 Classification

Stage 4 Living World

Outcomes

Values and attitudes

SC4-1VA A Student appreciates the importance of science in their lives and the role of scientific inquiry in increasing understanding of the world around them

Working scientifically

SC4-5WS collaboratively and individually produces a plan to investigate questions and problems

* WS5.1Students identify data to be collected in an investigation by:

c. locating possible sources of data and information, including secondary sources, relevant to the investigation

SC4-7WS processes and analyses data from a first-hand investigation and secondary sources to identify trends, patterns and relationships, and draw conclusions

* WS7.1Students process data and information by:

a. summarising data from students' own investigations and secondary sources (ACSIS130, ACSIS145)

b. using a range of representations to organise data, including graphs, keys, models, diagrams, tables and spreadsheets

Knowledge and understanding

SC4-14LW relates the structure and function of living things to their classification, survival and reproduction

LW1 There are differences within and between groups of organisms; classification helps organise this diversity. (ACSSU111)

b. classify a variety of living things based on similarities and differences in structural features

c. use simple keys to identify a range of plants and animals

f. explain how the features of some Australian plants and animals are adaptations for survival and reproduction in their environment

Learning across the curriculum

Cross-curriculum priorities

☒Aboriginal and Torres Strait Islander histories and cultures

☐Asia and Australia's engagement with Asia

☐Sustainability

General capabilities

☒Critical and creative thinking

☐Ethical understanding

☐Information and communication technology capability

☐Intercultural understanding

☐Literacy

☐Numeracy

☐Personal and social capability

Other areas of learning

☐Civics and citizenship

☐Difference and diversity

☒Work and enterprise

Teacher notes

There is a strong opportunity to liaise with environmental and zoo education centres (EZEC), including Taronga Zoo. A list of EZECs is available below.

|  |  |  |  |
| --- | --- | --- | --- |
| Centre | Address | Suburb | P/code |
| Awabakal Environmental Education Centre | Boundary St | Dudley | 2290 |
| Botany Bay Environmental Education Centre | Botany Bay National Park | Kurnell | 2231 |
| Bournda Environmental Education Centre | Bournda National Park | Kalaru | 2550 |
| Brewongle Environmental Education Centre | 587 Chapel Hill Road | Sackville North | 2756 |
| Camden Park Environmental Education Centre | Finns Rd & Remembrance Dr | Menangle | 2568 |
| Cascade Environmental Education Centre | Coramba Rd | Cascade | 2453 |
| Dorroughby Environmental Education Centre | 2101 Dunoon Rd | Dorroughby | 2480 |
| Field of Mars Environmental Education Centre | Pittwater Rd | East Ryde | 2113 |
| Georges River Environmental Education Centre | Central Ave | Chipping Norton | 2170 |
| Gibberagong Environmental Education Centre | Ku-ring-gai Chase National Pk | Bobbin Head | 2077 |
| Illawarra Environmental Education Centre | Killalea State Park | Dunmore | 2529 |
| Longneck Lagoon Environmental Education Centre | Whitmore Rd | Maraylya | 2765 |
| Observatory Hill Environmental Education Centre | Upper Fort St Observatory Hill | Millers Point | 2000 |
| Penrith Lakes Environmental Education Centre | 89-151 Old Castlereagh Road | Castlereagh | 2749 |
| Red Hill Environmental Education Centre | Saunders Ave | Gulgong | 2852 |
| Riverina Environmental Education Centre | Cnr Sturt & Olympic Highway | Wagga Wagga | 2650 |
| Royal National Park Environmental Education Centre | Farnell Ave | Audley Heights | 2232 |
| Rumbalara Environmental Education Centre | Donnison St | Gosford | 2250 |
| Thalgarrah Environmental Education Centre | Rockvale Rd | Armidale | 2350 |
| Wambangalang Environmental Education Centre | Obley Rd | Dubbo | 2830 |
| Warrumbungle National Park Environmental Education Centre | Warrumbungle National Park | Coonabarabran | 2357 |
| Wetlands Environmental Education Centre | Sandgate Rd | Shortland | 2307 |
| Wooglemai Environmental Education Centre | Sheehys Creek Rd | Oakdale | 2570 |

If suitable teachers could also arrange a visit/video conference from a vet/vet nurse/zookeeper and this would provide a link for post-school opportunities and increase students real world knowledge and experience of how science is used in different vocations.

Teacher could have students work in groups, modelling how zoos have different areas and have the groups decide which animals will be on display. They could be asked to justify their choices by presenting reaso9ns to the zoo director (teacher).

A STEM approach could be incorporated where students use their infographics to design an enclosure for their animal and promotional flyer about the upcoming opening of the enclosure. Literacy elements could be implemented if students were asked to write a text such as a newspaper article or invitation to delegates for the opening of the exhibit.

This assessment task is broken up into individual lessons. Below is an example of a sequence to frame the assessment task. The timing and order of lessons may be adjusted by the teacher to suit the needs of their class and each student.

|  |  |
| --- | --- |
| Time | What do you need to do? |
| 4-8 lessons | **Creating an infographic**  Your Infographic should include:   * Animal name * Scientific name * Conservation Status * Description * Food sources * Type of animal e.g. mammal, amphibian, insect, fish or bird. * Habitat * Adaptations * Picture * Interesting facts   The infographic can be created on websites such as Piktochart, Canva and Visual.ly. Other mediums such as paper or PowerPoint can also be used. Your options are not limited to the above suggestions. |
| 1 lesson | **Gallery Walk**  All infographics will be given feedback by the other zookeepers. This can be done using Post-It-Notes or ‘three stars and a wish’. |
| 1 lesson | **Refining Infographic**  You will have time to edit your infographic using your feedback. |
| 2 lessons | **Dichotomous Key**  You will use your infographic plus 5 other zookeepers’ infographics to design a dichotomous key.  This can be presented on a poster, another infographic or any other form of presentation. |

Task

A zookeeper is a person who works in a zoo to look after animals that are kept in captivity for conservation. Their job is to feed, enrich, clean enclosures and report on their health. Zookeepers may also be involved in education, scientific research, conducting tours or answering questions.

You are a zookeeper at Sample Zoo and all your classmates are also zookeepers. Your boss has asked all zookeepers to create an Infographic on the animal that you specifically look after. This Infographic will be used in the zoo for primary school students.

Your last job will be to use 6 infographics from the zoo’s collection to create a dichotomous key to classify the animals into different groups.

At the end of this assessment you would have produced:

* An infographic on an animal
* A dichotomous key using 6 animals

Marking guideline/rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Limited | Basic | Sound | Thorough | Extensive |
| **Research** | Information on Infographic includes one to two items stated in the ‘What to include’ section.  There is minimal correct information about the chosen animal, but lacks any detail. | Information on Infographic includes some items stated in the ‘What to include’ section.  There is some correct information about the chosen animal, but lacks detail. | Information on Infographic includes most items stated in the ‘What to include’ section.  There is correct information about the chosen animal, but it may lack detail.  There might be some unnecessary information | Information on Infographic includes all items stated in the ‘What to include’ section.  There is correct information about the chosen animal.  There might be some unnecessary information or jargon. | Information on Infographic includes all items stated in the ‘What to include’ section.  There is correct but also in-depth information about the chosen animal.  There is no unnecessary information or jargon. |
| **Constructing a dichotomous key** | Constructs a dichotomous key with segmentations.  Each segmentation is divided into two or more parts with one or two characteristics being examined. The key will not be clear on what is being separated.  A few animals are separated into their own categories at the end of the dichotomous key. | Constructs a dichotomous key with segmentations.  Each segmentation is divided into two or more parts with one or two characteristics being examined. The key will not be clear on what is being separated.  A few animals are separated into their own categories at the end of the dichotomous key. | Constructs a dichotomous key with segmentations.  Each segmentation is divided into two parts with one characteristic being examined, but this may not be very clear or uses two characteristics at the division to classify the animals.  Some animals are separated into their own categories at the end of the dichotomous key. | Constructs a dichotomous key with segmentations.  Each segmentation is divided into two parts with one characteristic being examined.  Animals are clearly separated into their own categories at the end of the dichotomous key. | Constructs a clear dichotomous key with clear segmentations.  Each segmentation is divided into two parts with one characteristic being examined.  Animals are clearly separated into their own categories at the end of the dichotomous key. |
| **Presentation of infographic** | No apparent attempt to display features of the animals.  Might include a picture.  Language is unclear or inappropriate and has many spelling and grammatical errors. | Infographic lacks many aspects and is unclear.  Includes a picture of the animal or other images such as symbols may aid the display.  Frequent spelling, punctuation and grammatical mistakes. | Displays most aspects of the infographic.  Includes a picture of the animal or other images such as symbols may aid the display.  Spelling and grammar is appropriate and generally correct, one or two errors may be present. | Clearly displays most aspects of the infographic and is mostly easy to read.  Includes pictures of the animal or other images such as symbols may aid the display.  The language uses correct spelling, punctuation and grammar. | Clearly displays all aspects of the infographic in a logical layout and is easy to read.  Includes pictures of the animal. Other images such as symbols may aid the display.  The language uses clarity and uses correct spelling, punctuation and grammar. |
| **Presentation of dichotomous key** | No apparent structure to the dichotomous key.  The dichotomous key may be hard to read  No pictures are included or if they are they do not accompany the animals.  No facts are included.  Language is unclear or inappropriate and has many spelling and grammatical errors. | Presentation of dichotomous key is not very logical.  The dichotomous key display is compacted and hard to read.  Pictures may accompany the names of some of the animals. However, they may not sit with the names.  No facts are included.  Frequent spelling, punctuation and grammatical mistakes. | Presentation of dichotomous key is somewhat logical.  Uses most of the page to display the dichotomous key, but it may be compacted.  Pictures also accompany the names of some of the animals.  Few key facts are included for each animal.  Spelling and grammar is appropriate and generally correct, one or two errors may be present | Presentation of dichotomous key is logical.  Uses most of the page to display the dichotomous key.  Pictures also accompany the names of the animals.  Some key facts are included for each animal.  The language uses correct spelling, punctuation and grammar. | Presentation of dichotomous key is logical and easy to follow.  Uses the whole page to display the dichotomous key.  Pictures also accompany the names of the animals.  One key fact is included for each animal.  The language demonstrates extensive knowledge of spelling, punctuation and grammar. |

Resources

Creation tools

The following website can be used to create infographics

1. Canva <https://www.canva.com>
2. Piktochart <https://piktochart.com>
3. Venngage <https://venngage.com/>
4. Visme [https://visme.co](https://piktochart.com/)

Hints and tips

Infographics are visually appealing graphics which contain information (text, data, pictures) that is succinct and easy to understand. Infographics which are effective meet the target audience and displays the right information. Below are some hints and tips which you can share with students to create infographics.

1. Simple infographics are the most effective. Do not present too much information on the one infographic as it will become harder to read and understand.
2. Infographics should have a key focus. As infographics serve to present text and data, it is essential that you focus on one key point. It is not feasible to simply present all the data or randomly assemble information.
3. Show things visually. Infographics are about presenting information in a visual way as it can be easier to understand. Add images that complement the information and not just for decorative purposes.
4. Take care when using fonts and sizes. Fonts should be easy to read and sizes should complement the information.
5. Make it a manageable size or length. The purpose of an infographic will dictate what size it should be. Make the size manageable. It may look like a poster if you are presenting information about a topic or it could be a banner (vertical or horizontal) if it is displaying facts and figures. Readers may lose attention if infographics are too big.
6. Headlines are important and draw the reader to your infographic.
7. Make sure the flow is easy to follow. Infographics can read like a story, and as such should flow. The flow will help the reader pay attention to what you are presenting. Sections, headings and different coloured backgrounds add to the flow.
8. Make sure all information is correct. This includes checking facts and figures and citing all information (references).