Science Unit of Work
Endangered Species

VELS Level 3
Grade(s): 3/4
Lesson Plan – Lesson 1

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<th>Endangered Species</th>
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Main Focus for Lesson 1:

- Understanding terminology of the different conservation status levels
- Investigating what species that are categorised in what particular conservation status level of: threatened, endangered, critically endangered and extinct

STANDARD(S)/LEARNING OUTCOME(S):

Standard: *students classify a range of materials and classify according to information*

Learning Outcomes:

- Define the levels of conservation status of species
- Investigate the criteria of the different levels of conservation
- Classify species according to the levels of conservation

Indicators

- Accurately define the various levels of conservation
- Accurate identification of the criterions of the different levels of conservation
- Correctly connect species to the appropriate conservation status according to the level criteria

ASSESSMENT:

Success Criteria:

- Clearly articulate the definition of each conservation status; least concern, threatened, endangered, and extinct.
- Examine the different statuses of conservation and the principles in which species are ranked
- Actively participate in the class discussions regarding conservation status
- Actively participate in the research and connection of species ranked in the different levels
- Participate in group research regarding the animals classified in each level
Opportunities to Provide Feedback:

- Questioning students during the introduction to check the range of animal understanding students have and prompting questions to draw out more knowledge
- Prompting students thinking about the levels of conservation status by directing thinking to prior understandings (animals listed)
- Teacher provides verbal feedback to students during the completion of the investigation task while students work in expert groups
- Provide feedback to students who support other students learning, by answering questions raised by other students

TEACHING FOCUS:

A. Associate Teacher:
In this lesson, the associated teacher has requested that I focus on ensuring all students have equal opportunity to participate in the lesson, specifically independent practice, but to also ensure all students can provide input at any level.

B. Personal skill development:
In this lesson I will aim to ensure that all students receive feedback to support their learning and strengthen understanding, at various stages of the lesson.

BACKGROUND TO THE LEARNING:

A. Teacher
- http://www.endangeredspecie.com/
- http://worldwildlife.org/species/

B. Pupil
- Initial questioning about animals and key terms

LESSON RESOURCES:

- Talking Stick
- Markers (Various Colours)
- Whiteboard
- Butchers Paper
• Investigation Template -Appendix A (x24)
• Extension Activity – Criterion Statements – Appendix B (x10)
• Conservation Status Level Titles on coloured card for Conservation Level Wall
• Small sheets of paper for animal species for Conservation Level Wall

CONTENT OF LESSON:

A. Introduction 10 mins

(The Science Block commences after Recess)

• After recess students will enter the classroom and be seated on the floor, which is routine to the students. Teacher gains student attention by using the consistent and familiar strategy “If you can hear me say hey” (Teacher begins by whispering softly “if you can hear me say hey.” As students are noisy, one or two children will hear the teacher and begin to say “hey.” The teacher continues to say “if you can hear me say hey and as more students hear they join in the chant. After a short time all students will be saying hey, without the teacher having to raise their voice, as they are continuing to whisper, while the children are chanting “hey.”)
• Once the teacher has gained the attention of the class, they will inform the students that they will be beginning a new unit in science. “Today we will start our new science mini unit, which will be on Endangered Species.
• Teacher informs students about what they want them to learn from today’s lesson and how they will show this (see success criteria)
• Teacher will explain that when learning about Endangered Species, students will develop an understanding that animals are classified according to their population numbers, of how change in the lives of animals (an all species in general) impacts on their ability to survive, and how people can help to save animals from dying out.
• Teacher begins to engage the students in the topic by beginning with the question “What is your favourite animal?” Discuss this question with the person sitting next to you. (Teacher may need to pair students if required) Remind the students that it does not have to be an animal we see all the time, it might be an animal you have seen at the zoo, or out in the wild.
• Teacher gains class attention and asks students to share with the whole class, what their favourite animal is.
• Teacher has a talking stick and passes it to one student. The student with the stick will share what their favourite animal is to the class and then pass on the stick to the next student. This will ensure all students have the chance to share what their favourite animal is.
• Teacher writes student responses on a sheet of butchers paper (When there is more than one of the same animal mention by students, do not disregard them, but instead tick or put a stroke next to name tallying up the interests of the students (teacher may wish to use this as a resource in a maths lesson)
  ○ If there is not much variety on the board, open up the discussion asking children if they have other animals they like.
B. Development  50 mins

What is a conservation status?

- Teacher asks students to look at the list on animals they have developed on the board.
- Teacher poses the following questions to the students:
  - “What animals on the list do we see all the time or that can be found everywhere?”
  - “What animals do we see sometimes?”
  - “What animals have we only seen at the zoo?”
- In the event that an extinct animal is written on the board, although very unlikely, but possible, teacher may ask “what animals have we never seen?” (this will promote deeper thinking, as it is like a trick question).
- Teacher writes the term conservation status on the board or on a sheet of butchers paper
- Teacher poses the question “Have you ever heard the term conversation status before?
  - If students say yes or nod their head, have them elaborate.
  - If not the teacher can explain.
- Teacher writes the definition of conservation status on the board/paper
  - Conservation Status: is a status that indicates whether the group is in existence (members of it are still alive) and how likely the group is to become extinct in the near future
- Teacher informs the students that there are 4 main conservation status levels
  - Least concerned, threatened, endangered and extinct. (there are more levels, but these are what is learnt at level 3)
- Teacher informs the students that in the lesson they will be looking at the 4 levels in greater detail

What does least concerned mean?

- Teacher gains student attention
- Teacher asks students to look at the animals on the board
- Teacher asks students to look at all the animals that they see all the time (animals that are generally found as pets)
- Teacher poses the question “why do we think we see these animals all the time” (protected by humans, breed, etc.).
- Teacher informs students that animals we see all the time are animals we are least concerned about their population numbers, because there are so many of them.
- Once the students are clear about the definition, have the students circle the animals that they think are classified in the least concerned category.

What are threatened species?

- Teacher asks the students to think about the next word threatened (making generalisations)
  - Teacher may need to clarify the word species (groups of the same type of living thing; animals, plants etc.)or rephrase the term as Threatened animals
• Teacher asks the students to talk with the person next to them, about the word threatened
  o What does it mean?
  o What are other words that might also mean threatened?
• Teacher asks the students to share their thoughts on what this particular word means
• Now that the students understand what the word threatened means, ask them to think about what a threatened species might refer to?
• Teacher can write responses on the board (praise all students for their participation in the discussion, even if the answer is not completely correct, prompt students thinking if they are ‘off track with answers, rather than just saying they are incorrect)
• Teacher can then clarify and inform the students of the actual definition and write this down

What is an endangered animal?

• Begin by asking the students if they have heard this term Endangered Species before.
• Use the think, pair, share strategy to allow students to consider this term. (This strategy not only allows for the teacher to check prior knowledge, but ensures all students have a chance to discuss)
• Share and write the students responses on the board.
• Teacher can then clarify to the students what the actual definition of ‘endangered species’ is:
  o Animals whose numbers are declining to such an extent that they are in danger of becoming extinct.
• Teacher then asks students to look back at the board and circle (in a different colour) the animals they believe are endangered.

What is an extinct animal?

• Teacher reinforces that students now know what the term endangered mean.
• Teacher asks students that “if endangered species means they are in danger of becoming extinct, what exactly does extinct mean?”
• Teacher asks students to consider the word extinct.
• Teacher asks students to share what this word means, and will write students responses on the board.
• Teacher will then provide students with a dictionary definition.
  o Extinct: animals that have not been sighted for at least fifty years and are considered to be no longer in existence.
• Teacher can then ask students to look at the board. “Is there any animals on the board that are extinct?” If there is (quite unlikely) circle them (in a different colour). If there is not any extinct animals listed, teacher can ask the students if they know of any extinct animals.

What is a Criterion?

• Teacher gains student attention
• Teacher poses the question “how do we know what species belong in what category of conservation status?”
  o If required teacher may need to prompt thinking by asking questions such as:
    ▪ Do we just assume animals belong to a particular category?
    ▪ Do we know from evidence or information?
• Teacher asks students to share their thoughts on this question and provide explanations for their thinking.
• Teacher asks the students to think about the word criteria, what does this word mean?
• Teacher can ask students if they have used a criteria before (in their work, self-assessment, project assessment)
• Teacher can then ask “what do criteria’s tell us?”
• Teacher poses the question “how does this relate to our topic on endangered species?”
• Teacher encourages a brain storm/thought shower about this question.
• Teacher can then inform or build on the students suggestion, by saying “In our topic of endangered species, scientists (broad term) use a criteria to mark species against to see what level of conservation status they fit into”
• Teacher then informs the students that it is their turn to investigate the criteria of each conservation status.

C. Consolidation and Practice 50 mins

• Teacher poses the following questions to the students:
  o “What criterions or standard do species need to meet to be classed in the level of least concern?”
  o “What criterions or standard do species need to meet to be classed in the level of threatened?”
  o “What criterions or standard do species need to meet to be classed in the level of endangered?”
  o “What criterions or standard do species need to meet to be classed in the level of extinct?”
• Teacher informs students that they will be going back to their desks in their coloured groups (mixed ability groups) and they will be investigating in further detail the criterions for each of the levels discussed, and that as they research this, they will be looking for species (animals in particular) that are categorised in this level.
• Students return to their desks and are given an investigation template (See Appendix A) Students are then asked to decide amongst themselves what students will be investigating in further detail the criterions for each of the levels discussed, and that as they research this, they will be looking for species (animals in particular) that are categorised in this level.
• Students in their expert groups will investigate the criteria using books and online resources.
• When students come across animals that are classified in that level of conservation, students are encouraged to write the names of animals down and stick it under the conservation level on the Level wall (Teacher will have coloured posters with the levels of conservation written on separate sheets and stuck on the wall).
• Teacher will move around classroom and spend time providing feedback to each expert group and to individuals
• After 30 minutes (give or take), students are asked to move back into their coloured group, where they will communicate to their team members their findings, so that all students are aware of the criteria for each level and what animals are classed in that level. Students are encouraged to ask questions and clarify thinking with their peers, particularly expert peers.

Early Finishers – Extension Activities

• There will most likely not be time for early finisher’s extension activities, as lesson activities are group work.
• However students can move on to an independent task
• Teacher will have coloured posters with the levels of conservation written on separate sheets and stuck on the wall.
• Early finishers will be asked to use what they have learnt in today’s lesson to categorise criteria statements for each conservation level (See Appendix B)
• Students who have completed this task will be encourage to explain to peers in the closure why they believe particular statements belong under a particular category (using newly developed knowledge)

D. Closure 10 mins

• Teacher will gain students attention using the familiar phrase “if you can hear me say hey”
• Teacher will invite students to return to the floor and re-group with their tables (template)
• Teacher will ask students what they found interesting about today’s lesson
  o Something in particular to a criteria of a level
  o An animal that was classed in a particular level that they found interesting
• Teacher will ask students if they found anything confusing (which may require clarification, which may be answered by the teacher or opened up to the class to answer).
• Teacher encourages early finishers to share what they did (if applicable) and explain why they placed the statements/criteria standards under the levels that they did. Teacher can ask the whole class if they agree why or why not.
• Teacher will inform that in our next lesson on endangered species, students will be learning about the causes of animal endangerment.

POST LESSON REVIEW AND EVALUATION:

Pupil Achievement:

• From class discussions in the development phase students demonstrated they were grasping the concepts of the conservation levels
• Students actively participated in group work, using a range of resources to find answers.
• Students were reading/investigating widely as they found a large number of animals for each group, which they placed on the Level Wall.
• Students successfully completed the criteria template and clearly and effectively articulated their expert finding to their group.
Teacher Effectiveness:

- Although students demonstrated they were understanding the concepts of conservation status and the animals within those levels, the development stage could have used more resources, such as videos or games, rather than over using the ‘think, pair, share’ strategy.
- The mixed ability grouping with the Jigsaw strategy allowed for all students to have a vital role in their learning and the learning of others.
Lesson Plan – Lesson 2

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Main Focus for Lesson:

- Learn and investigate the causes of species endangerment
- Investigate how different causes impact on specific animals

STANDARD(S)/LEARNING OUTCOME(S):

Standard: Students describe natural physical and biological conditions, and human influences in the environment, which affect the survival of living things.

Learning Outcomes:

- Understand the difference between natural and human factors impacting on survival
- Identify and describe key influences on species survival
- Research impacts on living things

Indicators

- Evidence of new understanding between natural, biological and human impacts
- Accurately identify and define the key factors for causes of animal endangerment
- Actively discusses the causes impacting on species survival
- Indicates understanding of natural and human factors on allocated animal.

ASSESSMENT:

Criteria:

- Actively participates in ‘Basic Needs for Survival Game’
- Actively participates in discussions about the natural and human factors that cause animal endangerment
- Demonstrates understanding of causes of endangerment on a specific animals through the development of a poster
- Actively and enthusiastically participates in group work, and contributes appropriately
Opportunities to Provide Feedback:

- Feedback about previous lesson’s knowledge in the introduction will be provided, to ensure all students’ are comfortable with learning and moving on to the next topic.
- Questioning and prompting students when providing answers during the development stages
- Questioning students as a form of scaffolding when experiencing difficulties or asking questions that are of increasing difficulty.
- Poster on Endangered Animal: offer feedback to students about the work they are completing as they research and develop the poster. If students are experiencing difficulty refer them back to learning that occurred in the development phase of the lesson or direct them to useful sources, to prompt their thinking and guide their independent work.
- Presentation of poster to class: teacher can offer students with feedback about the end product of their poster, focusing on effort and content, and what was great that they included that really demonstrates their understanding and linkage of new knowledge. Teacher can use the presentation to guide teaching for next lesson and a means of formative assessment.

TEACHING FOCUS:

A. Associate Teacher:
   The associate teacher has ask that I focus on the development stage, in specific teaching students about the terminology and key ideas, through ensuring that the section of the lesson is informative, interactive and has various opportunities for students to learn, catering for the mixed ability.

B. Personal development:
   To ensure that all students have an equal chance to learn, regardless of ability, through the use of a variety of learning resources which will support the multiple intelligences

BACKGROUND TO THE LEARNING:

A. Teacher
   - http://worldwildlife.org/species/
   - http://www.kidsplanet.org/factsheets/map.html
   - http://www.savetherhino.org/?gclid=CNucg-Dwn7ICFZBUpgodJ0MA9Q

B. Pupil
   - Questioning of students prior knowledge during introduction as well as questioning and discussion during the development stage of the lesson.

LESSON RESOURCES:

- Basic Needs Flashcards –Appendix C
- Bucket/Box/Bag
• YouTube clips/Internet access
• SmartBoards
• Butcher’s Paper
• Markers
• Causes of loss of habitat images – Appendix D
• True or false statement on poaching – Appendix E
• *Bongi’s Quest* Picture Story Book (Chris Daniel’s, 2011)
• Template for cause of endangerment to a specific animal – Appendix F (x24)

**CONTENT OF LESSON:**

A. **Introduction** .......................... 10 mins

(The Science Block commences after Recess)

- After recess students will enter the classroom and be seated on the floor, which is routine to the students. Teacher gains student attention by using the consistent and familiar strategy “*If you can hear me say hey.*”
- Once the teacher has gained the attention of the class, they will inform the students that they will be continuing on with their science unit on *Endangered Species*.
- Teacher can ask students what it is they learnt about last lesson (conservation status levels, criteria of each level and animals classed in those levels, and if they needed any clarification)
- Inform students about what you want them to learn from today's lesson and how they will show this (see success criteria)
- To get the students engaged in the topic, and to allow the teacher to help students review prior knowledge, they will play a game of survival.
- Begin the game by asking students to think about the three key needs of survival: food, water and shelter (students would have learnt this last year).
- The teacher will have a box/bucket/bag of cards either with a picture of food, water, or shelter. The teacher will explain that the students will be required to line up in front of them, and one at a time they will be required to draw out three cards. Students will need to draw one of each of the basic needs to survive, if they don’t draw all three, they are out of the game. Remind the students that this is competitive, as survival in nature is competitive. (See Appendix C for Cards)
- After the game has been played, lead the students in a reflection about the game.
- Teacher should ask the following questions:
  - *What did you noticed happened to the number of players in the game?*
  - *From what you experienced, what happened to the players, why did they need to leave the game?*
  - *Why is it important for living things to access basic needs?*
  - *Do situations like this occur in reality?*
- The teacher will reinforce the idea that if species to do not have access to all of these basic needs, they will be ‘in danger’ of dying.
• Teacher informs the students that they are now going to look what happens when living things cannot access the basic needs for survival and other impacts that affect species ability to survive.

B. Development

What causes animal endangerment?

• Teacher highlights that animals are classified into different conservation status groups: least concerned, threatened, endangered and extinct.
• Teacher emphasises that the students already know that species required the basic needs in order to survive, and when they do not have access to these, there is a high chance of the species dying.
• Teacher can then ask the students “are there other factors that cause the endangerment of animals, other than just not having access to basic needs?”
• Teacher has the students use the think, pair, share strategy to discuss this question.
• During this time, the teacher should prepare the video from the following link: http://www.youtube.com/watch?v=So62I2dJ2yo (The video shows different causes of animal endangerment).
• Teacher will ask the students to share what they discussed and write it on butcher’s paper.
• Teacher can then show students the video.
• After the video, the teacher asks the students what causes they saw, if they are written on butcher’s paper, and if there was any missing, what were they? Teacher notes this.
• Teacher will then inform the students about the four main causes:
  o Destruction of habitat
  o Pollution
  o Hunting and Fishing
  o Exotic Species
• Teacher will then ask students to help him/her place all the causes into these main groups (from what was developed before video was show).
• Teacher will ask students who causes these: Nature or humans. Classify again.
  o Teacher may be required to clarify what it means by nature and human impacts
• Teacher will inform students that we are going to look at these causes in more detail.

What does the destruction of habitat refer to and how does it influence a species ability to survive?

• Teacher asks students to think about their home
  o Teacher asks students why having a home is important
  o Students share their ideas with the person sitting next to them
  o Teacher asks students what would happen to us if something happened to our home
  o Teacher asks students if humans would be the only ones affected by a loss of home
• Teacher asks the students “who or what causes habitat destruction?”
  o Is it natural?
  o Or are humans at fault?
• Teacher invites students to stand up. Teacher informs the students that they are going to play a game. In this activity students will be shown an image on the interactive whiteboard (See Appendix D). When an image is shown students must decide who is at fault for that loss of habitat. There will be three spaces in the room; back – human cause, middle – human and nature, front – nature). For each image students will be required to move to the space in the room according to who they believe is at fault. Teacher will then ask students to explain their thinking.
• After completing the activity, teacher can ask students what they found interesting about it
• Teacher asks students what was being affected

What is pollution and how does it impact on species survival?

• Teacher poses the question “what is pollution?”
• Teacher will show students the following video:
  o http://www.youtube.com/watch?feature=endscreen&NR=1&v=aXmfQLC8ju4 (covering air pollution, water pollution, littering and soil/land pollution)
• Teacher asks students what types of pollution were discussed
• Teacher notes these on the board/paper
• Teacher then asks students to group into small groups of 4 students
• Teacher will give each small group a mystery type of pollution (chosen at random) and a mini whiteboard.
• Teacher will then ask students to unfold the paper and discover what their pollution type is.
• Teacher will then instruct students to discuss for a few minutes in their small group what the type of pollution is, what animals it may affect and how.
• After five minutes of discussing the topic, teacher gains student attention.
• Teacher then asks the small groups to share their thoughts.
• Teacher then asks the students “Who causes pollution?” (Is it a natural cause or a human influence)

What is Overexploitation and how does it impact on species ability to survive?

• Teacher gains student attention
• Teacher informs students that they are now going to look at the next cause of animal endangerment
• Teacher informs student that the next cause is known as overexploitation
• Teacher asks the students if they have heard of this word before
  o If yes ask: “what does it mean” or “what do you think it means”
  o If no teacher can ask: “Well if you have not heard of the term overexploitation, have you heard of the words hunting, fishing a poaching?”
  o If yes ask the students the following question
    ▪ “What is hunting?”
    ▪ “What is fishing”
    ▪ “Who are the hunters and the fishermen?” (humans)
    ▪ What is being hunted or fished? (species/animals)
    ▪ “What do you think poaching means?”
• Show students brief video on overexploitation (poaching) of animals (this video is as “child friendly” as possible, however it is imperative for the teacher to inform students that these pictures might make them sad or uncomfortable and they do not have to watch)
• Teacher asks students to stand up
• Teacher informs students they are going to play another game.
• Teacher will explain to students the game: Students will be asked a series of true or false statements based on the video (See Appendix E). The teacher will pose the statement to the students and they will be required to move to either the left (for true) or right (for false) to indicate their answer. If students believe the answer is neither true nor false, students can stand in the middle.
• After the game has been completed teacher can ask the students what they noticed about hunting and fishing.
• To sum up the cause of exploitation the teacher can ask the question relevant to the standard “Who is at fault for overexploitation? Humans, nature or both”

What are Exotic Species and how do they impact on survival of species?

• Teacher gains student attention
• Teacher asks students if they have ever had someone come over and stay at their house with them.
• Ask the students about how this impacts on their standard living
  o Teacher can prompt thinking by asking questions such as:
    ▪ “What things to you have to share?” (food, bedroom etc)
    ▪ “How does it make you feel having to share things you’re not really used to sharing?”
    ▪ “In having to share things with more people than you are used to at home, does it feel like you are not able to ‘live’ fully?”
• Teacher can now ask students to think about what would happen to animals if some unfamiliar animals (who are not from that environment) came into their habitat and began to eat all of their food and take up space in their environment.
• Teacher informs students that when animals are introduced to an environment that is not natural to that environment they are called exotic species.
• Teacher will explain that in an environment animals compete with each other for survival, and this is natural, this is just a part of the life cycle (students understand this concepts already)
• Teacher will build on this by saying that, sometimes species are introduced to an environment that is not natural to them, and when this happens it throws out the balance of competition. Sometimes they might be in competition for the same food source or shelter, and the environment cannot cater for these new demands, that animals then have a difficult chance of survival.
• Teacher can then ask students if this is a cause of humans or nature. Why, why not? Allow for students to expand their thinking.
Will all species be affected by the same cause of endangerment?

- Teacher asks students to think about the four causes we have just explored
- Teacher asks students to think about the different examples
- Teacher informs the students they are going to read a short picture story book *Bongi’s Quest* by Chris Daniel (*Bongi’s quest* is a children’s book about a rhino called Bongi, who is on a quest to find out what is happening to his family. On his quest he discovers the cause, poaching)
- After reading the book the teacher can ask the following questions:
  - What animal was Bongi? (Rhinoceros)
  - Is that animal on our list of endangered species? (Refer to conservation status wall) (Yes)
  - What was happening to Bongi’s family (species)? (Dying out)
  - What was the cause of death for Bongi’s family? (Poaching/hunting)
  - Why were Bongi’s family being poached? (For horns)
- Teacher can then explain to students that as they can see from this example, different animals’ ability to survive differs amongst different species. Although it may be the same cause sometimes, it will be a different reason for it (e.g. poaching rhino’s for horns for “medical” purposes compared to poaching whales for food purposes.

C. Consolidation and Practice 50 mins

- Teacher will explain to students that they will now be breaking off into their coloured teams (mixed ability group) to research a particular endangered species, looking specifically at why they are endangered (what is the cause)
- Teacher will show students the template they will be using to guide their learning and investigation, and model briefly using the example from Bongi’s story.
- Students will then be each given a template (See Appendix F) and will be sent off to their tables. The teacher will then come around to each group with a bag of animal names. One student will draw out a name, and that will be the animal they will be investigating as a group
- Students are then set to work, investigating the cause of endangerment for their allocated animal using a variety of resources; books and online sources (provided by the teacher, See resources above). Students will complete the template and then use the information gathered to create a poster about the cause of endangerment for their animal.
- Teacher will walk around the classroom observing students learning, providing feedback on what the students are developing and asking them question to further thinking if required.
- Students will at the end give a brief 2 minute presentation on their findings to the rest of the class.

Early Finishers – Extension Activities
• If students are finished their poster, they can go to the Endangered Species Inquiry corner in the room and look at the books provided.
• Students will be asked look at the different animals in the book and look into what their cause of endangerment is.
• Students may be asked about what they have found during the closure of the lesson.

D. Closure 10 mins

• Teacher will gain class attention “If you can hear me say hey!”
• Teacher will ask students to regroup and come down to the floor area and sit in their coloured groups.
• Teacher will ask students what they found interesting in the lesson
• Teacher asks students if they experienced any difficulties.
• Teacher can invite students groups up to the front to provide their peers with a brief presentation on the endangered animal they have investigated and why they are endangered. At the end of each presentation, the other students in the audience are given the opportunity to ask student presenters questions.
• Once all students have presented teacher can provide feedback about students finished product. Teacher will then collect posters and hold on to them for next lesson.
• Before dismissing the class for lunch, teacher can inform students that in our next lesson we will be exploring how we can conserve the animals and to find ways to stop or slow the effects investigated in today’s lesson.

POST LESSON REVIEW AND EVALUATION:

Pupil Achievement:

• Students grasped the concepts of causes really well
• Students could clearly identify the difference between human and natural causes
• Students we able to apply knowledge both prior and new to engage in high order thinking
• Students were actively engaged in the activities.

Teacher Effectiveness:

• The incorporation of videos and interactive games into the development phase of the lesson was really effective, as students were more engaged as the lesson catered for multiple intelligences.
• In prompting students thinking, students were able to provide more information, hence allowing them to contribute more to the class discussion
• The ‘think, pair share’ strategy was particularly effective in today’s lesson, especially during the development stage where they had to discuss the type of cause selected and the impact it has on species.
• Will continue with provide feedback to students
• Will continue to use a variety of resources, as it was very effective this lesson.
Lesson Plan – Lesson 3

<table>
<thead>
<tr>
<th>Lesson Topic</th>
<th>Endangered Species</th>
<th>Date</th>
<th>21/08/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>VELS Domain</td>
<td>Science</td>
<td>Grade</td>
<td>Grade 3/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VELS Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>VELS Dimension</td>
<td>Science knowledge and understanding</td>
<td>Duration of Lesson</td>
<td>2.5 hours</td>
</tr>
</tbody>
</table>

Main Focus for Lesson 3:

- Investigate sustainability and conservation
- Develop a conservation campaign for an endangered species

**STANDARD(S)/LEARNING OUTCOME(S):**

**Standard:** *Students develop knowledge of sustainable practices that have been undertaken or could be undertaken in the future to sustain the environment*

**Learning Outcomes:**

- Define the meaning of *sustainability*
- Define the meaning of *conservation*
- Discuss the importance of conservation
- Investigate current conservation practices for endangered species
- Apply understanding to propose and develop a conservation campaign

**Indicators:**

- Accurately defines sustainably
- Correctly articulates the meaning of conservation
- Communicate the purpose and importance of the need to conserve
- Chooses, describes and evaluates a current conservation practice
- Creativity and appropriately develops a conservation campaign for the species investigated in prior lessons

**ASSESSMENT:**

**Success Criteria:**

- Actively participate in class discussions and exploration into science terminology
• Actively participate in class discussions around the concept of conservation and its importance
• Examine the various types of conservation practices implemented for endangered species
• Demonstrates understanding of conservation practices for different animals through the competition of the conservation campaign.
• Actively and enthusiastically participates in group work, and contributes appropriately

Opportunities to Provide Feedback:

• Teacher will provide feedback to students after students have provided answers for questions surrounding the newspaper article, which helps to indicate prior knowledge and recall of information from last lesson
• Teacher engages students in class discussions and uses prompting questions if required to assist students thinking
• Teacher will provide support to students during independent practice, if required, as a second point of reference, as their group members will be first point of contact.
• Teacher will provide students with feedback on digital campaigns during the independent practice, at the end of the lesson in regards to what they have done so far and at the end, once it is completed.

TEACHING FOCUS:

A. Associate Teacher:
The associate teacher has asked that I pay particular attention to assessment of learning about the knowledge gained over the unit. To address this, I will mark students conservation campaign (which also includes assessment for learning), and at the end of the unit, play a trivia game to test individual knowledge, without setting a formal quiz.

B. Personal Skill Development:
On account that this lesson is the final lesson of the unit, I would like to check students understanding of the learning through a reflection. This will address metacognition.

BACKGROUND TO THE LEARNING:

A. Teacher
http://www.endangeredspecies.com/
http://www.savetherhino.org/?gclid=CNucg-Dwn7ICFZBUpgodJ0MA9Q

B. Pupil
• Questioning of students prior knowledge during introduction as well as questioning and discussion during the development stage of the lesson.

LESSON RESOURCES:

• *Tiny western swamp tortoise sticks a neck out for threatened species at Adelaide Zoo*
  News article – Appendix G
• Talking Stick
• YouTube/Internet Access
• Good captivity vs. bad captivity images – Appendix H
• Table for Appendix H
• List of digital resources/programs students can use for campaign – Appendix J
• Trivia Questions – Appendix K
• Unit Reflection – Appendix L (x24)

CONTENT OF LESSON:

A. Introduction 10 mins

(The Science Block commences after Recess)

• After recess students will enter the classroom and be seated on the floor, which is routine to the students. Teacher gains student attention by using the consistent and familiar strategy “If you can hear me say hey.”

• Once the students are ready and attentive teacher can say “I was reading some news articles online yesterday, and came across this story, and I thought what a coincidence, this is what we are learning about in class, I must share this article with my grade 3/4’s!”

• Teacher reads the article ‘*Tiny western swamp tortoise sticks a neck out for threatened species at Adelaide Zoo*’ from the Herald Sun to the students (See Appendix G)

• After reading the article teacher asks students the following questions (to demonstrate prior knowledge and comprehension):
  o “What was the species being discussed in the article?”
  o “What conservations status was the animal classed under?"
  o “How many tiny western swamp tortoises were said to be in captivity?"
  o “How many tiny western swamp tortoises were said to be in the wild?"
  o “What program is in place to attempt to save the tiny western swamp tortoise?”

• Teacher can then inform the students that after looking at conservation status levels, the animals classed in those levels and the causes of endangerment of species, students today will explore conservation – what people are doing to save the species of the world.

B. Development 40 mins
What is sustainability?

- Teacher informs students that in order to understand conservation, we first need to understand what the word *sustainability* means.
- Teacher asks the students *“This word sustainability, it’s everywhere, we hear it all the time, but what does it actually mean?”*
- Teacher can ask students to break the word down, and think about the word *sustain*.
- *“When we sustain something we...”*
- Open this up to a class discussion, note answers on the board, and provide feedback to students, including praise for effort and confidence in participating in the group discussion.
- Clarify, if necessary or restate what the students have developed and then provide students with an official definition of sustainability which is: “Sustainable means to keep something going forever. Sustainability refers to ensuring that planet Earth and all of its resources can continue to provide a home for humans and all other species (animals and plants) forever.” (Sustainable Oregon Schools, 2007, p 1).

What is Conservation?

- Teacher explains to students that now they know what sustainability means, they can now learn about what how we can sustain our species, especially those that are endangered.
- Teacher explains to the students that a sustainability practice of prolonging the lives of animal population, is that of conservation.
- Teacher can ask students where they have heard this word before (in lesson 1: conservation status)
- Teacher can help students understand the word by breaking it down, *“What does conserve mean?”*
- Students think and share with the class what this word means, teacher can note these.
- Teacher can then ask students about why we must “conserve” species. Students think and share again.
- Teacher asks students to think about what we need to conserve species from.
- Teacher asks students to turn to the person next to them and discuss what we need to conserve species from (think causes of endangerment)
- After 2 minutes (give or take) teacher can ask students to share. Teacher will pass around a talking stick, so that all pairs have the opportunity to participate in the whole class discussion. Teacher will write students ideas on a sheet of butcher’s paper.
- Inform students that they are now going to look at four main conservation methods: placing animals in captivity, captive breeding, managing habitats and saving animals from exploitation.

What is Captivity and how does this protect endangered species?

- Teacher gains student attention
- Teacher asks students if they have ever been to the zoo before. Teacher can pose the following questions:
What do you see at a zoo?
Why are animals in there?
Are zoos there just for people’s entertainment?
Or are they there for other purposes?

Teacher shows the following video about what zoos do to help conserve animals (in this case Elephants) http://www.youtube.com/watch?v=mmC59buVD-U

Teacher asks students to consider the points made in the video
What do zoos do to help save animals? (Assists in research, developing conservation strategies, protect animals, etc.).

Teacher can ask students to think about captivity as a place where animals are put under the care of humans. Teacher can ask students if all captivity is good. Show images to students (See Appendix H). Invite students to come up to the front and place these in the correct column titled either “Good captivity” or “Bad Captivity” (Appendix I). As students sort the images, have them explain the reasons to why they are categorising the images into the columns they are.

What is Captive Breeding and how does this aim to do?

Teacher gains students attention
Teacher asks students to think about what captive breeding might be, if we already know that captive is when animals are under the supervision of humans.
Teacher asks students what is the purpose of breeding (to reproduce and create more of the species)
Teacher asks students why humans might encourage breeding in captivity
Teacher asks students “if breeding was to take place, and new offspring (babies of species) were born and this action continues, what will hopefully happen to the number of species within a population?”

How can we save endangered species by managing habitats?

Teacher gains students attention again
Teacher ask students to think about another cause we explored last lesson, involving animals environment (loss of environment)
Teacher asks students to think back and see who was at fault for the destruction of habitats?
Ask students if they think destroyed habitats could be fixed, ask for input.
Show students the video on the Reforestation Project: http://www.youtube.com/watch?v=D-5HZzTxFY1U
At the end of the video, ask the students:
Who was rebuilding the forest?
What caused the destruction in the first place?
What will be the positive impacts on rebuilding the destroyed habitats
Teacher can then inform students that we can manage habitats through our actions and sustainable practices, in everyday life such as managing our pollution.
How can we save animals that are endangered because of overexploitation?

- Teacher asks students to restate what overexploitation referred to.
- Ask students some of the reasons why animals are poached, hunted or fished (linking back to last week’s consolidation and practice activity)
- Teacher asks students “how we can save animals from being exploited?”
- Teacher asks for students to talk with the person next to them and discuss ways in which we can stop the unnecessary poaching/hunting/fishing of animals.
- Students can be creative in their thinking for this one, as there is only really a poaching law, and variety of penalties, which vary from country to country.
- Students share their ideas with ways to stop poaching with the whole class, teacher can write these ideas on the board or a sheet of paper, an provide feedback on students thinking.

C. Consolidation and Practice

- Teacher informs that after looking at a few methods of conservation, students are now going to create a conservation campaign. Inform the students that a conservation campaign is a promotion of an issue with a suggestion on how to fix it. Teacher will inform students that they will be creating a digital conservation campaign for the endangered animal they investigated last lesson.
- Teacher shows students an example of a campaign on Rhinoceros’ as it is what the teacher modelled last lesson, however teacher should tell students that their video does not have to look like this, as this is very detailed and sophisticated one.
  - Link: http://www.youtube.com/watch?v=tlaM8dkns2E&feature=relmfu
- Teacher asks students to move back into their coloured groups (mixed ability) and will hand back posters created last lesson.
- Students will use the poster as a guide to create a digital conservation campaign (see list of digital resources students can choose to use – Appendix j), including key information such as:
  - Name of species
  - Class of conservation status level
  - Numbers left in the world
  - Habitat (location in the world)
  - Cause of endangerment (including who is at fault)
  - How can people help these animals, what can humans do to help.
- Teacher will walk around the classroom as students complete the task and speak with each group and individuals about their campaign, providing feedback to the work they have done.
- Teacher will make themselves available for when or if students experience difficulty during activity.

Early Finishers – Extension Activities
• If students have completed their conservation campaign for their allocated endangered animal, students can play the online game *Endangered Animals Game*. See link: [http://www.sheppardsoftware.com/content/animals/kidscorner/endangered_animals/endangered_game.htm](http://www.sheppardsoftware.com/content/animals/kidscorner/endangered_animals/endangered_game.htm)

• Students will be required to answer questions on a range of endangered animals. Some questions have set answers that students have learnt, and other questions will require students to make generalisations.

• Students will be asked to be aware of some of the questions and facts that are asked/stated.

• Students may be asked to share if they found out any new interesting facts about endangered species.

**D. Closure 30 mins**

(On account this lesson is the last lesson, the closure will be longer than normal, for additional summary activities)

• Teacher gains student attention
• Teacher asks students to re-group on the floor.
• Teacher informs students that if they have not finished their campaign, they will have a bit of time after lunch to do so.
• Teacher asks students what they learnt today, what they enjoyed, what they may have found difficult, and any other questions that may have developed.
• Teacher will then inform the students that because it is the last lesson of the unit on endangered species, they are going to play a trivia game based on the content of the unit. In this trivia, there will be rounds, and students teams will be their coloured group. In each round individual students will represent their team. Students will be asked a question (See Appendix K), and are asked to write in on their mini whiteboard. After each student has written down their answer. Students will receive points for correct answer, going to their team score. After the trivia, points will be counted and students will receive play money according to the points they have gained to purchase a prize of the prize wall (a wall with stationary prizes)
• After the trivia, teacher will inform the students that they would like them each to fill out a reflection sheet (Appendix L). This will consist of questions about their learning (assessment of learning) and will allow for students to reflect on their own learning (metacognition).
• After each student has done this, teacher will provide feedback on what they observed over the three lessons. After the teacher has done this, they can thank the students, inform them of the next topic and dismiss for lunch.

**POST LESSON REVIEW AND EVALUATION:**

**Pupil Achievement**
• All student groups have almost completed the digital conservation campaign, but just need additional time, which will be given after lunch on Friday which is ‘Finishing Off Time’
• From what students have demonstrated so far, during feedback talks with the teacher, it appears that all groups have grasped the concept on conservation and have accurately made links to previous lessons.
• Students actively participated in the group lesson, especially in the development on the campaign. In observing students they appeared to be enjoying themselves and most students provided information and ideas.

Teacher Effectiveness

• Although I am happy with the way in which the lesson was conducted, I feel I need to work on being more of a facilitator for learning, rather than just a teacher who teaches explicitly.
• Although I felt there was too much direct teaching in the development stage, I believe it was necessary, in order for students to actively and accurately complete the independent task.
• Although students were taught explicitly, the inclusion of a range of activities in the development stage such as YouTube clips and the use of other visual cues in games, helped children to actively participate in class discussions.
## Appendix Summary:

<table>
<thead>
<tr>
<th>Lesson Used In:</th>
<th>Appendix:</th>
<th>Name of Appendix:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>Appendix A</td>
<td>Investigation template</td>
</tr>
<tr>
<td></td>
<td>Appendix B</td>
<td>Criterion Statements of Conservation Status Levels - Extension Activity</td>
</tr>
<tr>
<td>Lesson 2</td>
<td>Appendix C</td>
<td>Basic Needs Flash Cards</td>
</tr>
<tr>
<td></td>
<td>Appendix D</td>
<td>Cause of Habitat Loss Images</td>
</tr>
<tr>
<td></td>
<td>Appendix E</td>
<td>True or False Statements on Poaching</td>
</tr>
<tr>
<td></td>
<td>Appendix F</td>
<td>Template for Cause of Endangerment on Specific Animals</td>
</tr>
<tr>
<td>Lesson 3</td>
<td>Appendix G</td>
<td>Herald Sun News Article</td>
</tr>
<tr>
<td></td>
<td>Appendix H</td>
<td>Good Captivity vs. Bad Captivity</td>
</tr>
<tr>
<td></td>
<td>Appendix I</td>
<td>Table for Appendix H</td>
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<td>Appendix J</td>
<td>List of Digital Resources/Programs for digital conservation campaign</td>
</tr>
<tr>
<td></td>
<td>Appendix K</td>
<td>Unit Summary Trivia</td>
</tr>
<tr>
<td></td>
<td>Appendix L</td>
<td>Personal Reflection of Unit</td>
</tr>
</tbody>
</table>
Appendix A:

Criterion of Conservation Status Levels

Instructions: In your team, each of you will be an expert in a particular level. It will be up to you to research your allocated status. Books and online resources will be available for you to use. After your investigation, you will gather as a group and share your findings to complete the table.

Good Luck!

<table>
<thead>
<tr>
<th>Level of Conservation Status</th>
<th>Criteria (What conditions/standards do animals/species meet to be classified in the level?)</th>
<th>Animals classified in this level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Concern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatened</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endangered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extinct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservation Status Level Statements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When they are unprotected and are decreasing in numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When numbers are declining to such an extent that they are in danger of becoming extinct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When the population is thriving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species that are not vulnerable or endangered, but are common</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species are widespread and population is large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species are widespread and population is large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When there are no more living individuals of a particular species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When species are likely to move into the endangered category soon if conditions do not change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When animals survival and population is not under threat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When animals are only found in zoos or wildlife parks (captivity)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C:

Basic Needs Cards Template:
Appendix D:

Images of Habitat Destruction: Who is at fault?

[Images and links provided as in the original document]
### TRUE OR FALSE STATEMENTS ABOUT ANIMAL POACHING:

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animals are killed illegally so that parts of them can be sold for cash on the black market, usually for things like Ancient Chinese medicine.</td>
<td>True</td>
</tr>
<tr>
<td>An animal is killed for only one part of its body and left to die or be scavenged, not to be used anymore by the hunters that killed it.</td>
<td>True</td>
</tr>
<tr>
<td>More poaching is done on endangered species (of a particular area/country) than those that are not endangered.</td>
<td>True</td>
</tr>
<tr>
<td>Poachers don't really care of how the animal is killed, just so long as they get what they want so they can make some money.</td>
<td>True</td>
</tr>
<tr>
<td>People poach/hunt/fish only to make money</td>
<td>False (People choose to hunt and fish for sporting/leisurely past times)</td>
</tr>
<tr>
<td>Even if people continue to poach animals unnecessarily, animal numbers will still increase</td>
<td>False (The more poaching that occurs the most likely the species will become extinct)</td>
</tr>
<tr>
<td>Poaching has led to the extinction of the Western Black Rhino</td>
<td>True (The Western Black Rhino was declared extinct in 2011)</td>
</tr>
</tbody>
</table>
Appendix F:

CAUSE OF ENDANGERMENT TO MY ANIMAL TEMPLATE

When planning for what information you will put on your poster, think about the following questions and fill the information in the diagram below.

What is the animal you are investigating?
Why is it an Endangered Species?
What is the cause or causes for your animals endangerment?
Is there any other important information to include?
A TINY tortoise at the Adelaide Zoo represents hope for endangered species on Threatened Species Day today.

The endangered western swamp tortoise is one of 1694 nationally threatened species.

The Adelaide Zoo is the only institution outside Western Australia to breed the species successfully. Reptile keeper Grant Husband said the breeding program was a "very big deal", because there were just 200 of the tortoises in captivity and about 200 known in the wild.

"We're the caretakers of that species," he said. "Without human intervention I'm pretty sure they'd become extinct."

The western swamp tortoise grows from the size of a 10c piece to a total length of 15.5cm and a weight of just 550g.

Threatened Species Day commemorates the death in 1936 of the last Tasmanian tiger, at Hobart Zoo.
Appendix H:

Good Captivity vs. Bad Captivity


http://commons.wikimedia.org/wiki/File:Paignton,_Paignton_Zoo,_Elephant_Enclosure_-_geograph.org.uk_-_1484806.jpg


http://www.jusnews.co.uk/2011/03/circus-animals-the-cruelty-behind-the-smoke-and-lights/

http://www.dreamstime.com/stock-photo-captive-bear-image16564170
Appendix I:

**(Increase size for lesson)**

<table>
<thead>
<tr>
<th>GOOD CAPITIVITY</th>
<th>BAD CAPITIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix J:

**Digital Resources/Programs for Conservation Campaign**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slideshare</td>
<td>embed a PowerPoint</td>
<td><a href="http://www.slideshare.net/">http://www.slideshare.net/</a></td>
</tr>
<tr>
<td>Voice Thread</td>
<td>Collaborative multimedia slide show</td>
<td><a href="http://voicethread.com/">http://voicethread.com/</a></td>
</tr>
<tr>
<td>bubbl us</td>
<td>Brainstorming</td>
<td><a href="https://bubbl.us/">https://bubbl.us/</a></td>
</tr>
<tr>
<td>Photopeach</td>
<td>Create slide show or quiz with music</td>
<td><a href="http://photopeach.com/">http://photopeach.com/</a></td>
</tr>
</tbody>
</table>
Appendix K:

Trivia Questions:

Instructions: Students will break off into their coloured teams (mixed ability). The trivia will consist of Rounds. Students will automatically draw out the order in which they will participate; Students will represent their group in each round. Students will be seated at a panel with a mini whiteboard in front of them. The teacher will pose a question (see below) and each student will be required to write down their answer. Although there will be set answers, teacher can determine if students get points based on the answer they provide. Students will all get points for correct answers and will go to their team points. After each round, students will swap. After the trivia, students will be rewarded with ‘play money’ according to the points they have gained. Students can then purchase prizes from the prize wall.

<table>
<thead>
<tr>
<th>Round Number</th>
<th>Question</th>
</tr>
</thead>
</table>
| Round 1:     | - What is a conservation status?  
               - What is one criterion species are marked to classify them in the level of threatened?  
               - What is one natural cause and one human cause of habitat destruction?  
               - What is one way, people can stop the overexploitation of animals (creative but accurate answer) |
| Round 2:     | - What does endangered species mean?  
               - List 4 species that are classified as endangered.  
               - What is one type of pollution? What is it and what animals might it affect?  
               - What is one way people can decrease pollution, and how will this benefit not only endangered animals, but all species? |
| Round 3:     | - How many years must a species be extinct before officially being classified as being extinct?  
               - What are 2 examples of causes of endangerment that are caused by nature?  
               - What is sustainability? What does it have to do with saving endangered species?  
               - What is the purpose of placing animals in captivity? Give 2 reasons. |
| Round 4:     | - If an animal is classified under the conservation status level of least concern, what does it mean? What is one species that is of least concern?  
               - What are 2 examples of causes of endangerment that are caused by humans?  
               - Why do people hunt the rhinoceros? What is another animal that is poached for a similar purpose?  
               - What is one way people can help their species they investigated, from becoming extinct? |
Appendix L:

**My Personal Reflection on the Endangered Species Unit**

In the unit about endangered species I learnt that...

The part I enjoyed the most was...

Some things that I found really interesting...
Some things I found confusing...

Do you think that you met the learning goals/outcomes for the lessons? Please tick.

Lesson 1:
- All outcomes __  Most Outcomes __
- Half of the outcomes__ No Outcomes__

Lesson 2:
- All outcomes __  Most Outcomes __
- Half of the outcomes__ No Outcomes__

Lesson 3:
- All outcomes __  Most Outcomes __
- Half of the outcomes__ No Outcomes__

Learning about Endangered Species made me feel...
Draw a picture of you learning about Endangered Species!
Rationale:

The main focus when developing the unit of work was to place a strong emphasis on catering for a mixed ability classroom. In order to support students across a continuum of mixed abilities, various strategies were implemented, aimed to ensure that the principles of all students having a right to high quality education and that all children can learn, were addressed (O’Brien & Guiney, 2001). Strategies used in this unit include cooperative learning, scaffolding, backwards planning and visible teaching with the inclusion of questioning and the use of various enriching resources.

The current unit was developed using the backwards planning method, whereby the educator “begins their planning beginning at the end,” to have a clear idea of what the final destination of learning will be. This is then followed by the development of assessment then lesson structure (Jones, Jones & Vermette, 2009). Backwards planning ensures that the teacher is focusing on the learning and not the teaching, therefore making it a more authentic and relevant learning experience (Wiggins & McTighe, 2011).

Visible teaching was a strong component for this unit of work. Visible teaching, an idea developed by John Hattie, explains that good teaching is visible teaching that includes a range of strategies, such as cooperative learning, direct/explicit instruction with modelling and questioning, using a variety of different resources and clearly articulating the specific learning objectives (Hattie, 2009).

Although the unit consists of lengthy explicit direction from the teacher, which some debate as being an ineffective way of teaching, explicit teaching in this case is to participating students. Students have the opportunity to answer questions, increasing in difficulty, which promotes a high order of thinking, a means of scaffolding learning and to “encourage students to explore, experiment and investigate,” hence making learning more authentic (Falk & Blumenreich, 2005, p. 1; 5; 185). In both the development stage and independent stage, students are provided with a variety of ‘entry points’ and multiple opportunities to ensure they understand the learning, which address multiple intelligences, hence ensuring mixed abilities are catered for (Carson, 2011). These include various resources and activities such as videos, articles, online games, and interactive class games.

Students in this mixed ability classroom, will have their learning and different abilities catered for and supported by the integration of cooperative learning. Cooperative learning is a strategy that allows students to work together to learn together, and aims to ensure that all students “can master the concepts being taught.” (Slavin, 1995, p. 2). It is a strategy that gives students “the opportunity
to develop social skills, leadership skills and conceptual knowledge” (Heiman Savitch & Serling, 1997, p. 156), as well as “dramatically improve academic achievement levels” (Emmer, Everston & Worsham, 2003 as cited in Levin & Nolan, 2004, p. 121). Cooperative learning is not just about students working in groups, but is about achieving and mastering materials together, to form that sense of achievement (Slavin, 1995). In each of the lessons the teacher promoted cooperative learning through the use of the ‘think, pair, share’ strategy as well as the jigsaw strategy. Both strategies allow for all students to take part in the learning, and to emphasis to them that their input is crucial. The jigsaw strategy calls for all students to become experts in a certain area, in which they will research with one group and convey their information to their allocated group, a mixed ability group (Tuchman Glass, 2009). This strategy, builds on the emphasis that everyone’s role is vital. A strategy such as this promotes self-esteem and self-worth, as all students are important. This promotes the idea that all students can achieve the high expectations set for all (Slavin, 1995).

In conclusion, the strategies used in the current unit, have been used to ensure that all abilities are catered for, and that all students can and will achieve high expectations, if they are actively engaged and supported. The lesson addresses a very important topic, hence making the unit more authentic and worthwhile.
References:


Word Count: 565 (excluding referencing and quotes)