

Year 5 - Science

Teacher Guide: Adaptations – native flora and fauna

Adaptations are the special characteristics that enable animals or plants to be successful in a particular environment.

There are three basic types of adaptations: behavioural, physiological and structural.

Behavioural adaptations

Behavioural adaptations may be learned or instinctive actions that organisms do to survive in their natural habitat.

- eels may bury themselves in mud/sand (behavioural adaptation) and enter a state of torpor (i.e. inactivity) (physiological adaptation) to preserve energy during very cold temperatures.

Physiological adaptations

Physiological adaptations are internal systematic responses to the environment.

- see eel example above.
- Milfoil can reproduce asexually (does not require fertilisation by another plant) to cope with separation from other plants.

Structural adaptations

Structural adaptations are the physical features of an organism that help it survive in its natural habitat.

- Milfoil grows upright in water to maximise sunlight reaching its leaves, while on land it will grow prostrate (along the ground) also to maximise sunlight reaching its leaves.

Australian Curriculum

Learning Area Science	Content Descriptions
AC9S5U01	Examine how particular structural features and behaviours of living things enable their survival in specific habitats.
AC9S5I04	Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships.
Cross-Curriculum Priorities	Sustainability
General Capabilities	Literacy, Critical and Creative Thinking

Learning goals

Know:

- There are three types of adaptations; behavioural, physiological and structural.

Understand:

- Adaptations help living things survive in their environments.

Do:

- Read and comprehend literacy material to create adaptation tables.

Achievement standard

- By the end of Year 5, students ... explain how the form and behaviour of living things enables survival ... [They] construct representations to organise data and information and describe patterns, trends and relationships.

Adjustments / strategies to include all students

	Enabling	Extending
Content:	Spend time introducing students to the language of adaptations. Students can suggest synonyms.	Invite students to choose a threatened species and suggest what adaptations might lower the threat.
Process:	Guide students one to one where necessary such as by explaining language used on the PowerPoint or have students conduct their research in mixed ability groups.	Have students email a scientist directly or a zoo that may be able to provide extra information about adaptations. Have students think about how they will frame their question and the email.
Product:	Find or draw a picture of an animal and label the adaptations.	Have student's research animals that have developed crazy adaptations and decide a way of communicating their findings to the class. It may be one specific animal or plant or about a range they have discovered.

Assessment

Refer to *Options for assessment and extension* in each Lesson Plan.

Evidence of student learning

- Students identify at least one adaptation for each of the fauna and flora listed in the reference material.
- Students identify a least one of each type of adaptation (behavioural, physiological and structural) for the fauna and flora listed in the reference material.
- Students describe how an adaptation assists an animal or plant to survive in its environment
- Extension: students describe how human impacts to an environment could exceed an animal or plant's ability to survive in that environment (it cannot adapt to that change).

Group reflection

Refer to *Elaborate and Review* in each Lesson Plan

Teaching and learning resources

Redmap website: Tasmania

<http://www.redmap.org.au/region/tas>

Materials	Number
Smart board or projector	1
Internet connection	1
Activity Explore adaptations of the Tasmanian eel	1 or 1 each
Activity (Literacy) Explore adaptations of native flora and fauna*	1 each

*The literacy activity includes a paragraph about sexual and asexual reproduction of the wetland plant Water Milfoil (*Myriophyllum species*).

Asexual reproduction

Some plants can produce a copy of themselves i.e. plant runners. The offspring have the same genetic material as the parent plant.

- Student reference: clones
- Activity: strike cuttings from a parent plant and grow (i.e. succulents, geraniums, rosemary, fuchsias).

Sexual reproduction (cross-pollination)

Two parent plants produce offspring through pollination, the transfer of pollen from one plant to the stigma of another. Once fertilisation occurs the plant produces seeds. Pollination may occur through wind or insects. The offspring are genetically different from the parent plants.

- Student reference: human reproduction.
- Research activity: How do bees pollinate plants?

Feedback

If you would like more information or to provide feedback please contact our Education Coordinator at education@hydro.com.au