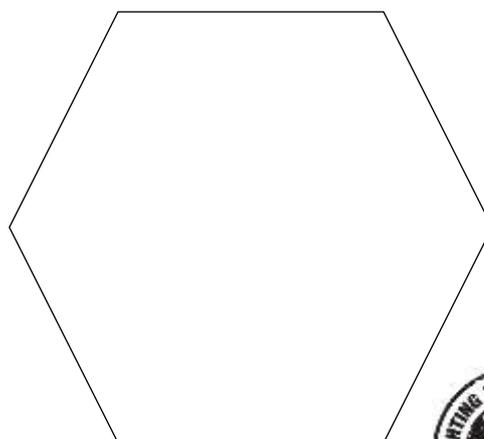
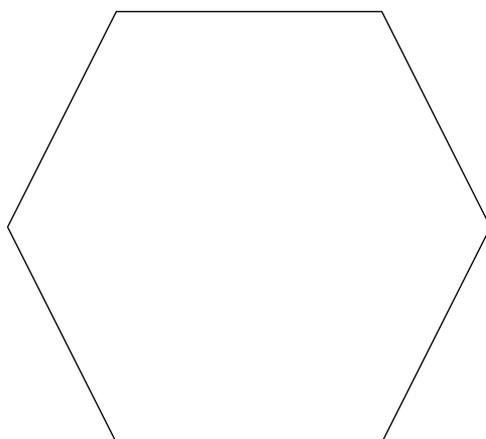
It is a difficult mental task to work out what connects to what, which ideas are more outliers on their own, and which concepts tie to the core of the challenge we're exploring. Linear thinking, where 'a' causes 'b' to happen is great for textbook writers, but isn't the way the world works.

Hexagonal Thinking is where either student or teacher writes key concepts on hexagonal cards, at the end of a period of learning, where the content behind each 'headline' is relatively clear to a team of learners. The students then place the cards together in the way that makes most sense to them - some ideas will connect to up to five others, others will lie at the end of a long sequential order, others still will appear in small outlying positions, on their own.

For the activity you need:

Hexagonal papercuts or post-its

1. Prepare hexagonal cutouts in advance with key ideas as a way to check understanding of complex concepts
2. Prepare the hexagonal cutouts with your class as a way to allow them to explore the ideas with peers
3. Provide blank hexagonal cutouts for students for them to make their own connections



Onsite Activity



Campaign Plan

Developing skills to successfully motivate other to take conservation action

Victorian Curriculum Links: This activity integrates Critical and Creative Thinking, Questions and Possibilities Level 9 and 10 with Geography, Geographies of interconnection Level 9 and 10.

Reference: Zoos Victoria's Conservation Campaigns: <https://www.zoo.org.au/get-involved/act-for-wildlife>

As a zoo-based conservation organisation, we have the opportunity to inspire our 1.7 million visitors and the wider community about our species and conservation. We utilise the Connect-Understand-Act model to:

- Connect with wildlife through emotionally engaging experiences
- Develop Understanding of the problem the species is facing
- Inspire Actions to decrease the threatening processes that are affecting these species and their habitats

Through the signage, interactive elements and presentations onsite, we try to lead our visitors to change their behaviours and take conservation actions. Almost every animal on site is connected to one of Zoos Victoria's Conservation Campaign.

As students explore the zoo, students can select a species and campaign to critically examine and complete the following flow chart to practise the Connect-Understand-Act model. This will enable students to develop the skills required to lead the school community in their chosen campaign, and make a significant contribution to conservation action.

If you wish, print off the follow two pages for students to complete during their visit. This Task can also be completed as a post-visit activity.



Campaign Plan

Species selected



How might you be connected to this species?

Direct connections? Indirect connection?



Explain the problem that this species is facing.



What action can be taken to limit the problem's impact?



How will you lead your school community to support this campaign?

Who might you target? How you'll communicate information? Use the locations marked on the map as inspiration.

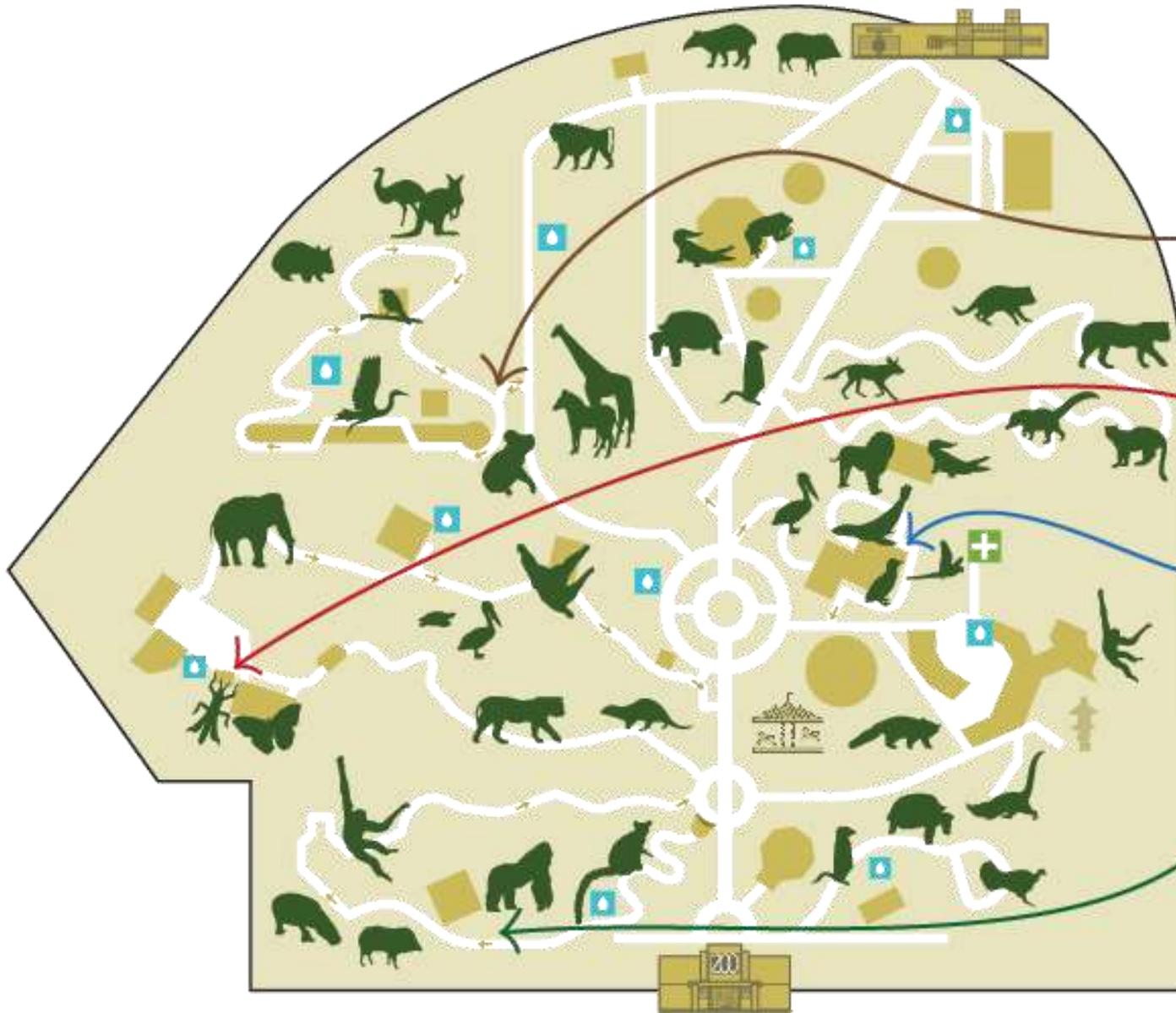
This week I will...

This month I will...

Next month I will...



STUDENT ENTRANCE



LOOS YOURSELF MAZE
 USING HUMOUR AND INTERACTIVE SECTIONS, WE CONNECT THE VISITORS TO OUR LOCAL SPECIES.

LORD HOWE ISLAND STICK INSECT
 IT'S DIFFICULT TO GET VISITORS TO CARE ABOUT AN INSECT. THIS AREA USES A NUMBER OF TECHNIQUES TO CREATE A CONNECTION WITH VISITORS.

WILD SEAS
 THE VIDEO IN THIS SPACE BUILDS A STRONG EMOTIONAL CONNECTION TO WILDLIFE AND THE IMPACT OF HUMANS.

GORILLA RAINFOREST
 IN THIS AREA WE DRAW MANY CONNECTIONS TO WHAT OUR VISITORS CAN DO TO HELP PROTECT GORILLAS.

Additional Resources

Websites

- Teacher Resource Packs
www.zoo.org.au/education/teacher-resources
- Zoos Victoria Vimeo channel
<https://vimeo.com/zoosvictoria>
- Conservation Campaign information
<http://www.zoo.org.au/get-involved/act-for-wildlife>
- Global Forest Watch
<http://www.globalforestwatch.org/map/>

Videos

- TEDTalk: The world is full
https://youtu.be/d_7cCUl63K4
- Wake Up Call
<https://vimeo.com/84299736>
- Behind The News: Gorilla Girls
<http://www.abc.net.au/btn/story/s4530722.htm>

Articles

- The Conversation: Annual upgrade? How your mobile contract is really costing the earth
<https://theconversation.com/annual-upgrade-how-your-mobile-contract-is-really-costing-the-earth-43589>
- ABC: Is our need to have the newest device hurting the environment?
<http://www.abc.net.au/news/2016-09-09/environmental-impact-of-the-iphone/7825360>
- The Guardian: Impact of Phone mast Technology on remote Congolese town
<https://www.theguardian.com/global-development/gallery/2017/jan/10/democratic-republic-congo-impact-of-phone-mast-technology-on-remote-congolese-town-in-pictures>

