**ACTIVITY: Using ferns to survive**

**Activity idea**

In this activity, students plan a storyboard along the lines of television shows such as *Man vs. Wild* and *Survivor* to illustrate how humans can use ferns to survive in the bush.

By the end of this activity, students should be able to:

* identify some ferns that are useful for construction purposes
* identify some ferns that are useful as food sources
* identify some ferns that are useful as track markers
* better understand and appreciate how interlinked our ancestors were with their environment.

[Introduction/background notes](#intro)

[What you need](#need)

[What to do](#do)

[Extension ideas](#extension)

[Student handout: Ferns for survival](#ferns)

[Storyboard](#storyboard)

**Introduction/background**

There are a number of TV programmes that show viewers how to survive if left stranded in a hostile environment. Rewind a century or two, and New Zealand really was a somewhat hostile environment for Māori and early Europeans. Ferns formed an important part of daily survival strategies for our ancestors.

In this activity, students investigate some of the many uses ferns provide for those who are lost and trying to survive in the bush. These uses are transferred onto a storyboard as students create their own survival scenario for a television series.

A storyboard is a graphic organiser that displays a sequence of images and text. It is used to plan a video or animation. A storyboard looks like a blank comic strip. A sketch or thumbnail image sets the scene with brief notes recorded under the sketch providing dialogue and/or directions.

**What you need**

* Student handout: [Ferns for survival](#ferns)
* [Storyboard template](#storyboard)
* Internet access for locating images
* Guidebooks to New Zealand ferns such as Andrew Crowe’s *Which Native Fern?* (optional)

**What to do**

1. Introduce the activity by asking students to think about the kind of survival programmes they’ve seen on TV. Then ask them to imagine what a survival series in the New Zealand bush might look like.
2. Explain that they’ve been employed to create a storyboard outlining a 5-minute episode. The premise is that someone on a day hike gets lost in the bush. The person has only a daypack with minimal supplies.
3. Using information from the student handout [Ferns for survival](#ferns), the internet and New Zealand fern guidebooks, the storyboard must explain how ferns can help someone survive for 24–48 hours in the bush. Think about the need for food, shelter and means of rescue.
4. Working individually or in small groups, ask students to brainstorm ideas first, jotting ideas onto paper. Once they have a working sequence of events, they put their ideas into the storyboard format. Students illustrate each scene by either sketching the fern being used or by locating images on the internet. Write dialogue/voiceover to accompany the scene. Encourage students to be creative. If they need motivation, play a video clip of presenters such as Steve Irwin or Bear Grylls and encourage students to emulate their styles.
5. Remind students that this activity is solely to teach them about emergency/traditional uses of ferns. Much of our native bush is under enough pressure from introduced species; we don’t need school students causing additional harm and nor should students consume any of the ferns.

**Extension ideas**

If students are interested and equipment is available, turn the storyboard into a short video. Refer to the activity [Alternative fern collections](https://www.sciencelearn.org.nz/resources/1410-alternative-fern-collections) for directions on how to transfer video from a computer to individual mobile devices like cell phones or iPods.

The [Ferns for survival](#ferns) handout has just a few ways in which we use ferns. Students may like to research how ferns were once used for medicinal purposes.

Ferns are still in common use today. Discuss the ways we continue to use them in the 21st century. (Garden and ornamental purposes, fences, food garnishes, etc. The koru is a popular symbol in art.)

**Ferns for survival**

Ferns played an important part in the lives of Māori and early European settlers. Here are a few ways in which people used and continue to use ferns.

**Note:** With much of our native bush already under threat from introduced animals, please do not gather ferns from the wild and nor should you actually eat any of the recommended fern species. One website on New Zealand wild foods says that, of the 312 varieties of pikopiko fern, only 7 are edible. If you don’t know what you are picking, don’t eat it!

***Ferns to use for shelter/storage***

* Whekī-ponga (*Dicksonia fibrosa*) – split the trunks to make rodent-proof food storage boxes. The tough fibres make it difficult for rodents to chew through.
* Silver fern/ponga (*Cyathea dealbata*) – fronds make soft matting for sitting or sleeping on the ground (place silver side down if the fronds have spores). Use the trunks to build hut walls.
* Hen and chickens fern (*Asplenium bulbiferum*) – fronds make soft matting/blankets.
* Fronds of most tree ferns can be used as walls/roofs for bivouacs. Place with the tips of the fronds down so rain water channels down the fronds

***Ferns to use as food sources***

* Hound’s tongue fern (*Phymatosorus pustulatum*) – young fronds baked/steamed as greens.
* Palm leaf fern/cape fern (*Blechnum novae-zelandiae*) – fiddleheads can be eaten, fronds can be wrapped around vegetables to be baked/steamed.
* Gully fern (*Pneumatopteris penningera) –* fiddleheads can be eaten, fronds can be wrapped around vegetables to be baked/steamed and add flavouring.
* Rereti (*Blechnum chambersii*) – young fronds can be steamed and eaten.
* Male fern (*Dropteris filix-mas*) – fiddleheads can be boiled.
* Hen and chickens fern (*Asplenium bulbiferum*) – fiddleheads can be boiled.
* Prickly shield fern (*Polystichum vestitum*) – fiddleheads can be boiled.
* Common shield fern (*Polystichum richardii*) – fiddleheads can be boiled.
* King fern (*Marattia salicina*) – rhizome can be cooked and eaten like potatoes.

***Ferns to use for marking tracks***

* Crown fern (*Blechnum discolor*) – fronds have pale undersides that are visible even at night. Bend them over as track markers. Alternatively, cut the frond and point the tip to indicate direction.
* Silver fern (*Cyathea dealbata*) – fronds have pale undersides that are visible even at night. Bend them over as track markers. Alternatively, cut the frond and point the tip to indicate direction.

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