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| **ETHICS IN SCIENCE PLANNER – COMPLETED EXAMPLE**  (Click on a hyperlink for more related content) | | | | | | |
| **Science context** | ***Conservation of the takahē*** | | **Teacher:** *B Ryan* | | **Year:** *5/6* | **Level:** *3/4* |
| **Science curriculum links**  Customise relevant achievement objectives from the curriculum to the science context. | ***Living World***  *Consider how the takahē is suited to its habitat and its response to environmental changes, both natural and human, showing both how it became endangered and responses to efforts of conservation (level 3/4).*  ***Nature of Science***  *Explore various aspects of an issue (takahē conservation) and make decisions about possible actions. Consider conservation strategies, culminating in an exploration of whether money should be spent in this way (level 3/4).* | | | | | |
| **Ethics question (often begins with ‘Should…’)**  Identify the ethics question the teaching and learning will focus on. | *Should money and effort be spent understanding and saving the takahē?* | | | | | |
| **Relevant science knowledge**  List all the relevant science knowledge in order to identify what students need to know to be able to participate in an informed way in the ethics in science discussion. | *Students will understand:*   * *that the takahē is an endangered, native bird and what ‘endangered’ and ‘native’ mean* * *how the takahē became endangered (its adaptation to an environment with no predators, the impact of introduced pests including predators and competitors, the effects of changing the ecosystem)* * *the focus of conservation efforts (conservation islands, controlling deer numbers and predators, specialised breeding facilities) and the potential advantages and disadvantages of each approach.* | | | | | |
| .**Ethics focus questions** | **Activity** | **Planned interactions** | | **Resources** | **Learning intentions** | |
| *Consequentialism – what is it?* | *Class discussion.* | *What is a consequence?* | |  | *Students appreciate that consequences result from a decision or action. They can be positive or negative.* | |
| *Who/what is affected?*  *What are the benefits?*  *What are the harms?* | *Class discussion recorded in a table.* | *Who/what is affected? How?*   * *Takahē (increasing in numbers, individuals are safer, more food – at least initially); other endangered birds (also increase in numbers).* * *Deer (culled); predators (killed).* * *Scientists, DoC (jobs, new ideas, excitement, job satisfaction).* * *General public (more tax?, satisfaction from helping save native birds).* * *Environment (better care).* * *Tourists (more native species seen?)* | | *Paper, pens.* | *Identify that a range of stakeholders are affected by*  *conservation efforts. Whilst some benefit, others might be harmed.* | |
| *What are possible harms and benefits for different stakeholders?* | [*Noisy round robin*](https://www.sciencelearn.org.nz/system/documents/files/000/000/610/original/Noisy_round_robin.docx?1497832431)*.* | *Students work in small groups to build on and extend ideas generated in class discussion.* | | [*Plus minus interesting (PMI)*](https://www.sciencelearn.org.nz/system/documents/files/000/000/611/original/Plus_minus_interesting.docx?1497832571)*.* | *Different stakeholders are affected differently; some are harmed, some benefit.* | |
| *Are some consequences greater or lesser than others?* | *Class sharing and discussion.* | *Some benefit (takahē, other birds, DoC, environment, tourism); some are harmed (predators, deer, money spent on conservation rather than other things, land not available for other uses). How do you decide what matters most?* | |  | *Students begin to make judgements by weighing harms and benefits.* | |
| *Rights and responsibilities: What groups have rights associated with this issue? What are their rights?* | *Class sharing and discussion.* | *Does the takahē have a right to survive as a native New Zealand bird? What about natural consequences (e.g. survival of the fittest, leaving ‘nature’ to take its course)? How have humans interfered with nature process? (Not just protecting the takahē but earlier by bringing predators to New Zealand).* | |  | *Students think about rights from a historical perspective – what occurred that is now*  *causing the takahē to struggle to survive?* | |
| *Do these groups also have responsibilities? What are their responsibilities?* | *Class sharing and discussion.* | *Having brought predators to New Zealand, do we (New Zealand Government) now have a responsibility to help the takahē survive?* | |  | *If the takahē has a right to survive, whose responsibility is it to see this happens?* | |
| *Virtue ethics: Does saving the takahē make us better people? Why or why not?* | *Small group discussion – one person from each group to share ideas with the class.* | *Does saving the takahē cause people to become better citizens? In what way? (More caring, more generous with time and money, more supportive of environmental protection/restoration.)* | |  | *Students appreciate virtues can be developed through ethical thinking – care, generosity, valuing the natural environment.* | |
| *Ethical deliberation and justification.* | *Debate.* | *Students assigned to plus/minus groups so they have to acknowledge views that might be different to their own.* | |  | *Students make a decision and explain it to others, consider others’ views.* | |
| **Assessment** | | | | | | |
| *An individual report incorporating both the science and ethical considerations:*   1. *What is the takahē? (Include habitat, food, behaviour.)* 2. *How did the takahē become endangered? (Its history.)* 3. *What is being done to save the takahē?* 4. *Do you think it is important to spend money saving the takahē? Why or why not?* | | | | | | |