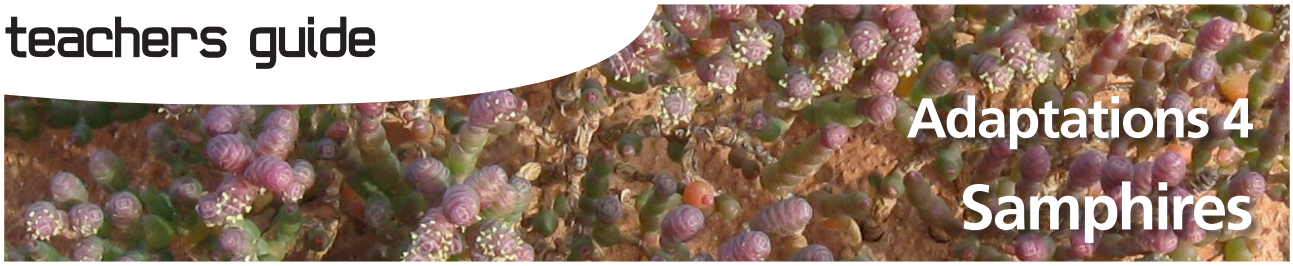
teachers guide



Adaptations 4
Samphires

Components

	NAME	DESCRIPTION	AUDIENCE
	Samphires teachers guide	This guide shows how the concept of adaptations can be explained in the context of samphires.	teachers
	Surviving extremes fact sheet	How do samphires survive in conditions that would kill most plants? This fact sheet describes and explains adaptations samphires have to cope with their environment.	students
	Rehabilitation site worksheet	This worksheet presents a profile diagram of a lake for students to use in a group activity.	students
	Salt, sand and samphires worksheet	This student worksheet contains questions about samphires and their adaptations that relate to the fact sheet and group activity.	students
	Researching samphires fact sheet	This fact sheet profiles the work of two scientists at The University of Western Australia who are researching samphires and their uses.	students

Purpose

To **Explain** how plants can have specific adaptations that enable them to live in particular environments.

Outcomes

Students:

- understand that plants have structural and physiological adaptations that enable them to survive in particular environments;
- analyse data from graphs; and
- work as a group to analyse the relative importance of different adaptations.

Activity summary

ACTIVITY	POSSIBLE STRATEGY
Distribute copies of fact sheet, *Surviving extremes*, and worksheet, *Rehabilitation site*, to each group. If possible, print the worksheet A3 size.	groups of three
The teacher describes the activity to the class (see Teacher notes, below).	whole class
Students read fact sheet, *Surviving extremes*. Each group member reads a different section (the fact sheet contains three sections).	groups of three
Students report information they read, then work together to decide where different samphires live. Compile group results on worksheet, *Rehabilitation site*.	groups of three
Students answer questions on worksheet, *Salt, sand and samphires*.	individually
Discuss answers to both worksheets.	whole class

Teachers notes

The following scenario is one way to use the fact sheet.

An environmental group has decided to revegetate an arid area of the Goldfields in Western Australia left barren after mining and over-farming. The area includes a salt lake and a clay pan. Students work in groups of three to plan rehabilitation. Each person in a group receives information on one environmental condition: salinity, drought or flooding.

Groups are given information about the rehabilitation site and three samphire species available for planting. Students need to consider adaptations shown by each species of samphire, then work together to decide the best place to plant them.

Students are expected to have prior knowledge of plant photosynthesis and transpiration.

Technical requirements

The teachers guide, fact sheet and worksheets require Adobe Reader (version 5 or later), which is a free download from www.adobe.com. The worksheets are also available in Microsoft Word format

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Banner image: '*Tecticornia mellaria* male flowers' by Bindy Datson, Actis Environmental Services, used by permission.

SPICE resources and copyright

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Associated SPICE resources

Adaptations 4: Samphires may be used in conjunction with related SPICE resources to study structural, physiological and behavioural adaptations.

DESCRIPTION	LEARNING PURPOSE
Adaptations (overview) This learning pathway shows how a number of SPICE resources can be combined to teach the concept of adaptations in plants and animals.	
Adaptations 1: Defining adaptations An interactive quiz encourages students to differentiate between different types of adaptation: structural, behavioural or physiological.	**Engage**
Adaptations 2: Emperor penguins Students conduct experiments to model structural, physiological and behavioural adaptations of emperor penguins.	**Explore**
Adaptations 3: Barrow Island marsupials Students use a learning object to investigate adaptations of four marsupials that live on Barrow Island.	**Explain**
Adaptations 4: Samphires A profile diagram of a lake provides students with an opportunity to determine which species of samphire would be mostly likely to survive in particular locations.	**Explain**
Adaptations 5: Diving adaptations Students use a learning object to compare and contrast physiological, structural and behavioural adaptations of air-breathing diving animals.	**Explain**
Adaptations 6: Freediving Students watch a video of a human freediver and consider differences between acclimatisation and adaptation. Students review risks of diving associated with pressure.	**Elaborate**