Cassowary Activities

An Outcomes Based Unit for Years 5-7
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<td>Cassowary Guidebook</td>
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<td>Cassowary On-Line Report</td>
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<td>24</td>
<td>47-48</td>
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<td>Cassowary Mime</td>
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<td>26</td>
<td>50</td>
<td>Musical Mime</td>
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LEARNING OUTCOMES
PROMOTED WITHIN THIS UNIT ARE:

Investigating that requires students to clarify questions and formulate problems, gather and analyse relevant information and draw relevant conclusions supported by evidence in:

1. Recognising the significant issues and perspectives involved in the cassowary debate
2. Investigating possibilities for cassowary survival

Creating that requires students to be enterprising and to think laterally and visually to be able to anticipate, transfer knowledge and skills from one situation to another and reorganise information and perceptions into new patterns and representation by:

1. Responding resourcefully and with initiative to the problems of the cassowary.
2. Designing and developing strategy, plans and a survival campaign.

Communicating that requires students to read, listen, interpret, translate and express ideas and information by:

1. Suggesting links between elements, describing cause and effect relationships, explaining consequences and expressing predictions.
2. Selecting media and styles appropriate to the purpose and audience to present information, arguments and conclusions.

Participating that requires students to relate to and work constructively with others to solve problems, make decisions and negotiate and enact plans for action through:

1. Performing confidently as independent, self-directed individuals on tasks, problems and projects, and in doing so, take responsibility for their own actions and decisions.
2. Using interpersonal skills to contribute positively to group dynamics, appreciate diverse perspectives, negotiate conflicting interests, meet needs, perform tasks or work towards a shared goal.
3. Relating to environments in sustainable ways and promoting sustainable practices in families, schools and the community.
Reflecting that requires students to demonstrate a willingness to reconsider and recognise that introspection and metacognition are inherent and crucial components of any investigation through:

1. Considering own learning style, strengths and weaknesses, attitudes and depth of knowledge, and repertoire of skills and strategy with the conscious aim of improving learning.

2. Planning, organising, evaluating and managing their own thinking, performance, behaviour, well being and progress by applying appropriate skills and strategy and monitoring the success of the project.

3. Transferring concepts, ideas, skills and strategy to entirely new situations and looking for opportunities to do so.

I am investigating when I recognise significant cassowary issues
I am participating when I share my ideas with others
I am reflecting when I consider how well the campaign worked
I am creating when I develop the campaign to save cassowaries
I am communicating when I discuss and display my work
### CASSOWARY OUTCOMES

The main learning outcomes (below) are based on the current Education Queensland Science and Studies Of Society and Environment Syllabi Core Learning outcomes.

<table>
<thead>
<tr>
<th>KLA</th>
<th>Core Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Life &amp; Living</td>
<td>LL 3.1 Students draw conclusions about the relationships between features of living things and the environment in which they live - living things have features that help them survive in their environment.</td>
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<tr>
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<td>LL 3.2 Students present information that illustrates stages in different types of life cycles of familiar living things.</td>
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<td>LL 3.3 Students describe some interactions between living things and between living and non-living parts of the environment - environments consist of living and non-living components that interact.</td>
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<td>LL 4.1 Students examine the internal &amp; external structure of living things and account for observed similarities and differences in terms of adaptation.</td>
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<td></td>
<td>LL 4.2 Students identify and analyse similarities and differences in the ways that different living things reproduce. Activity/Suggested Assessment</td>
</tr>
</tbody>
</table>
Core Outcomes

PS 3.1 Students compare how diverse groups have used and managed natural resources in different environments.

PS 3.2 Students create and undertake plans that aim to influence decisions about an element of a place.

PS 3.3 Students cooperatively collect and analyse data obtained through field study to influence the care of the local place.

PS 3.4 Students use and make maps to identify coastal and land features.

PS 3.5 Students describe the values underlying personal and other people’s actions regarding familiar places.

PS 4.1 Students make justifiable links between ecological and economic factors and the production and consumption of a familiar resource.

PS 4.2 Students predict the impact of changes on environments by comparing evidence.

PS 4.3 Students participate in a field study to recommend the most effective ways to care for a place.
CASSOWARY ACTIVITY OVERVIEW

An outcomes based integrated planner based on The Awesome Matrix by Tony Ryan

Global Outcomes: Students recognize, collect information and examine issues facing the continued survival of the cassowary to realize the significance of:

- Balance between development and conservation values
- Vision for the future

<table>
<thead>
<tr>
<th>STRATEGY/CHECKLIST</th>
<th>TECHNOLOGICAL</th>
<th>NATURE/NATURALISTIC</th>
<th>INTERPERSONAL</th>
<th>INTRAPERSONAL</th>
<th>MUSIC/AUDITORY</th>
<th>BODY/KINAESTHETIC</th>
<th>PICTURE/SPATIAL</th>
<th>LOGICAL/MATHEMATICAL</th>
<th>VERBAL/LINGUISTIC</th>
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<tbody>
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- **Possible Further ideas**

- **Cassowary Catalogue**
- **Cassowary Fact Table**
- **Cassowary Sleuth**
- **Cassowary Changing Environments**
- **Cassowary Life Styles**
- **Cassowary Landscapes**
- **Cassowary Information Table**
- **Cassowary Poster**
- **Cassowary Survival Game**
- **Cassowary Mime**
- **Endangered Species**
- **Human Impact**
- **Web Search**
- **Cassowary Walk**
- **Retrieval Chart**
- **Mind Map**
- **Distribution Map**
- **Cassowary Guidebook**
- **Cassowary Online**
- **Cassowary Consequences**
- **Do's and Don't's**
- **Cassowary Web Search**
- **Cassowary Poster**
- **Cassowary Display**
- **Cassowary Advertiser**
- **Cassowary Information Table**
- **Mind Map**
- **Personal Journal**
- **Saving the Big Birds**
- **Interviews**
- **Web Search & Hotlist**
- **Online Report**
- **Scale Mapping**
- **Picture Strategy**
- **Inquiry**
- **Collaborative**
- **Think, Pair, Share**
- **Jigsaw**
- **Triads**
- **Hot Potato**
- **EAT’s**
- **1,2,4**
- **Numbered Heads**
- **Role Play**
- **Interviews**

* Possible Further ideas
CASSOWARY CATALOGUE

MATRIX:
Remember/Verbal Linguistic

STRATEGY:
Think, Pair, Share for brainstorming and discussion

MATERIALS:
☐ Slips of paper for brainstorming
☐ Large sheet of paper to make ‘known knowledge’ chart

PROCEDURE:
1. Students individually brainstorm what they already know about cassowaries on a sheet of paper. Allow students 3 minutes to complete this task.
2. Combine in pairs and share ideas and add extra information that has been generated through discussion. Allow 5 minutes for students to complete this task.
3. Appoint a spokesperson. Share ideas with class.
4. Compile a single list of all ideas collected and display on chart.
5. This chart can be used throughout the project to record additional information.
2

CASSOWARY SLEUTHS

MATRIX:
Remember/ Verbal Linguistic, Logical Mathematical

STRATEGY:
Jigsaw - this strategy allows the class to investigate all the information provided in the kit in a short space of time

MATERIALS:
- Retrieval Chart and information from kit.
- Cassowaries in the wet tropics
- Cassowary in Queensland
- Cassowary - Australia’s Endangered Rainforest Inhabitant
- Threatened Animals
- Tropical Topics - a compilation
- Video - Endangered Australians

PROCEDURE:

1. Form six groups.
2. Each group receives a different pamphlet to read and review.
3. Each group uses grid to record key headings.
4. Students discuss information considering:
   - value of information - is it useful?
   - Readability - is it easily understood and relevant?
   - Presentation - does it grab your attention?
5. Rate pamphlet out of ten considering the above points.
6. Share information gathered on pamphlets.
7. Rate pamphlets in group and change original opinions if necessary.
8. Select a leader to briefly outline value of each pamphlet with whole class.

(You will find this page in the Activity Pack. Photocopy as required.)
WEB SEARCH

MATRIX: Understand/Technological

STRATEGY: Access information about cassowaries from a variety of web sites

MATERIALS: Student web access

PROCEDURE:

You can use bookmarks and favourites to maintain a list of frequently used web sites. This will save considerable time to entering URL's by hand.

1. Give students the following list and get them to search for information about cassowaries

   □ www.schoolworld.asn.au/species/species.html
   □ www.env.qld.gov.au
   □ www.landcareqld.org.au
   □ www.csiro.au
   □ www.environment.gov.au
   □ www.gould.edu.au
   □ www.greeningaustralia.org.au
   □ www.staq.qld.edu.au
   □ www.gtaq.webcentral.com.au
   □ www.nht.gov.au
   □ www.qmuseum.qld.gov.au
   □ www.acfonline.org.au
   □ www.nccnsw.org.au
   □ www.birdsaustralia.com.au
   □ www.wwf.org
   □ www.org.au
   □ www.wonderland.com.au
   □ www.billabongsanctuary.com.au
   □ www.zoo.nsw.gov.au
   □ www.rainforesthabitat.com.au
   □ www.wildworld-Aus.com.au
   □ www.hartleyscreek.com.au
2. Evaluate each site visited using the following table

<table>
<thead>
<tr>
<th>WEB SEARCH</th>
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<tbody>
<tr>
<td>FEATU</td>
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<tr>
<td>1.</td>
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<tr>
<td>ACCTA</td>
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<tr>
<td>5678</td>
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<tr>
<td>3456</td>
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<tr>
<td>0123</td>
</tr>
</tbody>
</table>

3. Students could also use search engines to find sites

4. To add a page to Bookmarks or Favourites - choose the exact site you wish to return to from the Bookmark or Favourites menu, choose ‘Add’, name the page - choose an appropriate title and Add to list to open the page - open Bookmark or Favourites menu - click on the page name you want to open

(You will find this page in the Activity Pack. Photocopy as required.)
CASSOWARY JOURNAL

MATRIX: Evaluate/ Intrapersonal

STRATEGIES: Reflection log

MATERIALS: Small notebook, diary or exercise book

PROCEDURE:

1. Students keep a personal reflective journal about activities undertaken.
   Include:
   - Write facts collected
   - Recount personal thoughts and feelings
   - List issues as student sees them
   - Set goals
   - Formulate plans to achieve goals
   - Fill with interesting newspaper articles, pictures, interviews, facts, figures, charts, graphs, web information
   - Diagrams and sketches
   - Cartoons, speech bubbles
   - Good news about people, departments and companies
   - Favourite cassowary words, poems, sayings
   - Rate activities giving reasons

2. Students can use this journal at the end of the unit to complete the blank Mind Map (see Activity 20).

REFLECTION LOG

AN INTERESTING FACT... "THINK ABOUT IT"

A GOOD IDEA TO HELP IS... "DO IT"

MY INNER FEELINGS... "MEDIATE ON IT"

I WANT TO TALK ABOUT... "DISCUSS IT"

AN INSIGHT... "WRITE IT"
GUEST SPEAKER

MATRIX:

Remember / Interpersonal

STRATEGY:

Triads to develop questions

MATERIALS:

☐ Guest speaker - contact Qld Parks and Wildlife Service; or local wildlife park curator (see list in Support Materials pack)
☐ Local cassowary conservation group expert (North Queensland)

PROCEDURE:

Guest speakers provide a natural context for gaining deeper knowledge by questioning experts. This activity can increase communication skills and critical listening skills. This activity can be linked to visit to wildlife parks or in a school setting.

1. Plan questions
   - Talk about the information needed
   - Brainstorm questions in whole group
   - Use a question framework to organise sequence of questions
     - Who
     - What
     - When
     - Where
     - Why
     - How
   - Work in threes to develop range of questions
   - As a whole group discuss questions
   - Delete, refine or elaborate considering open ended questions

2. Practice questions - set up a practice situation to identify strengths and weaknesses.
   - Were the questions worded to avoid yes/no answers?
   - Do the questions lead to attaining required information?
   - Did questions provide ideas for follow up questions?

3. Consider who will take notes, tape or video the guest speaker and who will introduce and thank the guest.

4. Guest in classroom or on field trip
   - Listen carefully - show interest in what is being said
   - Ask questions clearly, giving time to respond
   - Consider further contact - another visit, phone, email, excursion

5. Follow up activities - written report for class, school newsletter, community newspaper, reflection log, debate
CASSOWARY INFORMATION TABLE

MATRIX: Understand/ Logical Mathematical

STRATEGY: Construction of a Table

MATERIALS:
- Ruled up information table
- Articles from kit
- Books on cassowaries from the library e.g. Birds
- World Wide Web information
- Video

PROCEDURE:
1. Divide class into groups of 4. Use articles from previous activity. At least 1 student should be familiar with the article.
2. Complete table of facts about the cassowary.
3. Add more information to the table as and when it is discovered throughout all activities.
**CASSOWARY ACTIVITIES**

**PRACTICAL DISCOVERIES**

**MATRIX:**
Understand/ Body Kinesthetic

**STRATEGY:**
Whole group - an introductory series of three practical activities to establish the general features of and facts about cassowaries.

**MATERIALS:**
- Scales
- Tape Measure
- Backpack

**PROCEDURE:**

**Cassowary Dimensions**

1. Students guess height of cassowary. Show suggested heights on vertical surface. Measure heights. Several students scan fact sheets for average height - between 1.85m - 2m.

2. Measure height of several students using the tape measure to work out approx height of cassowary, eg. teacher or 1½ students. Measure height on vertical surface. A cardboard cutout can then be made.

3. Students guess weight of cassowary. Suggestions written on blackboard. Average cassowary weights are:
   - Heaviest 85kg
   - Female 60kg
   - Male 34kg

4. Students gather in groups that they think will add up to 85kg. Each group then weighs in. The closest group to 85kg receives an incentive.

**Things that Kill Cassowaries**

1. Students list ideas using basic retrieval chart. Some ideas are:

<table>
<thead>
<tr>
<th>NATURAL</th>
<th>UNNATURAL</th>
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<tbody>
<tr>
<td>OLD AGE DINGOES</td>
<td>ROAD DEATH</td>
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<td>PYTHONs (EAT YOUNG)</td>
<td>POISON (BAIT)</td>
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<td>GOANNAS (EGGS)</td>
<td>LAND CLEARING</td>
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<td>QUOLL (CARNIVEROUS</td>
<td>PIGS (BREAK EGGS, CAUSE DISEASE)</td>
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<td>CAT, NOCTURNAL)</td>
<td>SHOOTING</td>
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<td></td>
<td>DOGS</td>
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</table>

Most damage caused by land clearing and fragmentation of environment.

**Cranky Cassowary - Boxed Bushwalker**

1. Role play a bush walker meeting a cranky cassowary.

2. Decide what to do and act it out.

3. Suggestions:
   - Running away   NO
   - Making yourself larger   YES
   - Getting behind a tree (with stomach against tree)   YES
   - Backpack to cover stomach   YES
**ENDANGERED SPECIES**

**MATRIX:**
Understand / interpersonal

**STRATEGY:**
Hot potato
Oral discussion with 6 speakers

**MATERIALS:**
- Access to world wide web sites:
- SchoolWorld Endangered Species Project
- Sheets of paper for recording ideas

**PROCEDURE:**

1. Divide class into six groups.
2. Discuss the threatened species - degrees of risk :
3. Discuss and answer student questions.
4. Brainstorm endangered species in Australia and Queensland using the hot potato strategy.
   - Each team sits in a circle so that a piece of paper can be passed from one member to the next.
   - The first student writes one known species on the piece of paper then passes it to the next person, who does the same. This process continues around the group. Discussion and prediction is encouraged.
   - At the end of the time, each group shares their information with the other groups. Teacher adds names of species overlooked.
5. Classify species into six categories:
6. Introduce the topic question ‘What does it mean to be endangered?’
7. Each group of 6 selects a category and researches one animal or plant in that category.
8. Use the following questions as a guide for answering the topic question ‘What does it mean to be endangered?’
   - Where does the species live?
   - What is their life style/growth phase?
   - Does it have any unusual features?
   - What are its special needs?
   - What is causing the animal/plant to become endangered?
   - Other threatened species in its habitat
   - What can humans do now to protect it?
9. Write about the species for an oral presentation to the class.
10. Oral Presentation - share speaking tasks among group:
    
    **Structure of presentation**
    
    **Speaker 1**
    - Introduce species
    - Briefly outline task the group undertook and the roles of each speaker will follow
    
    **Speakers 2-5**
    - Body - answer questions posed about their species
    
    **Speaker 6**
    - Conclusion - summarise group’s findings and provide an answer to the question
LISTING GUIDELINES

In assessing the conservation status of listed taxa, heavy reliance is placed on an internationally accepted system of classification developed by the IUCN (the World Conservation Union).

ENDANGERED

A taxon may be prescribed under the Act as endangered if:

a. its number has been reduced to a critical level or its habitat has been so drastically reduced that it may be in immediate danger of extinction; or,

b. it has not been sighted in the wild for a period critical to its life cycle although no thorough search has been made for it.

Under IUCN, species are considered endangered if one of the following five conditions applies (Listed as A to E):

A. Population reduction in the form of either of the following:

1. An observed, estimated, inferred or suspected reduction of at least 50 percent over the last 10 years or three generations, whichever is the longer, based on (and specifying) any of the following:
   a. direct observation
   b. an index of abundance appropriate for the taxon
   c. a decline in area of occupancy, extent of occurrence and/or quality of habitat
   d. actual or potential levels of exploitation
   e. the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites

2. A reduction of at least 50 percent, projected or suspected to be met within the next 10 years or three generations, whichever is the longer, based on (and specifying) any of (b), (c), (d), or (e) above. (continued)

B. Extent of occurrence estimated to be less than 5000 sq/km or area of occupancy estimated to be less than 500 sq/km, and estimates indicating any two of the following:

1. Severely fragmented or known to exist at no more than five locations.

2. Continuing decline, inferred, observed or projected, in any of the following:
   a. extent of occurrence
   b. area of occupancy
   c. area, extent and/or quality of habitat
   d. number of locations or subpopulations
   e. number of mature individuals

(continued)
3. Extreme fluctuations in any of the following:
   a. extent of occurrence
   b. area of occupancy
   c. number of locations or subpopulations
   d. number of mature individuals

C. Population estimated to number fewer than 2500 mature individuals and either:
   1. An estimated continuing decline of at least 20 percent within five years or two generations, whichever is longer; or
   2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of:
      a. severely fragmented (that is no subpopulation estimated to contain more than 250 mature individuals); or
      b. all individuals are in a single subpopulation.

D. Population estimated to number fewer than 250 mature individuals.

E. Quantitative analysis showing the probability of extinction on the wild is at least 20 percent within 20 years of five generations, whichever is the longer.

**Vulnerable**

A taxon may be prescribed under the Act as vulnerable if:
   a. its population is decreasing because of threatening processes; or
   b. its population has been seriously depleted and its protection is not secured; or
   c. its population, while abundant, is at risk because of threatening processes; or
   d. its population is:
      • low or localised: or
      • dependent on limited habitat that is at risk because of threatening processes.

Under IUCN, species are considered vulnerable if one of the following five conditions applies (Listed as **A** to **E**):

**A. Population reduction in the form of either of the following:**
   1. An observed, estimated, inferred or suspected reduction of at least 20 percent over the last 10 years of three generations, whichever is the longer, based on (and specifying) any of the following:
      a. direct observation
      b. an index of abundance appropriate for the taxon
      c. a decline in area of occupancy, extent of occurrence and/or quality of habitat
d. actual or potential levels of exploitation

e. the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.

2. A reduction of at least 20 percent, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on (and specifying) and of (b), (c), (d) or (e) above.

B. Extent of occurrence estimated to be less than 20 000 sq/km or area of occupancy estimated to be less than 2000 sq/km, and estimates indicating any two of the following:

1. Severely fragmented or known to exist at no more than 10 locations

2. Continuing decline, inferred, observed or projected, in any of the following:
   a. extent of occurrence
   b. area of occupancy
   c. area, extent and/or quality of habitat
   d. number of locations or subpopulations
   e. number of mature individuals

3. Extreme fluctuations in any of the following:
   a. extent of occurrence
   b. area of occupancy
   c. number of locations or subpopulations
   d. number of mature individuals

C. Population estimated to number fewer than 10 000 mature individuals and either:

1. An estimated continuing decline of at least 10 percent within 10 years or three generations, whichever is longer; or

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of:
   a. severely fragmented (that is no subpopulation estimated to contain more than 1000 mature individuals); or
   b. all individuals are in a single subpopulation

D. Population very small or restricted in the form of either of the following:

1. Population estimated to number fewer than 1000 mature individuals.

2. Population is characterised by an acute restriction in its area of occupancy (typically less than 100 sq/km) or in the number of locations (typically fewer than five). Such a taxon would thus be prone to the effects of human activities (or stochastic events whose impact is increased by human activities) within a very short period of time in an unforeseeable future, and is thus capable of becoming critically endangered or even extinct in a very short period.

E. Quantitative analysis showing the probability of extinction in the wild is at least 10 percent within 100 years.
**RARE**

A taxon may be prescribed under the Act as rare if its population is represented by:

a. relatively large population in a restricted range; or

b. smaller populations thinly spread over a wider range

**PRESUMED EXTINCT**

A taxon may be prescribed under the Act as presumed extinct if it has not been sighted in the wild for a period critical to its life cycle despite thorough searching.

**COMMON**

A taxon may be prescribed under the Act as common if it is:

a. common or abundant; and

b. it is likely to survive in the wild even though it is the subject of a threatening process

The koala, echidna, platypus and migratory birds subject to international agreements are assessed as common, and are given particular recognition by requiring governments to have regard to their special cultural significance and management requirements needed to conserve existing populations.
CASSOWARY HABITAT

MATRIX: Understand/Verbal Linguistic

STRATEGY: Skimming and scanning

MATERIALS: ☑ Habitat Information Chart, cassowary pamphlets
☑ Fact Sheets - Northern hairy - nosed wombat;
☑ Proserpine rock-wallaby; Mahogany Glider, Bilby

PROCEDURE:

1. Brainstorm habitat components:
   - Space
   - Climate
   - Food
   - Water
   - Shelter
   - Vegetation diversity

2. Skim/scan information sources - contents page, index, glossary, titles

3. Work in small groups to complete chart. Each group contrasts with another endangered species.

4. Encourage discussion and reference to variety of sources

<table>
<thead>
<tr>
<th>HABITAT COMPONENT</th>
<th>ENDANGERED SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CASSOWARY</td>
</tr>
<tr>
<td>SPACE</td>
<td>RAINFOREST, MELALEUCA WOODLANDS, SWAMPS, FORESHORE, MANGROVES,</td>
</tr>
<tr>
<td>CLIMATE</td>
<td>WET/HUMID; 2500 - 5000MM PER ANNUM</td>
</tr>
<tr>
<td>FOOD</td>
<td>‘SPECIALIST FRUGIVORES’ FOREST FRUITS, SNAILS, INSECTS FUNGI, FLOWERS, SOME SMALL ANIMALS (RATS, MICE, CHICKS)</td>
</tr>
<tr>
<td>WATER</td>
<td>WATER FOR DRINKING &amp; BATHING - HIGH WATER REQUIREMENTS</td>
</tr>
<tr>
<td>SHELTER</td>
<td>FOREST CANOPY</td>
</tr>
</tbody>
</table>
CASSOWARY DISTRIBUTION

MATRIX: Picture/Spatial

STRATEGY: Overlay transparencies to increase awareness of vegetation, habitat zones and cassowary territories
Pros, cons, questions

MATERIALS: 
- Wildlife information sheet - The Cassowary in Queensland
- Wet Tropics World Heritage Area transparencies

PROCEDURE:

1. Use cassowary distribution map in fact sheets to map general distribution areas.
2. Reproduce hand drawings of this map for use on poster or to be scanned for online report.
3. Using overlay transparencies examine and discuss Daintree area:
   - Vegetation - students may need to research definitions of vegetation types and pictures of features eg: dry sclerophyll areas
   - Habitats - predict where cassowaries may be located. Check with overlay

(You will find these overlays in the main pack)
4. Conduct a PCQ (Pros, Cons and Questions) to reintroduce the keystone issues to cassowary survival.

- Personnel roles not understood
- Cassowary Rescue - Future Directions

The first two columns help students to think of a variety of divergent ideas while the third column invites students to think 'outside the square' to explore all possibilities. These questions can become the subjects for further research and for the development of action plans where choices, proposed solutions and conclusions can be recommended.
CASSOWARY WALK
(AN ECOSYSTEM OBSERVATION)

MATRIX:
Apply / nature (possible Wildlife Park activity)

STRATEGY:
Collect data through observation of a natural habitat

MATERIALS:
☐ A natural area, if possible, a cassowary habitat or Wildlife Park
(refer to list in Support Pack)

PROCEDURE:
An ecosystem is an area in which all living (biotic) and non-living (abiotic) things interact.

ACTIVITY 1 - HABITAT OBSERVATION

1. On a field trip or local walk students work individually to observe a section of the area.
2. If possible, choose an area where there is a variety of plant and animal life and different parts to the habitat - rainforest, creek, swamp.
3. Students work quietly on their own - this is a very important aspect of this activity.
4. Students observe their ecosystem using all their senses for 5 - 10 minutes before listing observations.
5. Using the proforma, students list 5 observations.
   Reflect on:
   ✔ Shelter eg shade and visibility - can you see a long way?
   ✔ Water - puddles, swamps, creeks
   ✔ Food - fruit on the forest floor, rotting logs, fungi, spiders, insects

ACTIVITY 2 - DETAILED OBSERVATION OF A CASSOWARY

1. Before trip complete Cassowary Information Table.
2. Use descriptions, diagrams and sketches to record cassowary features. Include:
   ✔ Identikit sketch - front and side views
   ✔ Interesting features - colours, shape, eyelashes, toenails, casque
   ✔ Observe droppings - the most common sign of cassowary activity
   ✔ Differences between ages
   ✔ Sounds
   ✔ Student’s feelings eg threatened by size or behaviour? Overwhelmed by size / brightness?
3. Answer the following questions:
   ✔ What makes the area suited to cassowaries?
   ✔ What would the cassowary not like about the area?
   ✔ What habitat components appeal to the cassowary: eg water, canopy, food?

**ACTIVITY 3 - DISCUSSION**

The cassowary is synonymous with the rainforests of North Queensland. Discuss with guide/staff/guest speaker ‘if we cannot protect the largest native bird of our tropical forests, what hope do WE as a species have’. Take notes on reply. This could then form the question for a debate back in class.

**ACTIVITY 4 - FOOD CHART**

Back in the classroom construct a food chart (as below) using the data collected on the field trip and information from fact sheets.

![Food Chart](image)

**ACTIVITY 5 - DISCUSSION**

Back in the classroom, conduct a class discussion, posing the following questions:

✔ What would the application of an herbicide do to your ecosystem?
✔ What would the application of a pesticide do to your ecosystem?
✔ What would happen if garbage were dumped into your ecosystem?
✔ What would happen if water was removed from your ecosystem?

*Keep all notes, diagrams and drawings to use in developing guidebook.*
CASSOWARY LANDSCAPES

MATRIX:
Understand / Picture Spatial

STRATEGY:
Evaluation Strategy - one of the oldest strategies, first recorded in print by Benjamin Franklin

MATERIALS:
☐ Landscape drawings (in this kit)

PROCEDURE:
1. This T chart is best used in pairs. Each member to complete ideas of one side of the T chart.
2. After completing the initial T chart, students can rate points raised in each column.
3. Share among class. Make a class chart of top 5 ideas in each column.
4. Design and draw/paint preferred landscape for cassowaries using landscape drawing as a guide.

(You will find this page in the Activity Pack. Photocopy as required.)
CHANGING ENvironments

Matrix: Understand / Picture Spatial

Strategy: Highlighting changes in natural features

Materials: ☐ Old photos, drawings of environment, pamphlets,
☐ Cassowary transparent distribution maps (in kit)
☐ Landscape picture

Procedure:

1. Draw a map of a cassowary habitat as it may have been before European settlement. Consider natural features - mountains, valleys, rivers, creeks, coastline, vegetation (rainforest, melaleuca woodland, mangroves, swamps)

2. List animals and plants that lived in the environment.

3. Students could close eyes and imagine they are walking through the area as it was then.

4. Encourage the use of a key to distinguish natural features.

5. After the drawing has been completed compose a sensory poem to accompany the picture. Use senses as an introduction for draft. Do not include in final publication.

- (see) Red and blue among black plumage
- (hear) Water trickling over the rocks
- (touch) Fragile fern fingers against my skin
- (smell) Air clear and refreshing
- (see) Green speckled eggs almost invisible
- (hear) A cacophony of birds
- (think) This is heaven!

6. Describe the cassowary habitat as it is today. Think about man made features - roads, buildings, bridges etc.

7. Make a list of natural and built features before completing second map.
8. Use a key to show natural and built features.

9. After the drawing has been completed compose a second poem to contrast the "then" and "now" environments.

- (see) Cane harvesters in the paddock
- (hear) Human voices talking
- (feel) The sun hot on my skin
- (think) The world is changing
- (see) A cassowary in sight
- (hear) Screech of brakes, thud of cassowary
- (remember) The peaceful past is gone.

10. As an extension, discuss local cassowary habitats.

11. Should they be protected from further use by humans? Does everyone agree?

12. Design and develop a poster to inform the community of the importance of preserving this local area.
**LIFE STYLES**

**MATRIX:** Understand/Logical Mathematical

**STRATEGY:** Contrast and summarise life styles of cassowaries and bush turkeys. Venn Diagram - graphic organiser/ 3 step interview

**MATERIALS:** Information collected from facts sheets and any other sources about cassowaries and bush turkeys

**PROCEDURE:**

A Venn diagram is a graphic organiser for finding areas of difference and similarity.

1. Divide into teams of 4, numbering the members 1-4

2. Introduce the discussion topic ‘Compare the life styles of the cassowary and bush turkey’. List similarities and differences using the following key features.
   - colour
   - size
   - habitat
   - distribution
   - diet
   - nesting
   - parental responsibilities
   - conservation status

3. Divide into pairs eg 1/2; 3/4. 1/2 research and take notes on the life of cassowaries while 3/4 do the same for bush turkeys

4. The 3 step interview is then introduced.

   **Step 1** Nos 1 and 3 interview each other about the information they have gathered. Nos 2 and 4 interview and share their information

   **Step 2** Nos 1 and 4 interview each other and start to list areas of similarity and difference. Nos 2 and 4 do the same

   **Step 3** The 4 members then develop a Venn Diagram together

5. Share diagrams among groups and display. Students could also transfer information to graphs or tables.

   ![Venn Diagram - 2 interconnecting circles](image)

   Venn Diagram - 2 interconnecting circles
**HUMAN IMPACT**

**MATRIX:**
Understand / interpersonal

**STRATEGY:**
Top Level frameworks to process information

**MATERIALS:**
- Retrieval chart
- Two column diagram

**PROCEDURE:**

1. Create a cause and effect retrieval chart
2. Suggested topics: Housing and business development; clearing for farming; human intervention; roads and traffic; catastrophic events

### HABITAT MODIFICATION

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INFLUENCE OF HUMANS</strong></td>
<td><strong>CHANGED ENVIRONMENT</strong></td>
</tr>
<tr>
<td>LAND CLEARED FOR FARMING</td>
<td>SOIL EROSION, WATERWAYS CHANGE</td>
</tr>
<tr>
<td>BUILDING DEVELOPMENTS</td>
<td>HABITAT CHANGE - SPACE, SHELTER</td>
</tr>
<tr>
<td>ROADS BUILT THROUGH FOREST</td>
<td>FOOD CHANGE CONSEQUENCES</td>
</tr>
<tr>
<td>INTRODUCED PLANTS &amp; ANIMALS</td>
<td>NATIVE PLANT/ANIMAL LOSS</td>
</tr>
<tr>
<td>CATASTROPHIC EVENTS</td>
<td>FREE FEEDING &amp; HOME RANGE DAMAGE</td>
</tr>
<tr>
<td>DISEASE</td>
<td>INCREASED STRESS &amp; DEATH</td>
</tr>
</tbody>
</table>

3. This could also be completed as a DIAGRAM (structure map)
4. From the above information and along with other information gathered explore the problems of educating people in the steps needed to conserve cassowary habitats (basically it comes down to breaking our everyday habits and choosing a positive path to help).

5. Complete the following:
   Make a list of the rules which people should follow when in a cassowary habitat.

6. Plan an information campaign to educate people about the cassowary’s world.
   ✓ What message needs to be given to the public
   ✓ How could you get the message across
   ✓ Write a catchy slogan, jingle or headline to catch people’s attention
   ✓ Present campaigns to the class
   ✓ Complete a PMI (plus, minus, interesting)
   ✓ Select the five that the whole class likes and present them in the school library or information centre.

7. Extension - Conduct a class debate on:
   "Cassowary habitats should be conserved at all costs"
CASSOWARY CONSEQUENCES

MATRIX: Apply / Nature Naturalistic

STRATEGY: Top level structures - problem / solution

MATERIALS: Timeline; retrieval chart; 2 column diagram

PROCEDURE:

1. Develop a timeline of the cassowary year

   Jan - March
   ✔ Adult males are seen with large young; females solitary
   ✔ Birds roam extensively because food is scarce; eat almost
     anything that can be found, including dried droppings

   April - June
   ✔ Difficult times for birds
   ✔ Adults begin courting May/June
   ✔ Young evicted from home range - hazardous time for
     immature birds learning to fend for themselves in
     competition with intolerant breeding adults; juveniles may die

   July - Sept
   ✔ Fruiting trees in lowlands producing reliable food -
     many favoured species are in full fruit
   ✔ Eggs hatch during maximum fruiting period; males very
     protective of chicks; humans beware

   Oct - Dec
   ✔ Males seen with striped or brown young
   ✔ Colourful females make occasional appearances
   ✔ No shortage of food
   ✔ Birds build up reserves to cope with shortages over the
     next few months.

2. Use this information to find creative solutions to cassowary care

3. Complete the following scenarios

   (You will find this page in the Activity Pack.
   Photocopy as required.)
4. After discussion of the scenarios develop a PROBLEM / SOLUTION retrieval chart and/or a two column diagram.

### Reduced Cassowary Food Sources

<table>
<thead>
<tr>
<th>Problems</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation changes</td>
<td>Land conservation</td>
</tr>
<tr>
<td></td>
<td>Leave natural areas untouched</td>
</tr>
<tr>
<td>Ecosystem imbalance</td>
<td>Clean up introduced species</td>
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<tr>
<td></td>
<td>Revegetation programs</td>
</tr>
<tr>
<td>Cassowary less energy</td>
<td>Implement management plans</td>
</tr>
<tr>
<td></td>
<td>Quarantine procedures</td>
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<tr>
<td></td>
<td>Fund research projects</td>
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<td></td>
<td>Public awareness campaigns</td>
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<td></td>
<td>Join a conservation group</td>
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</tbody>
</table>

**Retrieval Chart**

**Problem**

- Feral Pigs
  - Destroy nests and eggs
  - Competitors for food
  - Contaminate water sources
  - Potential disease source

**Solution**

- Feral Pig Control
  - Pig traps in strategic locations
  - Funding for personnel to locate traps
  - Funding from governments for control programs
  - Feral Pig Control Program
  - Full community involvement in pig control measures
CASSOWARY SURVIVAL

MATRIX: Create / Body Kinesthetic

STRATEGY: Outdoors Game to understand why some cassowaries perish while others survive

MATERIALS:
- [ ] Handkerchiefs for blindfolds
- [ ] Scarves for tying up broken legs/backs
- [ ] Tweezers, chopsticks, pliers, slotted spoons, tongs to use as beaks
- [ ] Different markers for cassowary food

PROCEDURE:

1. All students become cassowaries and choose different implements to make their beaks - discuss which implements are more like cassowary's beak.
2. Cassowaries survive by gathering enough food markers to live. Those who don't will perish.
3. Not all students are healthy cassowaries as happens in nature. Disable students by:
   - ✔️ Blindness - blindfold
   - ✔️ Broken leg - strap with ruler and scarves
   - ✔️ Broken back - bind 2 legs together
   - ✔️ Broken beak - sticky tape over mouth
   - ✔️ Discuss how accident happened using real life situations
4. Spread markers on ground to represent different fruits, or other edible items in the cassowary diet
5. Name and discuss percentage of fruit/items in the area and how many are needed to survive
6. Record numbers of cassowaries on the graph in the following categories - healthy, sick or injured
7. The game
   - ✔️ Students move around as cassowaries collecting markers with their 'beaks'.
   - ✔️ Time allocated will depend on class size and the skill of collecting markers.
   - ✔️ After set time regather and compare numbers of markers collected. Make assumptions about the health of cassowaries eg 20 markers may mean healthy cassowary while 6 markers may be starting to get weaker.
(Continued)

✓ Record numbers on graph.
✓ Continue for 3 more rounds recording numbers at the end of each round.

Variations

✓ Introduce seasonal conditions such as drought, cyclone, flood. Discuss availability of food and adjust markers as necessary

✓ Introduce dangers - some students take on roles as motorists, bulldozers, dogs, feral animals. Work out how each danger affects cassowaries

✓ Record and compare data
SAVING THE BIG BIRDS

MATRIX: Evaluate / technological

STRATEGY: Through participation students:
✓ Develop an awareness and understanding of cassowary conservation issues
✓ Investigate current conservation methods
✓ Make conclusions about their effectiveness
✓ Design, make and appraise a powerpoint/slideshow presentation of their proposals
✓ Work effectively in small Environmental Action Teams (E.A.T.)

MATERIALS: Two computers with Powerpoint, Apple Presentations or Hyperstudio

PROCEDURE:

1. In this activity students will take on the role as environmentalists, conducting research into the southern cassowary and developing a sense of responsibility for the preservation of their habitats.

2. In groups, students will research and write a proposal for the conservation of the cassowary. This activity has enormous potential as an assessment item as it is designed with several components - group work, research, content and multimedia presentation (see assessment sheet).

3. Students will create a multimedia presentation using software such as Powerpoint, Apple Presentation or Hyperstudio to deliver to the rest of the class, parents and/or community groups.
4. Students work in groups of 3 or 4. Group work skills can be improved through a process of explanation, modelling, practice and feedback. Emphasise:

- Group decision making
- Sharing the tasks
- Listening to group members
- Valuing all ideas

5. A student activity sheet and assessment proforma have been developed to assist teachers with this activity.

(You will find this page in the Activity Pack. Photocopy as required.)
DO'S AND DON'TS
(FROM A CASSOWARY'S PERCEPTION)

MATRIX: Apply/ intrapersonal

STRATEGY: Green Hat Thinking/Consider all Factors (CAF)

MATERIALS: Ideas investigation reporting sheet

PROCEDURE:
1. Working in groups, become a cassowary and give advice to humans about how to save them.
2. Use green hat thinking strategy. Think:
   ✓ Creatively
   ✓ Develop different ideas
   ✓ Share new ideas
   ✓ Welcome any suggestions and proposals
   ✓ Adopt other ways to solve the problem
3. Use CAF (Consider All Factors) to encourage broader thinking and to generate a large quantity of ideas. Reinforce that this strategy encourages students to not be blinkered by the obvious and any idea "outside the square" is worthwhile.
4. Record ideas

(You will find this page in the Activity Pack. Photocopy as required.)
**MATRIX:** Evaluate / Visual Spatial

**STRATEGY:** Mind Map

**MATERIALS:** ☐ A3 foldouts of mind map, ☐ Blank map

**PROCEDURE:**

1. Use the mind map as a guide to developing and summarising all information about cassowaries as the unit progresses

2. Use a blank map or make a simpler version and display in classroom and add to as new facts learned. Constructing this map helps students to organise/summarise knowledge visually and allows for discussion of ideas and to practise new vocabulary and concepts

3. Use the blank map as an assessment tool. Students can demonstrate their depth of knowledge and understanding. For an open book assessment students can use Reflective Journals (see activity 4).

**Mind Map**

![Mind Map - blank](You will find this page in the Activity Pack. Photocopy as required.)
CASSOWARY GUIDEBOOK

Apply / Nature (another suggested wildlife park activity)

STRATEGY:
Develop understanding and appreciation of a cassowary ecosystem by publication of a guidebook

Numbered Heads

MATERIALS:
- Lists and sketches from field trip
- Plant /animal references from library, web, experts
- Drawing paper, pencils
- Computer, printer
- Binding materials

PROCEDURE:
1. Recall all animals and plants found on the field trip using the numbered heads strategy
   - Divide the class into teams of three
   - Assign the numbers 1, 2, 3 to each member
   - Ask students to recall and list all animals and plants from their recorded information from field trip
   - Call out a number such as 3 and all 3’s will record all information given
   - Call out another number such as 1 and all 1’s will name all fauna observed
   - Call out last number 2 and all 2’s will name all flora observed

2. Prioritise then select cassowary and important plants and animals associated with the cassowary to be included in the guidebook

3. Divide selected plants and animals among teams

4. Each member of the group chooses one section to research and develop. Use the following headings as a guide to develop presentations
   - Description - scientific name, appearance, interesting features and diagram
   - Ecology - habitat, life history, feeding behaviour, reproduction
   - Human Intervention - threats and suggested management

5. Publish as agreed by class - handmade, word processes, powerpoint

6. Make several copies for school, local information centre, tourist outlet

7. Students can give guided tours to other students, parents, community groups or tourists
CASSOWARY POSTER

MATRIX:
Create / Verbal Linguistic/ Picture Spatial

STRATEGY:
Students will plan and create a poster for display in the school library or local information centre that will influence community opinions.

MATERIALS:
☐ Cardboard, poster making materials

PROCEDURE:

1. Planning Phase
   ☐ Discuss target audience
   ☐ Decide the aspect to highlight using the 1,2,4 strategy:
     1 - Brainstorm ideas individually,
     2 - share and add to ideas with a partner,
     4 - two pairs join together to share and add to ideas.
   ☐ Starter ideas could include:
     ✓ Drive carefully
     ✓ Control cats and dogs
     ✓ Don't dump pets in the bush
     ✓ Conserve habitats on farms
     ✓ Be careful with chemicals
     ✓ Learn more and teach others
   ☐ Techniques: choose techniques to enhance the poster
     ✓ Humour
     ✓ Slogans
     ✓ Cartoon characters
     ✓ Pictures
     ✓ Diagrams
     ✓ Photos
     ✓ Borders
     ✓ Lettering
     ✓ Eye appeal
   ☐ Headline: a headline is designed to grab the readers attention
   ☐ Pictures/lettering: these should compliment each other and ensure easy viewing
   ☐ Wording: consider:
     ✓ lists / statements / slogans
     ✓ technical / conversational / colloquial language
     ✓ consider use of a logo
     ✓ layout - position of headline, pictures, wording
     ✓ colours - to enhance overall effect
(Continued)

2. **Draft the poster**
   - Is it visually pleasing?
   - Is the wording provoking?
   - Check spelling

3. **Complete the poster and display in school library or information/tourist centres**
   
   Variation - this activity could be a competition judged by the local Mayor or wildlife celebrity.
CASSOWARY ONLINE REPORT

MATRIX: Apply / Technological

STRATEGY: Small groups or pairs

MATERIALS:
- Access to World Wide Web site School World Endangered Species
- Project www.schoolworld.asn.au/species/species.html
- Information from previous activities
- Computers and internet access

PROCEDURE

Students over the world are submitting reports on endangered /threatened species. Check out these at www.schoolworld.asn.au/species/glider.html - this report on the mahogany glider was submitted by students from Victoria Plantation School at Ingham. It can be used as a model for this activity. Also use other reports from this site, in particular, reports on endangered birds.

Guidelines can be downloaded from:
www.schoolworld.asn.au/species/outline.html

Use the following as a guide to process information for display on the School World Endangered Species Project. When sending report include the following information.

The SchoolWorld Endangered Species Project has been designed as a collaborative addition to enhance awareness and understanding of endangered/threatened species, using new technologies to motivate and challenge students.
If your class undertakes this activity, choose one, several or a whole class project to forward. They will be processed and displayed on the Endangered Species web site.

Decide how best to present the students work, whether as a complete unit or an indexed form. The page design will mirror the students’ presentation onto the backgrounds being used on the site. Where possible graphics enhance the projects. SchoolWorld can assist in this area.

Refer to Main Page, Programs, Projects, Join School World, Member Schools, The School World Team pages for more information.

(Photocopy and enlarge these pictures as required.)
CASSOWARY ACTIVITIES

CASSOWARY ADVERTISER

MATRIX: Apply / Picture Spatial

STRATEGY: Advertisement promoting what people can do to help

MATERIALS: ☑ Paper/ pens etc

PROCEDURE:

PLANNING

1. Decide on a survival strategy to promote
2. Who will be the target audience and where will it be published?
3. Techniques - which technique will create an eye catching image:
   ✔ Humour - caricature, cartoon
   ✔ Slogan or pun
   ✔ Printing style
   ✔ Eye appeal - large or small images
   ✔ Bold or subdued colours
4. Headline to grab the readers’ attention
5. Picture related to words
6. Language to suit the audience
   ✔ Conversational
   ✔ Technical
   ✔ Colloquial
   ✔ Language that children or adults use
   a. Points to consider about wording
      ✔ Include cassowary name
      ✔ Description of problem
      ✔ Conservation measures
      ✔ Powerful adjectives
      ✔ Repetition
      ✔ Always use the present tense
   b. Use of a logo, icon or command.

(continued)
PRESENTATION

1. Design the layout. Where will the headline, pictures and wording be?
2. Use the example below as a model.

3. Conduct a class competition to judge the best advertisements and submit them to the Wet Tropics Authority PO Box 2050 Cairns 4870
CASSOWARY MIME

MATRIX: Understand/Body Kinesthetic

STRATEGY: Small groups

MATERIALS:  
- Cassowary mask template
- Natural materials for costumes and habitat
- Scissors, paste etc

PROCEDURE: This activity could be conducted outside

1. Form students into small groups representing cassowaries in a particular area
2. Each group decides on roles and structure
3. Discuss roles considering home, food, growth, habits and dangers
4. Build habitat and costumes using natural materials and templates
5. After organising habitats and costumes practise miming 24 hour cycle in the life of a cassowary

(You will find these pages in the Activity Pack. Photocopy as required.)
MUSICAL MIME

MATRIX:
Understand/Music Auditory

STRATEGY:
☐ Musical background and sounds to compliment students’ mimes.
☐ Small groups (same as for mime); involve the music specialist in selecting music and developing performance.

MATERIAL:
Instrumental music
Musical instruments
Tape recorder

PROCEDURE:
1. In mime groups find and experiment with music and instruments to create original background music
2. Encourage each group to consider the following elements
   ✓ Tempo - fast or slow
   ✓ Dynamics - crescendo, descrescendo, forte, piano
   ✓ Technique - staccato, legato
   ✓ Timbre - percussion, woodwind, string, brass
   ✓ Style - dance, classical, lullaby, waltz, jazz
3. Incorporate music into mime and practise
4. Present to class or school assembly
5. Conduct a PMI on each groups’ performance
   P comment on the PLUS’s of the performance
   M comment on the MINUS’s or what could be improved
   I comment on what was INTERESTING and really worked