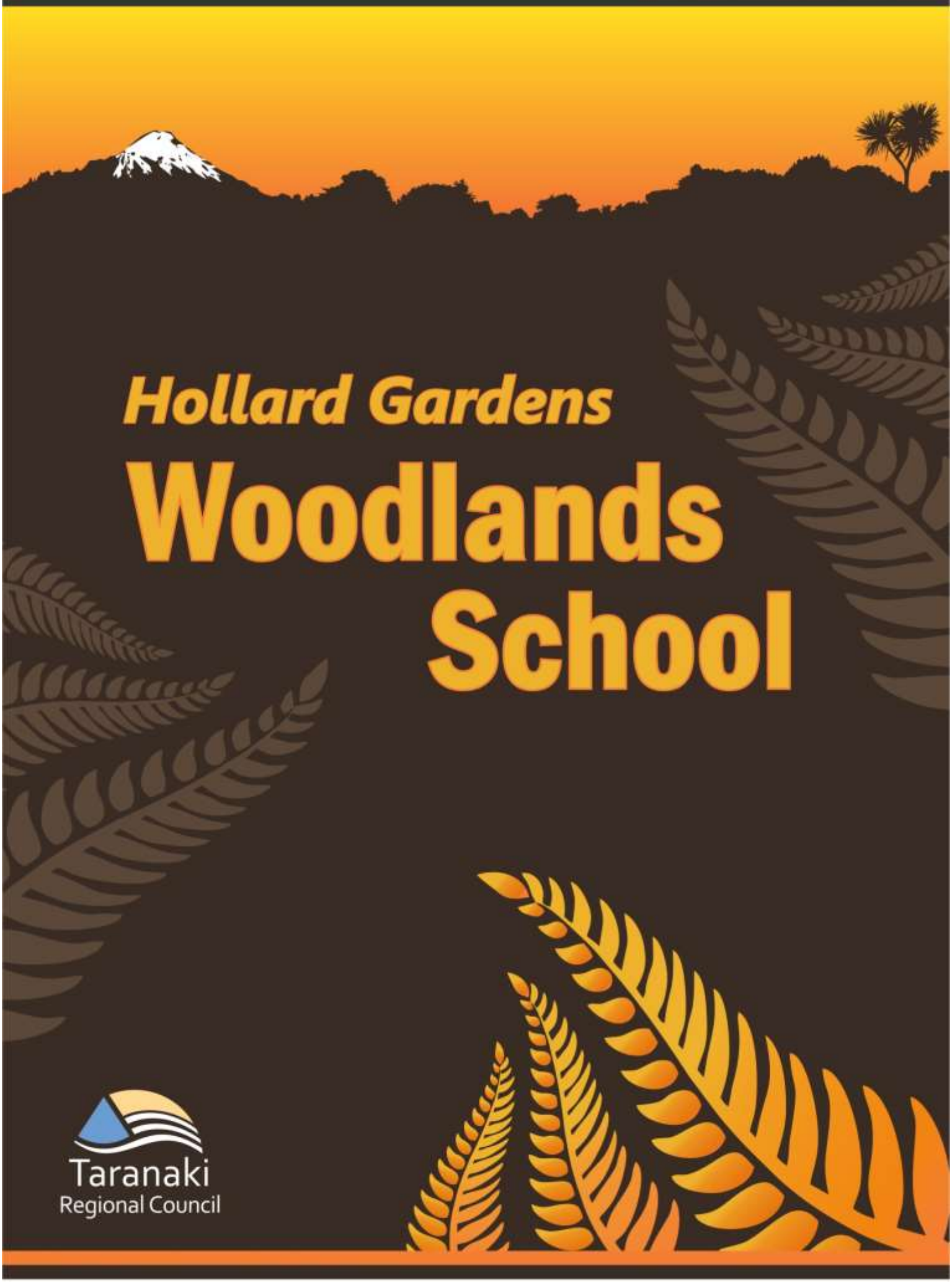
STUDY UNIT



Hollard Gardens
Woodlands School

Taranaki
Regional Council

Hollard Gardens Woodlands School

This study unit outlines the activities available for teachers to choose from when visiting with their classes to **Hollard Gardens Woodlands School**, near Kaponga.

Hollard Gardens provides a stimulating, natural learning environment located at 1686 Upper Manaia Road, Kaponga.

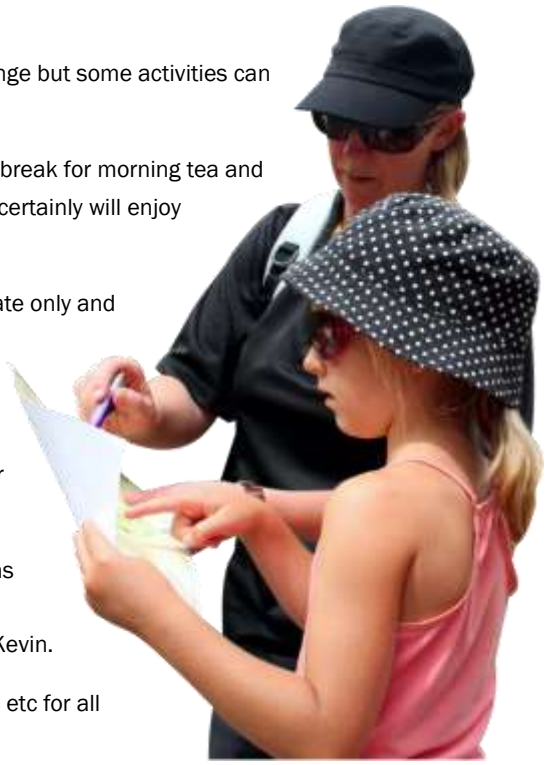
Considerable overseas research has proved that children who spend time learning in natural environments perform better in reading, mathematics, science and social studies. The research also revealed that students who have been involved in activities that explore the natural world often take a more positive view towards other school subjects. Previously apathetic students can become excited and motivated about their learning.

Teachers should choose activities appropriate to their students' class levels although there is some flexibility available with all activities. The unit can be downloaded from the Taranaki Regional Council website www.trc.govt.nz which is also a source for research to assist with some of the activities.

Doc #1625048

General information for school visits to the Hollard Gardens Woodlands School

- **Timing :** School visits are welcome at any time of the school year between 10.00am and 2.00pm.
- **Cost:** Entry to Hollard Gardens is free to all visitors.
- **Adult : student ratio**: The Council's policy is 1 to 5 adult: student ratio for Council-led field trips, including those to our regional gardens. Some flexibility can be used with high school groups.
- **Group numbers:** The activities in this unit are designed for groups of no more than 35 students plus adults and teachers.
- **Risk Analysis Management (RAM) sheets**: These must be emailed or faxed to the Council's Education Officer before the day of the visit. Email kevin.archer@trc.govt.nz or fax 06 765 5097
- **Names**: A list of all the names of students/teachers and accompanying adults must be given to Kevin Archer or the resource person hosting the group, at the start of the visit.
- **Vehicle access:** Parking for cars and buses is available in the car park and there is a two minute walk to the Visitor Centre, where each group will be met by the host for the day. There is no vehicle access available for school groups to the gardens themselves.
- **Programme rotation**: Depending on the activities chosen, it is possible for groups to cover up to four activities in one visit, as some activities can be easily combined with others. The times suggested in the activities are approximate only and can be adjusted to meet the needs of the students.
- **Walk**: it is recommended that visiting school groups include the Hollard Gardens Guided Walk as one of the activities during the visit.
- **Activity levels**: Each activity has a suggested class level range but some activities can be adjusted to meet other levels.
- **Morning tea and lunch**: Teachers need to factor in a short break for morning tea and allocate a 45 minute lunch break, as the students almost certainly will enjoy spending some time at the adventure playground.
- **Times**: The times suggested in the activities are approximate only and can be adjusted to meet the needs of the students.
- **Bookings**: It is suggested that bookings be made months in advance to avoid disappointment. For initial enquiries please contact: Kevin Archer Ph 06 765 7127 or email:kevin.archer@trc.govt.nz
- **Cancellations**: Some of the activities at the Hollard Gardens Woodlands School are weather dependent. Cancellation arrangements can be arranged between the schools and Kevin.
- **Clothing:** Students should bring raincoats, old shoes, hats, etc for all visits. Sunblock is recommended in the warmer months.



Activities


1. The Hollard Gardens guided walk


2. The development of Hollard Gardens


3. Bernies' Home Garden


4. The Food Forest


5. Composting tips for all


6. Beneficial insects and animals


7. Birds at Hollard Gardens


8. Animal pest management


9. Seed collecting


10. The Hollard Gardens rally


10a. Scavenger Hunt

Activity 1: The Hollard Gardens guided walk

Duration: 45-60 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer

Suitable: This activity is suitable for all year levels.

Numbers: Suitable for up to 35 students.

Lesson description

This walk is not difficult for students of an average fitness level. There are several stops along the way where the students learn about many aspects of Hollard Gardens and its history. The walk takes in parts of several of the named bush walks. Students will learn the names of many New Zealand native trees and many of the garden's exotic plant species. They will hear lots of information about the garden, why and where many of the trees were planted, how some have thrived and others haven't, epiphytes, landscaping and much, much more.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Health and physical education

Healthy communities and environments.

Science: Planet Earth and beyond

Earth cycles.

Social Science

Place and environment.

Continuity and change.

Planet Earth and beyond.

English

Listening, reading and viewing.

Students will learn about:

- The structure and layers of the gardens.
- Exotic and native plant adaptations.
- The names of, and interesting facts about, many of our native and exotic trees.
- A brief history of Hollard Gardens.
- Why some of the tracks have special names.
- How the gardeners at Hollard Gardens still use many of the botanical techniques used by Bernie Hollard.
- How some trees have been planted specifically to look after other plant species.
- How and why the playground was built, and how it reflects some of the thinking of Bernie and Rose Hollard.

Key competencies

Thinking
Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Information gathering
Self-management
Physical
Work and study

Values

Excellence
Innovation, enquiry and curiosity
Diversity
Community and participation
Equity
Care for the environment
Respect
Integrity

Keywords

Ecosystem, forest, adaptations, exotics, natives, biodiversity, epiphytes, dell, macrocarpa, gum trees, NZ silver fern, king fern, NZ passion flower, kahikatea, rimu, gazebo

Points of interest

Canopy layers and edge effect.
The blending of native and exotic trees.
Adaptations, plant growth changes.
The nature of the tracks.

Activity 2: The development of Hollard Gardens - one couple's beautiful world

Duration: 20 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Suitable for: This lesson is suitable for higher primary, intermediate and high school classes.

Numbers: Suitable for up to 35 students.

KEYWORDS
Visionary, innovator, growing techniques, herbaceous, rainforest, monument to patience, pavilion.

Lesson description

This lesson is based in the Visitor Centre and covers the development of Hollard Gardens from its beginnings as a fenced-off area of bush full of undesirable trees and weeds, through to its position today as a Taranaki treasure.

Learning areas

Science: Living world

Life processes.

Ecology.

Social Science

Identity, culture and organization.

Place and environment.

Continuity and change.

Health and physical education

People and the environment.

Community resources.

Science: Planet Earth and beyond

Interacting cycles

Students will learn about:

- How the gardens represent a lifetime's work by Bernie and Rose Hollard.
- Bernie's ability to work from daylight to dusk, often resulting in him having to be 'found' in the bush in order for him to stop work and come in to eat the evening meal.
- His capacity to learn from others, his experiments with plantings from different continents, and his attention to detail.
- How Bernie often imported many plant species from overseas and swapped many of them at Duncan and Davies and with other gardening outlets.
- The opening of the gardens to the public in the early 1970s and Bernie's long association with the Kaponga Lions Club, of which he was made an honorary Lion.
- How Labour Weekend in October was an especially busy time at Hollard Gardens, with many buses and cars parked in every available space.
- The opening of the Visitor Centre in September 2013 and how it is used today by the general public.

Key competencies

Thinking
Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Information gathering
Work and study

Values

Excellence
Care for the environment
Respect

Points of interest

The Visitor Centre.

Activity 3: Bernie's Home Garden

Duration: 20 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Suitable for: Suitable for all age levels.

Lesson description

This activity outlines how Bernie Hollard developed his garden using his knowledge, his skills and his ability to involve others and their thoughts and ideas. In many ways, the garden today reflects his ideas and techniques.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Social Science

Identity, culture and organization.

Place and environment.

Continuity and change.

Mathematics and statistics

Geometry and measurement.

Students will learn:

- How Bernie Hollard experimented with different gardening methods to achieve the best possible results.
- How sustainability was an over-riding principle in all of his gardening practices.
- That our food production is in the main, a planned process.
- That Bernie Hollard often questioned visitors about their gardening techniques and when appropriate, used many of them in his own garden.

KEYWORDS
Sustainability, companion planting, seasonal, succession.

Key competencies

Thinking
Managing self

Essential skills

Information gathering
Self-management
Work and study

Values

Respect
Community and participation
Innovation, enquiry and curiosity
Care for the environment

Activity 4: The Food Forest

Duration: 20 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Suitable for: This lesson is suitable for all classes at any time.

Numbers: Suitable for up to 35 students.

Lesson description

This lesson outlines how the gardeners at Hollard Gardens have developed a food forest incorporating many of the principles which Bernie Hollard used, when he first established the gardens.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Social Science

Place and environment.

Continuity and change.

The economic world.

English

Listening, reading and viewing.

Students will learn:

- That in the main, the food forest is sustained by natural processes.
- That self-sustainability is a key feature in the success of the food forest.
- How the various layers of vegetation from ground level up, contribute to the success of the food forest.
- How the gardeners carefully organize plantings, so certain plants benefit others.

KEYWORDS
Sustainability, companion planting, seasonal, succession, guilds.

Key competencies

Thinking
Managing self

Essential skills

Self-management
Innovation, enquiry and curiosity
Information gathering
Work and study

Values

Respect
Community and participation

Points of interest

Food forest, beehives, worm farms, compost piles.

Activity 5: Composting tips for all

Duration: 20 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Numbers: Suitable for up to 35 students.

Lesson description

This lesson covers how composting is an integral part of the sustainability programme at Hollard Gardens. It outlines the benefits of composting, what role micro-organisms play in compost production, and the key roles of worms and chooks.

Learning areas

Science: Living world

Ecology.

Science: Planet Earth and beyond

Interacting cycles.

Social Science

Place and environment.

Continuity and change.

The economic world.

English

Listening, reading and viewing.

KEYWORDS

Compost, worm farms, chook tractor, bales, guilds, rotation, enrichment, micro-organisms, worms, chooks, sustainability.

Students will learn:

- That there are different composting methods used at Hollard Gardens involving separate piles, regular turning of compost, no turning of compost, worm farms and a chook tractor.
- That compost is being produced and used continuously throughout the year.
- What can and what cannot be composted or placed in worm farms.
- That correct composting removes the need for artificial fertilisers.

Key competencies

Managing self
Participating and contributing

Essential skills

Self-management
Innovation, enquiry and curiosity
Information gathering

Values

Diversity
Community and participation
Innovation, enquiry and curiosity

Points of interest

Insect motel, worm farms, garden shapes, chook tractor.

Activity 6: Beneficial insects and animals

Duration: 20 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Numbers: Suitable for up to 35 students.

Lesson description

This lesson describes in detail how bees (both honey and bumble bee species), insects, worms and chooks have been brought in to Hollard Gardens to carry out specific tasks to benefit plant production. In some cases, other insects have appeared of their own accord and they have also been used to encourage plant production.

Learning areas

Science: Living world

Life processes.

Ecology.

Science: Planet Earth and beyond

Interacting cycles.

Social science

Place and environment.

Continuity and change.

The economic world.

Students will learn:

- How the chooks, when placed inside the chook tractor fertilise the soil, dig it up as they search for food, and by doing so help prepare the soil for planting.
- How bees do more than make honey, they play a vital role in food production.
- How the worms in the worm farm produce a high grade liquid fertiliser sometimes called 'worm tea' which is used to enrich the soil.
- How micro-organisms help in the production of compost.

KEYWORDS

Beneficial, compatibility, fertilization, pollinate, micro-organisms, liquid fertilizer, worm tea.

Key competencies

K

Thinking
Managing self
Participating and contributing

Essential skills

E

Work and study
Innovation, enquiry and curiosity
Information gathering
Self-management

Values

V

Respect
Community and participation
Innovation, enquiry and curiosity
Diversity

Points of interest

Chook tractor, insect motel, beehives, compost piles, worm farms.

Activity 7: Birds at the Hollard Gardens

Duration:40 minutes
Resource person: Kevin Archer
Suitable for: This activity can be easily adapted to suit any year level.
Numbers: Suitable for up to 35 students.

Lesson description

The first part of this lesson will be indoors, gathering information about some of the native birds that can be found at Hollard Gardens. The second part is an outdoor observation activity using our senses, especially our eyes and ears.

KEYWORDS
Formation, flight, feathers, migration, extinction, endemic, habitat.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Science: Planet Earth and beyond

Earth cycles.

Social Science

Place and environment.

Continuity and change.

Health and physical education

Safety management.

Students will learn:

- That every year some birds migrate to and from New Zealand from other parts of the world.
- To recognize by sight, a small selection of New Zealand native birds.
- To recognize some birds by the sounds they make, or the way they fly.
- To see (if possible) some of the different nests used by our native birds.

Key competencies

Thinking
Managing self
Participating and contributing

Essential skills

Communication
Information gathering
Self-management
Physical
Work and study

Values

Respect
Community and participation

Points of Interest

Bush areas and clearings, adventure playground, bush tracks.

Activity 8: Animal Pest Management

Duration: 45 minutes

Resource people: A TRC Environmental Officer and/or Kevin Archer

Suitable for: This activity is more suited to older primary, intermediate and high school classes.

Numbers: Suitable for up to 35 students.

Lesson description

This lesson reviews the Taranaki Regional Council pest animal management strategy, animal pest categories and methods of control or eradication. Various trapping, monitoring and poisoning methods are covered.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Social Science

Place and environment.

Continuity and change.

The economic world.

Health and physical education

Rights, responsibilities and laws.

People and the environment.

Community resources.

Mathematics and statistics

Number strategies and number knowledge.

Students will learn that:

- Animals classed as 'pests' are mammals that were deliberately brought into New Zealand in earlier times, for a variety of reasons.
- Pest animals are identified as animals that have a serious, adverse affect on agriculture, animal health, human health, or on native plants and animals.
- The Council works closely with other organisations to achieve the best possible results.
- The Council's self-help possum control programme has been very successful, is on-going and relies on considerable co-operation from landowners.
- All pest animals are put into three control programmes – eradication, containment or surveillance.
- Different methods of control are used in different places and for different pest animal species.

KEYWORDS

Pest animals, eradication, containment, surveillance, poisons, traps, night shooting, co-operation, control, protection, native species, introduced, toxic, cunning, immunity, responsibility.

Key competencies

K

Thinking
Managing self
Participating and contributing

Essential skills

E

Communication
Information gathering
Self-management

Values

V

Respect
Community and participation

Resources

Traps, poisons, charts, photographs, signs

Activity 9: Seed Collecting

Duration: 60 minutes

Resource person: Sandy Powell, Shannon Boden, Marilyn Phillips, Kevin Archer.

Suitable: This lesson is suitable for all primary classes.

Numbers: Suitable for up to 35 students.

Lesson description

This lesson starts with a short talk explaining what seeds are and their importance in plant production. Seed dispersal by wind, gravity, water, animals, insects and birds will be mentioned. The lesson involves the students collecting some suitable seeds for sowing at home or at school, and they will then be given some tips for successful sowing.

Learning areas

Science: Living world

Life processes.

Ecology.

Science: Planet Earth and beyond

Interacting cycles.

Social Science

Place and environment.

Students will learn that:

- Plants produce seeds as part of their natural cycle to propagate their own species.
- Seeds possess an outer protective covering called the seed coat.
- Seed dispersal is beneficial for the parent plant as it promotes growth away from the parent plant and therefore prevents overcrowding.
- In times of stress (eg drought) some plants will produce excess flowers and seeds in order for the species to survive.

KEYWORDS

Seed coat, dispersal, propagation, parent plant, overcrowding, drought, species.

Key competencies

Thinking
Relating to others
Participating and contributing

Essential skills

Work and study
Innovation, enquiry and curiosity
Information gathering
Self-management

Values

Integrity
Community and participation
Innovation, enquiry and curiosity
Respect

Points of interest

Various seeds.

Activity 10: The Hollard Garden rally

Activity 10a: Scavenger Hunt

Duration: 60–75 minutes

Resource person: Kevin Archer and one assistant.

Suitable for: This lesson is more suitable for upper primary, intermediate and high school students.
10a Scavenger Hunt is suited for pre-schoolers and Years 1-2 level.

Numbers: Suitable for up to 35 students.

Lesson description

This activity is based on the same principles as a car rally. Students will be placed in groups of three or four (with a parent leader). Each group will be given the same set of instructions, some simple and some more complex. Groups use the clues to answer each question (if possible). The groups will start at two minute intervals and each group is assigned 45 minutes to complete the course. To save time there will be two separate starting points with each course covering the same features.

Learning areas

Science: Living world

Life processes.

Ecology.

Evolution.

Science: Planet Earth and beyond

Safety management, positive attitudes, challenges relationships, interpersonal skills. Interacting cycles.

Social Science

Place and environment.

Continuity and change.

Mathematics and statistics

Number strategies and knowledge.

Students will learn how to:

- Interpret clues, by carefully reading and analyzing them, before deciding on their probable meanings.
- Locate, take notes of, photograph or sketch various features at Hollard Gardens.
- Work effectively in small groups under pressure of time.

KEYWORDS
Co-operation, teamwork, equity, understanding, interpretation.

Key competencies

Thinking
Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Innovation, enquiry and curiosity
Information gathering
Problem solving
Physical
Self-management
Work and study

Values

Excellence
Community and participation
Innovation
Respect
Integrity

Points of interest

Buildings, several tracks, prominent native trees, the pond, the adventure playground, the insect motel, car park, entrance way, gazebo, the large clearing, etc.