

Getting started

HOW MUCH DO WE ALREADY KNOW?

ASSESSMENT ACTIVITY

Use the focussing questions below to help assess prior knowledge and understanding of weeds.

This could be completed before starting, and then added to at the end of the unit.

This could be answered individually, or as a Noisy Round Robin set out around the class room.

Focussing questions

- What is a weed?
- What weeds can you name?
- Why are weeds a problem?
- What can weeds do to other plants?
- How might weeds affect animals?
- What can be done to control weeds?
- What is a native plant?
- What is an introduced or exotic plant?

Reflect on the knowledge already in the group and then find out what students want to learn more about.

Record as you go to create a class learning journey.

Investigating the issue

WHY WORRY ABOUT WEEDS?

KEY CONCEPTS:

- Some plants have escaped cultivation and become a threat to our natural environment.
- Plants become weeds because of their ability to out-compete other plants.
- Weeds are adapted to spread in a variety of ways
- Humans play a major role in spreading weed species

RESOURCES AND LINKS:

‘Woody’s Weedy Wanderings’ e-book at http://weedbusters.co.nz/kids/weedy_reads_woodys_weedy_wanderings.pdf explains how plants moved around the world in the past and how some of them became weedy in other countries.

The weed search at www.weedbusters.org.nz has over 100 weedy species causing problems in New Zealand with photos and information on each.

Landcare Research’s website has some great weed education pages at <http://www.landcareresearch.co.nz/education/weeds> looking at weed spread around the world.

If you would like photos of weed infestations or weed seeds to start discussions amongst your students, please contact info@weedbusters.org.nz and these can be emailed to you.

Check out the great YouTube weed videos at <http://www.youtube.com/watch?v=vwP1XTEvqtY&feature=related> and http://www.youtube.com/watch?v=iwDzwmwY_8wo&feature=related%5C for some examples of North American weed issues.

ACTIVITIES AND DISCUSSIONS:

- Read “Woody’s Weedy Wanderings”. Discuss this book as a class. What happened? How did the weeds spread? When were they spreading? Why were they moved about? What did you learn from the book?
- Look at some photos of weed seeds and discuss how these seeds might spread. Are they attractive to birds? Do they attach to clothing and animal fur? Can they float?
- Use the YouTube links and the background article on New Zealand natives provided to explore the concept that weeds are a global issue. Discuss how a plant that is a natural treasure in one country can be a pest in another.

- Discuss the phrase ‘invasive plant species’ and how it is another name for weed.
- Explore the ideas about why weeds may grow in particular places. Why can some plants live in wet places when others are good at living in dry places? What do people do that encourages weeds? Why do some plants grow better (and become weedier) than others?
- Choose 20 weeds in New Zealand from the weed search at www.weedbusters.org.nz and mark on a world map where they originally came from. Discuss the concept of native vs introduced plants. Investigate how weeds spread – from country to country, and then within a country. What methods have weeds developed to allow them to spread?

REFLECTION

- Can you explain to a friend what a weed is?
- Can you explain to a classmate the difference between a native plant and an introduced one?
- Can you explain how weeds spread throughout New Zealand?

Exploring the Issue

WHAT HAVE WE GOT TO LOSE?

KEY CONCEPTS

- Weeds decrease our natural biodiversity.
- Weedy plants can become a problem if not controlled.
- Weeds can affect our environment, our economics and our health.

RESOURCES & LINKS

The weeds education pages at www.landcareresearch.co.nz have information related to the environment and economics and www.weedbusters.org.nz has lots of information on impacts of weed species.

www.landcareresearch.co.nz/education/weeds/weedinfoa-2.asp has a great diagram for demonstrating ecosystem interactions.

Weed wipeout instructions can be found at http://weedbusters.co.nz/weedbusters_in_schools/weed_wipe-out_instruction_card.asp

The 'problems with weeds' chart is at http://weedbusters.co.nz/weedbusters_in_schools/problem_with_weeds_chart.asp

DISCUSSION & ACTIVITIES

- Using pictures of New Zealand landscapes, recreation and ecosystems as a prompt, invite students to record what is valuable in terms of their natural environment in New Zealand.

What is special to them locally?

Where do they like to go on holiday and what is it they like about the area?

How/where do people grow food in New Zealand?

What is the image that we like to have of New Zealand?

Do we value our native ecosystems?

How would the experience be different:

if only one plant lived there?

if the native birds disappeared because of lack of good food?

if the tracks were overgrown with spiky woody weed?

if we couldn't swim in our streams and lakes because of an invasive weed?

- Play the experiential game Weed Wipeout to help demonstrate the impact weeds have on native plants and explore the concepts of interdependence and biodiversity in the natural environment.
- Play Weed Charades. Follow with a discussion on how weeds can harm the environment e.g. smother, creep, climb.
- Set up stations around the classroom with pest plant fact sheets, Plant Me Instead booklets, and computers with internet access. Split students into three groups to rotate through the stations to complete a 'Problems with Weeds' chart. Collate students' findings using the sticky notes brainstorming technique to complete a class problem chart. Add to your Pool of Knowledge.
- Investigate the traditional uses of native plants by Maori, for example, rongoa (herbal remedies), weaving and food. What impacts could weeds have on the availability of these native plants?

REFLECTION

- How can weeds be a problem in New Zealand?
- Who are they a problem for?

Learning experience outside the classroom

WHAT'S WEEDY IN OUR LOCAL AREA?

KEY CONCEPTS:

- Weeds take advantage of local conditions.
- Weeds sometimes grow better in one part of NZ/one habitat than the other
- We can assess the impact of weeds by observing and measuring and monitoring change

RESOURCES & LINKS

Before starting this unit, contact Weedbusters at info@weedbusters.org.nz so we can match you up with a local weed expert.

- Check out pest plant fact sheets and the website of your regional council. Get a copy of your Regional Pest Management Strategy (RPMS) from your regional council.
- Check out New Zealand Plant Conservation Network's website at www.nzpcn.org.nz
- Use the Weedbusters website at www.weedbusters.org.nz and local Plant Me Instead booklets that are free from this site.
- Check out the pages at <http://www.landcareresearch.co.nz/education/weeds/>
- GO WEED and Match-up Cards can be made up with local weeds. Use your regional council website as a resource, weedbusters or Landcare Research. Photos of weeds can be easily downloaded from the weedbusters website to place into wallet sized print format (9 per page). Set up a table template of same dimensions for your Match-up descriptions.

DISCUSSION & ACTIVITIES

- Discuss the phrase 'plant pest' and how it is another name for weed.
- GO WEED game (based on Memory). Place the GO WEED cards face-down in the middle of your group. Turn two cards up and show everyone. Put the cards back down in the same place if they do not match! The next person takes two cards and tries to make a pair of the same weed e.g. wild ginger. The person with the most pairs at the end of the game wins!
- WEED MATCH UP Match up the weed pictures with their correct descriptions. Read the descriptions carefully! Extend yourself and play like GO WEED, making pairs with the picture and description cards.
- WHAT WEED AM I? Write the names of common invasive weeds on individual sticky labels. Stick one name onto each student's back. The aim of the game is to find out which weed you are by asking only Yes/No questions e.g. Am I a spiky weed? Do I smother plants? Students will need to be familiar with the descriptions of the weeds! Challenge them to guess their name in less than 10 questions.
- MIND MAP Create a mind map of common invasive weeds in your neighbourhood. Combine your art and word-smart skills together to map out where these weeds are found and what their main characteristics are.

- ART ATTACK Create a pencil sketch of one of the locally common invasive weeds with its identifying characteristics. Develop your sketch to create a crayon and dye or pastel artwork. Display your art works! You may be able to use them as part of an action project later in the unit.
- WEED WALK Organise a trip out in your local environment to observe, monitor and record weedy areas. Before you decide where to go and what to do, contact your local Weedbusters coordinator or local expert and discuss what might best support student learning and action.

You might like to:

- Explore your school grounds, local park, reserve, farmland, gully, bush or community area for weeds and weedy areas.
- Map your school or local area showing the names of the weeds, where weeds were found and their numbers. You could collect this data out in the field then graph or map the information back in class.
- Use the Weedbusters booklet "Plant Me Instead" and New Zealand Plant Conservation Network website (www.nzpcn.org.nz) to help identify weeds and assess the impact they have on the environment.
- Record your exploration and weed finds with a digital camera or video camera. The images could be used back in class for identifying purposes or as part of an action project to monitor learning, action and changes.
- Investigate how weeds may have got to the areas where you found them. Are there any obvious signs, for example seeds, boats, vehicles?
- Check out the differences between weeds and native plants. Use native plant field identification guides for your area or a local expert to help.
- Explore the surrounding habitats of weeds and natives for animals or insects. Compare the amount and variety of things found. Why might there be differences?
- Contact a local person who may be affected by weeds (farmer, gardener or horticulturist) and invite them to join you on your Weedy Walk. They could provide some great expertise or a different view point!

REFLECTION

Back in the classroom reflect on what you saw:

- What weeds were a problem?
- How did they get there?
- What were they threatening?
- What was being done to manage the weeds? Who was involved?

Taking action

WEEDBUSTERS 2-min FILM CHALLENGE

KEY CONCEPTS

- It's important that people understand why weeds are a problem and what they can do about them
- People can make a difference by changing what they plant in their gardens and how they dispose of garden waste.
- Communities can work together to get rid of weeds in natural areas and restore native biodiversity.

RESOURCES & LINKS

Check out the information about digital storytelling at http://weedbusters.co.nz/weedbusters_in_schools/2minute_film_challenge.asp

Check out newspaper articles on weeds at www.weedbusters.org.nz

Find out about different views on weeds at http://weedbusters.co.nz/weedbusters_in_schools/weedy_feelings.asp

Read 'When the Jones Kids Came to Town' at www.weedbusters.org.nz about community action to tackle weeds in local areas

Check out Weedbusters award nominees at www.weedbusters.org.nz

DISCUSSION & ACTIVITIES

- Read "When the Jones Kids Came to Town: A Weedbusters Adventure". Discuss this book as a class. What happened? Who was involved? What was the problem and how did they solve it? What did you learn from the book?
- Many people hold different views about weeds and this can affect their willingness to do anything about them. Role-play 'Weedy Feelings' to investigate the different views people have about weeds. Assign a card to small groups of 2-3 children. Give them time to practice their role then present each 'Weedy Feeling' back to the class. Divide the class into two groups, for or against blackberry depending on the card they hold. Ask 'Are weeds a problem to everyone?' Let this discussion lead on to the next activity
- The Weedy Views chart lists different groups that have an interest and viewpoint about each plant. Select one or two groups from each column to investigate.
What are their views about that particular plant?

Do they have a use for that plant?
Do they think that plant is a problem?
Explain your answers!

- Invite a local farmer, gardener, horticulturist or member of a local weedbusting group into your class to share their experiences with weeds. Students could create an interview sheet so they can find out the views the guest speaker has about weed
- Newspaper Critique: Identify some of the views different groups have about weeds by conducting a newspaper search. From the articles, put together a storyboard of people's views or map out the weeds and views on a map of your region or area. If you would like a copy of past weed articles, please call us!
- Consider what you learnt during your trip out in your local environment. How can you use this to create your 2-minute film? Who will be your target audience and what will be the main message(s) be?
- Create your mini-masterpiece for the Weedbusters 2-minute Film Challenge! Check out 'Digital Storytelling' for tips and tricks to help you do this.

REFLECTION

Discuss within class what you have achieved.

- What went well?
- What could be improved or done differently?
- What were the benefits?

Teachers' notes

INSTANT WEED EXPERT!

Glossary

WEED WORDS

What is a weed?

A simple definition of a weed is a plant growing in a place where it is not wanted and where it has a harmful impact. Weeds can come in any shape and size and can be any type of plant (eg, tree, shrub, vine or water plant).

Environmental weeds, the ones we are interested in for this film challenge, were in most cases introduced into New Zealand as ornamental garden species many years ago. Over time they have naturalised to New Zealand conditions and 'jumped the garden fence' to invade natural areas such as wetlands, streams and native bush, where they damage the ecosystems.

What makes a plant weedy?

In healthy ecosystems, native plants, animals, micro-organisms and the physical world are in balance with each other so that no one species can become dominant.

When some plants are moved from their native country to another, they can become more successful growing in particular habitats than the native or cultivated (non-weedy) plants in that new country. This may be because of their ability to grow faster, their hardiness, their ability to smother or crowd out plants around them, or their efficient reproduction methods (seeds, rhizomes, bulbs, tubers).

It is important to remember that not all non-native (exotic) plant species in New Zealand are weedy.

How do weeds spread?

Historically, plants have been spread from country to country for a variety of reasons (eg garden specimens, 'hitchhikers' on machinery and clothing, for agricultural cultivation).

Most weedy species in New Zealand were introduced as ornamental garden plants, but they have acclimatised to conditions here, and have 'jumped the garden fence' to invade natural areas where they outcompete native species.

Some of our future weeds in New Zealand are already here in our gardens but have not yet started moving into natural areas. It is thought that about two species a week naturalise in New Zealand.

Once here, weeds spread by wind, water, birds, dumping of garden waste, and deliberate propagation and planting.

How do weeds damage our environment?

Introduced plants and animals are the biggest threat to New Zealand's biodiversity. Weeds outcompete native plant species, and this has a flow-on effect within the ecosystem, threatening other insects, plants and animals in a ripple effect.

Environmental weeds have the ability to reproduce and spread easily and have the potential to invade weed-free areas, outcompeting native plants.

They can multiply quickly, replacing native plants and changing the habitat so it is no longer suitable for native animals or plants to grow. Weeds can form dense mats which smother native seedlings and stop native plants from germinating. Vines can grow up and strangle or smother native trees. Aquatic weeds can clog up waterways, crowd out native species, and reduce food for our native fish.

What can WE do about weeds?

Each generation of New Zealanders has the responsibility to act as kaitiaki (guardians) of our biodiversity and natural resources to ensure our environment is protected and our country remains unique into the future.

Weeds can be thought of as a 'people problem' because human behaviour contributes so much to the spread of weeds. Many central, regional and local organisations and agencies are involved in official efforts to control some weed species. Every New Zealander can play their part by knowing what is weedy in their area, only growing non-weedy species, disposing of weed waste wisely, and supporting local weedbusting efforts to remove weeds from private and public areas in their communities.

There is a great glossary of terms associated with weeds, ecosystems and natives at <http://www.landcareresearch.co.nz/education/weeds/glossary.asp>