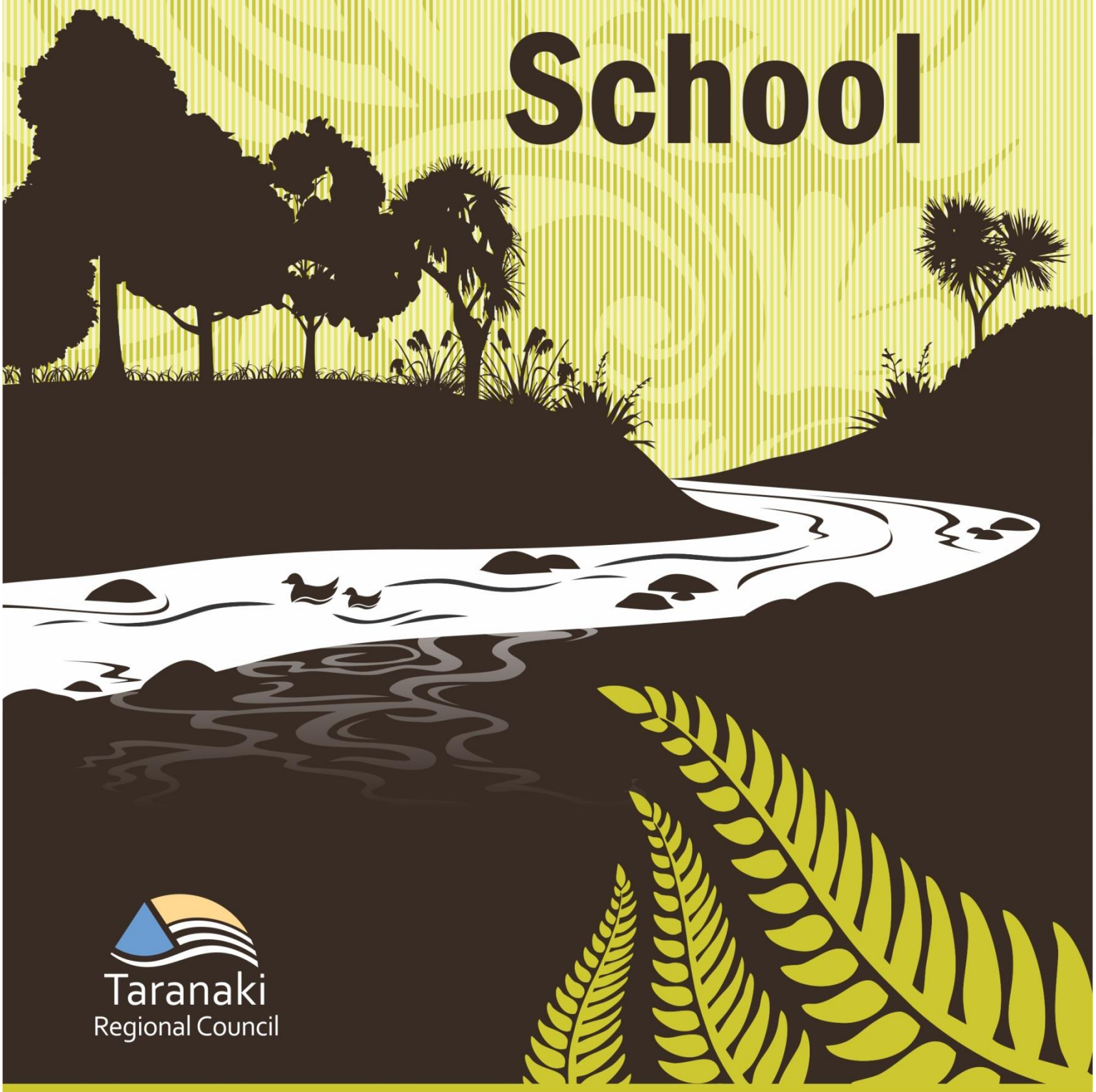
STUDY UNIT

Tupare
Riverside School



Taranaki
Regional Council

The Tupare Riverside School

This study unit outlines the activities available for teachers to choose from when visiting the **Tupare Gardens** in New Plymouth with their classes.

Tupare Gardens is located at 487 Mangorei Road, New Plymouth.

Considerable overseas research has shown that children who spend time learning in natural environments perform better in many subject areas including reading, mathematics, science and social studies. In addition, the research also revealed that students involved in activities that explore the natural world often take a more positive view towards other school subjects. This can result in previously apathetic students becoming excited and motivated about their learning.

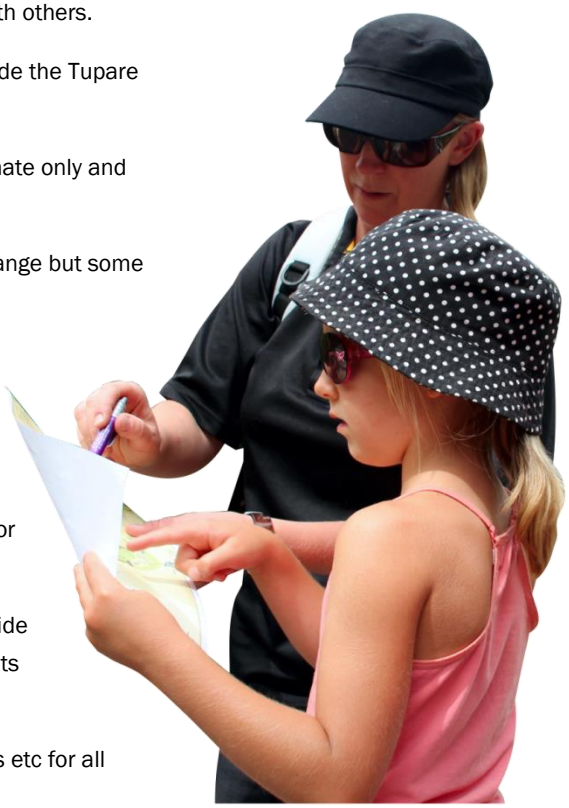
Teachers should choose activities appropriate to their students' class levels although there is some flexibility available with all activities. The unit can be downloaded from the Taranaki Regional Council website www.trc.govt.nz which is also a source for research to assist with some of the activities.

Tupare Riverside School – nurturing the seedlings of our future.

Doc# 1619665

General information for school visits to the Tupare Riverside School

- **Hours:** School visits are welcome at any time between 10.00am and 2.00pm.
- **Cost:** Entry to Tupare is free to all visitors.
- **Adult-Student ratio**: The Council's policy is a 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:** Many of the activities in this unit are designed for groups of up to 15 students plus adults and teachers, others can cater for up to 20 students plus adults and teachers and some can cater for up to 35 students plus teachers and adults. The maximum number of students suitable for each activity is included in the information given for each activity. It is possible that large groups can be split in half and the programme arranged accordingly.
- **Risk Analysis Management (RAM) sheets**: These must be sent by email or fax 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 in the visiting group 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, meaning there is a 5 minute walk to Tupare House, where each group will be met by the host. There is no vehicle access to the gardens for school groups visiting The Tupare Riverside School.
- **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.
- **Walk**: it is recommended that visiting school groups include the Tupare Guided Walk as one of the activities during the visit.
- **Times:** The times suggested in the activities are approximate only and can be adjusted to meet the needs of the students.
- **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 short breaks for morning tea and lunch during the visit.
- **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**: Many of the activities at the Tupare Riverside 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. Tupare riverside guided walk

2. Autumn leaf fall

3. The development of Tupare - an urban history

4. Soil health and soil conditioning

5. The birds of Tupare

6. Waiwhakaiho River study

7. Animal pest management

8. Helpful tips for budding gardeners

9. The riverside garden rally

Activity 1: The Tupare riverside guided walk

Duration: 45-60 minutes

Resource person: Mitch Graham, Richelle Landers or Kevin Archer

Suitable for all year levels.

Numbers: Suitable for classes of up to 35 students.

Lesson description

The 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 Tupare, why it is so named and parts of 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 species. They will hear lots of information about the garden, why and where many of the trees were planted, how some have thrived more than others, epiphytes, landscaping and much, much more.

Learning areas

Science: Living world

Life processes.
Ecology.
Evolution.

Social Science

Place and environment.
Continuity and change.

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.
- The history of Tupare Gardens (in brief).
- The foresight of the first owners of Tupare.

Key competencies

Thinking
Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Information gathering
Problem solving
Self-management
Physical
Work and study

Values

Excellence
Innovation
Community and participation
Respect

Points of interest

Canopy layers and edge effect.
The blending of native and exotic trees.
Adaptations, plant growth changes etc.
Californian Redwood, Dawn Redwood (China), Pine

Keywords:
Ecosystem, forest, adaptations, exotics, natives, biodiversity, epiphytes.

Activity 2: Autumn leaf fall

Duration: 30-40 minutes

Resource person: Mitch Graham, Richelle Landers or Kevin Archer

Suitable for: Classes up to year 8.

Numbers: Suitable for up to 15 students.

Suitable months: The autumn months (March – April - May) would be the best months for this activity.

Keywords:
Leaf shapes, colours, texture, renewable, deciduous, native, exotic.

Lesson description

This activity outlines the importance of this natural process to the Tupare Garden landscape, why some leaves change colour in autumn and why some don't, and how autumn can be a preparation for winter. The lesson will conclude with students choosing an autumn art activity such as an Autumn Leaves Collage, an Autumn Leaves Mobile or a Whole Group Leaf Maze which is an activity especially suitable for younger groups.

Learning areas

Science: Living world

Life processes.
Ecology.
Evolution.

Social Science

Place and environment.
Continuity and change.

Students will learn that:

- Most of our native trees are evergreen.
- Some leaves do not get eaten by insects/possums etc because their leaves have an in-built chemical that makes them bitter to taste.
- Photosynthesis is an important and natural process.
- Most of our exotic trees are deciduous.
- Tupare is a garden for all seasons.

Key competencies

Thinking
Managing self
Participating and contributing

Essential skills

Information gathering
Self-management
Work and study

Values

Community and participation
Respect

Activity 3: The development of Tupare - an urban history

Duration: 30-40 minutes

Resource person: Kevin Archer

Suitable for: Upper primary, intermediate and high school classes.

Numbers: Suitable for up to 20 students.

Lesson description

This lesson is based in the Tupare House. It covers the original design, its development and how much of its furniture was purchased on overseas trips. The house, although a private residence, was well known and its owners Russell and Mary Matthews were considered to be prominent New Plymouth citizens who played host to many visitors from overseas and also to many local groups. This lesson could be an important component for school groups studying the history of New Plymouth and how certain famous people have left a huge legacy for us all to enjoy.

Learning areas

Social Science

Place and environment.
Continuity and change.

Mathematics and statistics

Geometry and measurement.

Students will learn that:

- Russell and Mary Matthews were people who made a huge contribution to the city and citizens of New Plymouth.
- Russell Matthews had a strong vision, a sense of style and a good eye for landscaping.
- Mary Matthews had strong links to the Presbyterian Church in New Plymouth, taught for many years at New Plymouth Girls' High School and had a strong empathy for the 'needy'.
- The Matthews residence was the venue for many social gatherings.
- Sustainability was a key component of the buildings construction.
- The gardens and buildings have had an interesting history with its various owners and uses.
- Tupare is seen today as a wedding venue, a tourist attraction and an amenity garden to be enjoyed by everyone.

Key competencies

Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Information gathering
Work and study

Values

Innovation, enquiry and curiosity
Respect
Equity
Care for the environment

Keywords

Visionary, heritage, bitumen, residence, societies, dendrologists, director, road construction, singsongs, patriotism, architecture, cedar, textured, mantelpiece, safe, cloakroom, Gothic, Edwardian, Barley twist, Victorian, mahogany, oak, quarry, jarrah, QE II, English pub, wrought iron, sideboard, chandelier, samovar, candelabra, decanter, party line, shutters, gatehouse, Beatrice Seddon, draughty, tackle and trophies.

Points of interest

The house, furniture, visitors, the cottage.

Activity 4: Soil health and soil conditioning

Duration: 30 minutes

Resource person: Mitch Graham or Richelle Landers

Numbers: This activity is suitable for special interest groups (up to 15 students) from Y 7-8 and above.

Teachers might consider combining this lesson with Activity 8 (Gardening).

Keywords:
Organic, nurturing, chemicals, compost.

Lesson description

This activity is primarily an information gathering lesson which shows how the gardeners at Tupare nurture the soil in order for it to produce the best results. It focuses on their move away from the use of chemical fertilisers to more organic ones. Results show the soils treated this way produce an increased number of micro-organisms, resulting in faster and stronger plant growth.

Learning areas

Science: Living world

Life processes.
Ecology.

Science: Planet Earth and beyond

Earth cycles.
Interacting cycles.

Social Science

Place and environment.
Continuity and change.

Students will learn about:

- The benefits of organic gardening.
- The pitfalls of relying solely on chemical fertilizers.
- The best times for sowing and planting.

Key competencies

Thinking
Participating and contributing

Essential skills

Information gathering
Work and study

Values

Excellence
Innovation
Community and participation

Points of interest

Rejuvenated soil, prepared plots, compost

Activity 5: The birds of Tupare

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 20 students.

Keywords:
Formation, flight, feathers, migration, extinction, habitat.

Lesson description

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

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:

- How some birds migrate to and from NZ (including Tupare) every year from other parts of the world.
- How 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

Community and participation
Respect

Activity 6: Waiwhakaiho River study

Duration: One hour.

Resource person: Kevin Archer.

Suitable: This activity is suited for Years 4 and above.

Numbers: Suitable for up to 35 students.

Lesson description

The stream study uses the Waiwhakaiho River as a typical Taranaki river which has its source on the mountain. The study involves checking the water temperature and the water clarity of the river, as well as making an assessment of the water quality at this point of the river, by using the presence or absence of certain aquatic invertebrates. Schools can use the information gained from this study to compare data gathered from another site on this river, either closer to its source at Peters Road or near to its mouth at Waiwhakaiho Valley. A comparison can also be made with another stream or river closer to the school. For optimum learning and understanding, it is best if the field work has been preceded by a classroom lesson on a day or days prior to the field trip.

Learning areas

Science: Living world

Life processes.
Ecology.
Evolution.

Science: Planet Earth and beyond

Earth cycles.
Interacting cycles.

Mathematics and statistics:

Number knowledge.
Number strategies.

Social Science

Place and environment.
Continuity and change.

Students will learn:

- That the Waiwhakaiho River is one of Taranaki's most valuable and one that has been greatly affected by human activity over the last 100 or so years.
- How the presence or absence of certain macroinvertebrates can tell us a great deal about the health of any waterway.
- That water temperature and water clarity readings also provide useful information about a stream's health.

Key competencies

Thinking
Managing self
Relating to others
Participating and contributing

Essential skills

Communication
Information gathering
Problem solving
Self-management
Physical
Work and study

Values

Excellence
Innovation
Community and participation
Respect

Keywords:

Macro Invertebrate Community Index (MCI), invertebrates, mayflies, stoneflies, caddisflies, dobsonflies, molluscs, true flies, worms, thermometer, clarity tube, indicators, sensitivity, source, measurement, riparian, diversion, Lake Mangamahoe.

Resources

All resources required for this study are provided by the Taranaki Regional Council.

Points of interest

Waiwhakaiho River
Tupare Gardens picnic area

Activity 7: Animal pest management

Duration: 45 minutes

Resource people: A TRC Environment 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 20 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.

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

Students will learn that:

- Many of animals classed as 'pests' are mammals deliberately brought into New Zealand in earlier times for a variety of reasons.
- Pest animals are identified as animals that can and do have a serious and 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 is one that requires 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, for different pest animal species.

Key competencies

Thinking
Managing self
Participating and contributing

Essential skills

Communication
Information gathering
Self-management
Work and study

Values

Community and participation
Respect

Activity 8: Helpful tips for budding gardeners

Duration: 45 minutes but may be up to one hour, if combined with Activity 4 (Soil Health and Soil Conditioning)

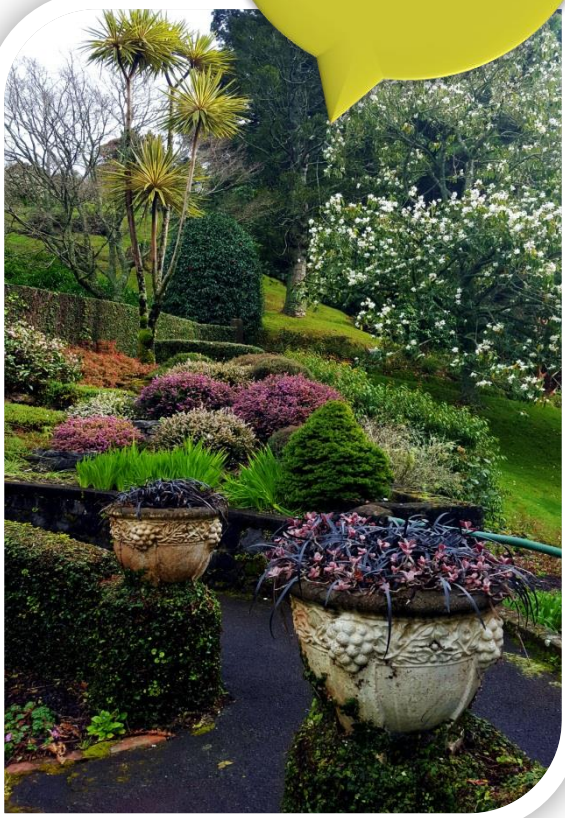
Resource person: Mitch Graham or Richelle Landers

Numbers: Suitable for special interest groups (up to 15 students from Y 7-8 classes and above).

Keywords:
Organic, chemicals, nurturing, compost, toxic.

Lesson description

This lesson covers gardening techniques such as pruning, watering, and plant husbandry. Topics such as herb gardens, and perennials are also explored. Where possible, there will be a hands-on component which should help to increase student's understanding and enjoyment.



Learning areas

Science: Living world

Life processes.

Ecology.

Social Science

Place and environment.

Continuity and change.

Students will learn:

- How a planned programme of plant and tree maintenance enhances the quality of the product.
- How the term 'plant husbandry' refers to the planting and growing of plant species.
- How providing a rich diversity of plant species, we are fulfilling the wishes and vision of Mary and Russell Matthews.

Key competencies

Thinking

Participating and contributing

Essential skills

Information gathering

Work and study

Values

Excellence

Innovation

Community and participation

Points of interest

Rejuvenated soil, prepared plots

Activity 9: The riverside garden rally

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.

Numbers: This lesson is 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

Keywords:
Co-operation, teamwork, equity, understanding, interpretation.

Science: Living world

Life processes.
Ecology.
Evolution.

Social Science

Place and environment.
Continuity and change.

Science: Planet Earth and beyond

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

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, or sketch various features of the Tupare Riverside School.
- Work effectively in small groups, under pressure of time.

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

The house, several tracks, prominent native trees, picnic area, Waiwhakaiho River, the gatehouse, the cottage, exotic trees.