

Endangered animals

Unit Structure	Challenge-based learning: ://ali.apple.com/cbl/
Unit description	As background to this unit students investigate the reasons for animal extinctions. They then investigate an animal that is an endangered species and work in small groups to develop solutions or actions to preserve that animal species.
Foci of lessons	<p>Lesson 1: Why do animal species become extinct? They play an interactive game as an introduction. Investigations of 10 extinct species using the internet by a class. Students are put into groups to investigate 2 to 3 species. Each group finds out key information about the species [including habits, date and reason for extinction]. The class comes together to plot key information onto a timeline.</p> <p>Lesson 2: Completed class timeline is discussed. Each group reports on their findings for Lesson one. Whole Class completes matrix [See example] After completion students can analyse the data [Think, Pair, Share] Note extinction rates, common reasons for extinction. Begin research on Endangered Animal</p> <p>Lesson 3: Continue research on one endangered species [e.g.OrangUtan, Kakapo etc.] Why is it under threat? What can be done to increase numbers of this species. Students explore some content about this animal, they develop a solution / action to this Challenge. This is to be completed as a multimedia presentation.</p> <p>Lesson 4: Continue with solution / action multimedia presentation.</p> <p>Lesson 5: Complete with solution / action multimedia presentation.</p> <p>Presentation and assessment session.</p>



Knowledge, Understanding, Skills and Values	<p>Students explore the issues facing <i>Endangered Animals</i> through the five Cs of 21st century learning: Comprehending Digital Content; Communicating; Collaborating; Creating; and Critical Thinking.</p> <p>More specifically students:</p> <ul style="list-style-type: none"> • Learn about extinct and endangered animals through a variety of digital content such as websites, video, online maps, podcasts etc. • They look for reasons why some species can become endangered or extinct. • They focus on one endangered species and critically think about strategies to increase species numbers. • As a group they collaborate to develop their actions and solutions on this issue. • The group then collaborates to create a campaign to increase the numbers of their chosen species. This will be a multimedia campaign combining video, podcast, hyperlinks to other useful websites, text, and images. • This content will be packaged into a multimedia presentation or website to communicate their actions and solutions to others. Other students can learn, comment and collaborate using this content.
Focus questions [Following the CBL Structure]	<ul style="list-style-type: none"> • The Big Idea - Extinction • The Essential Question – How can we stop animal species from becoming extinct? • The Challenge – [An actionable statement]. Many animal species are endangered. Develop an action plan that provides for a solution to this problem. Focus on <u>either</u> the OrangUtan from South East Asia or the Kakapo [a flightless bird from New Zealand] as your case study
Assessment task and strategies	<p>Students will look at digital content on extinct animals. They will look at causes of extinction of a few animals in small groups. They will then come together as a class and share this knowledge in the form of a matrix. Fruitful discussions should then occur looking at timing of extinctions, locations of extinctions and most importantly common reasons for extinctions. They will play an interactive game either as a class on an interactive whiteboard or in pairs on a computer on this them. After playing the game a model such as “Think, Pair, Share” can be used to generate further discussion on this topic.</p>

Select and use a variety of teaching strategies that support learning of core concepts and skills being taught.


The teacher explores the concept of extinction through a series of activities that promote guided discovery. This enables students to work at their own pace.

Learning intentions for Lesson 1:	<p>Students learn about the structure of Challenge-Based Learning, individual, teacher and group expectations.</p> <ul style="list-style-type: none"> • Assessment Rubrics are shown and explained. • What does <i>extinction</i> mean? • Teacher sourced digital content about species which are now extinct is presented to students. <p>e.g. ://www.extinctanimal.com/ ://www.dpiw.tas.gov.au/inter.nsf/WebPages/BHAN-53777B ://www.50birds.com/extan/gextanimals1.htm ://museumvictoria.com.au/melbournmuseum/discoverycentre/dinosaur-walk/meet-the-skeletons/diprotodon/</p> <p>Groups are organised [should be about 4-6 students, mixed ability is also encouraged]</p>
Activities	<div>★ 1</div> <ul style="list-style-type: none"> • Interactive Game e.g. Elephant Odyssey from San Diego Zoo ://www.elephantodyssey.com/game/ • The teacher finds information about 10 extinct animals e.g. Tyrannosaurus Rex, Diprotodon, Irish Elk, Cave Lion, Auroch, Dodo, Steller's Sea Cow, Great Auk, Quagga, Thylacine & Caspian Tiger. Each group looks at 2 extinct animals. Each group needs to read the web content and find out the following. When did the species become extinct? How long ago was that? Where did the extinction occur? What were the causes of the extinction? <p>After this research all groups come together to share their findings and listen and comment on the findings of other groups.</p> <p>The dates of animal extinctions are plotted onto a timeline.</p>

Learning intentions for Lesson 2:		Students learn about: <ul style="list-style-type: none">• Reasons for extinctions. Are there common themes?• Vulnerability of species to extinction. Are some more vulnerable than others?• What does endangered mean?																																												
Activities	<div>2</div>	<ul style="list-style-type: none">• Students look at the information placed on the matrix from lesson one, e.g. <table><tr><th>Extinct Species</th><th>Date of Extinction</th><th>How many years ago was the extinction?</th><th>Location of last of the species</th><th>Reasons for Extinction</th></tr><tr><td>Tyrannosaurus Rex</td><td>65 Million years ago</td><td>65 Million years</td><td>North America</td><td>Extinction Event</td></tr><tr><td>Diprotodon</td><td>40,000 years ago</td><td>40,000 years</td><td>Australia</td><td>Climate change, human encroachment and hunting</td></tr><tr><td>Irish Elk</td><td>5700 BCE</td><td>7711 years</td><td>Europe</td><td>Over hunting and climate change</td></tr><tr><td>Cave Lion</td><td>10 AD</td><td>2001 years</td><td>Europe</td><td>Climate change.</td></tr><tr><td>Aurochs</td><td>etc.</td><td>etc.</td><td>etc.</td><td>etc.</td></tr><tr><td>Dodo</td><td>etc.</td><td>etc.</td><td>etc.</td><td>etc.</td></tr><tr><td>Steller's Sea Cow</td><td>etc.</td><td>etc.</td><td>etc.</td><td>etc.</td></tr></table> <p>Questions they could discuss: Are there common reasons for extinction? [Why do animals become extinct? e.g. <i>Climate Change, Hunting, Loss of habitat, Loss of food source</i>. Is the rate of extinction increasing? Are some species more vulnerable to extinction than others? e.g. <i>Species only exists in one location, Food or fuel source, Prized hunting trophy, Threatened humans or their activities, Difficulty escaping / hiding the babies / eggs are easy to destroy</i>. Can humans change conditions which cause extinctions?</p> <p>Discussion about what does the term endangered species mean? Students are introduced to two endangered species, the OrangUtan from South East Asia or the Kakapo [a flightless bird from New Zealand]. The teacher has prepared some digital content about these animals, e.g. images, websites, videos, text etc. Each group agrees to specialize on one on these two animals for their Challenge Based Learning project.</p> <p>Students discuss what their solution and action to the Challenge. <i>Many animal species are endangered. Develop an action plan that provides for a solution to this problem. Focus on <u>either</u> the OrangUtan from South East Asia or the Kakapo [a flightless bird from New Zealand] as your case study.</i> Graphic organisers, either pen and paper or digital, such as the Open Source <i>FreeMind</i> would be useful here.</p> <p>Revise the assessment rubrics [below]. The teacher needs to give the students time to think, talk, explore, hypothesize and share. The teacher is a resource for the students. Students should direct this part of the activity.</p>					Extinct Species	Date of Extinction	How many years ago was the extinction?	Location of last of the species	Reasons for Extinction	Tyrannosaurus Rex	65 Million years ago	65 Million years	North America	Extinction Event	Diprotodon	40,000 years ago	40,000 years	Australia	Climate change, human encroachment and hunting	Irish Elk	5700 BCE	7711 years	Europe	Over hunting and climate change	Cave Lion	10 AD	2001 years	Europe	Climate change.	Aurochs	etc.	etc.	etc.	etc.	Dodo	etc.	etc.	etc.	etc.	Steller's Sea Cow	etc.	etc.	etc.	etc.
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Learning intentions for Lesson 3:		<p>Students learn about:</p> <ul style="list-style-type: none"> • ICT skills that they need for this project, e.g. video shooting & editing, podcasting, basic web design, graphic design etc. The teacher might teach this, but this instruction might be taken by an ICT specialist teacher. Mentoring and peer to peer instruction by students in the class or at other levels are possible alternatives. • Turning the solution or action from their graphic organiser in Lesson 2 into information and direction on their multimedia presentation.
Activities		<ul style="list-style-type: none"> • Students plan out their group's multimedia presentation. Planning should indicate spaces devoted to introductory content and solution and action to the Challenge. Students should plan out what they are creating, what ICT skills they are using and need to know and how the group will operate. Revision of the rubrics here will assist students focus. • Again, the teacher needs to give the students time to think, talk, explore, hypothesize and share. The teacher is a resource for the students and provides ICT assistance. Students should direct the development of the multimedia presentation.
Learning intentions for Lesson 4:		<p>Students learn about:</p> <ul style="list-style-type: none"> • More ICT Skills that they need for this project, e.g. video shooting & editing, podcasting, basic web design, graphic design etc. Students are taught when they need the skill, i.e mini tutorials. • Increasing the sophistication of their multimedia presentation and focussing on improving the solutions and actions to The Challenge.
Activities		<ul style="list-style-type: none"> • The teacher should start with a quick sharetime so each group articulates their progress and other students find out what other groups are doing. • The teacher may wish to bring the class together to re-iterate The Challenge and The Guiding Question • The teacher should also remind student of the content of the assessment rubrics. • Students continue to construct their multimedia presentation [this is the bulk of lesson time]. • Students may want to "road test" their ideas by using the using the teacher or other students as a focus group.

Trial the use of teaching strategies that engage students in either: solving problems using recently acquired knowledge and techniques; or hypothesising and justifying opinions or courses of actions; or generating new ideas, products, or ways of viewing things .

Learning intentions for Lesson 5:		Students learn about: <ul style="list-style-type: none"> • Revising their nearly complete presentation [both in terms of ICT skills demonstrated and content, actions, solutions related to The Challenge]. • How to present their work to the rest of the class and the teacher. • Responding to questions or comments. • How an oral presentation is enhanced by a multimedia presentation. • How to self assess their work
Activities		<ul style="list-style-type: none"> • Final completion of multimedia presentation • Proof reading of presentation • Practice of oral presentation that will accompany the multimedia presentation. What is being said? Who is saying what? Which parts of the presentation will be played to the audience? • Responding to questions or comments. • Students should be able to have self assessed their work before their presentation by marking it against the rubrics. • Students can compare their self-evaluation against that of the teacher and peers. • Publication of final presentations on CD/DVD or school intranet.

Assessment Rubrics	1. ICT Skills 2. Student Made Content, Action & Solution 3. Group Dynamics
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Teacher reflection
 Through this series of lessons I intended for students to develop collaborative skills. In particular for them to explore, discuss, analyse and critique information.