



Growing and Learning with 5+ A Day

PRIMARY SCHOOL LEVELS 2 & 3
www.5adayeducation.org.nz



Lessons Linked to The New Zealand Curriculum

- Lesson 5 – Companion Planting
- Lesson 6 – A Friendly Garden
- Lesson 7 – Making and Using Healthy Compost
- Lesson 8 – Let's Get Composting



Our range of primary school resources are linked to the New Zealand Curriculum, supporting the learning areas of Health and Physical Education, Literacy, Numeracy, and Science through practical lessons and learning experiences aimed at years 1 to 8.

CONTENTS

Lesson 5 – Companion Planting	02
Lesson 6 – A Friendly Garden	07
Lesson 7 – Making and Using Healthy Compost	12
Lesson 8 – Let's Get Composting	17

Everything in this booklet can be downloaded and printed from www.5adayeducation.org.nz. The online interactives such as eBooks can also be accessed via our website, and learning materials can be ordered free-of-charge and delivered to your school.

Our curriculum-aligned lesson plans offer engaging inquiries into topics such as making healthy eating choices, growing and using your own fresh vegetables, companion planting for environmentally-friendly pest control, and making and using great compost – all supported by colourful student materials such as fact files and graphic organisers.

Our Key Messages



- All Kiwis should eat five or more servings of fresh fruit and vegetables every day for good health
- A serving is about a handful and we all use our own hands, therefore a child's serving is smaller than an adult's
- Eat in season for best value and taste

LESSON 5: Companion Planting

In this lesson, students will explore the importance of companion planting when growing healthy fruit and vegetables. In the follow-on Lesson 6, students will design a garden and add companion plants to keep pests away.



Learning Intentions

Students will:

- discuss the natural ways of preventing pests such as companion planting
- identify plants that grow well together and plants to keep apart
- identify different insect pests

Possible Achievement Objectives

HEALTH AND PHYSICAL EDUCATION: LEVEL 2

Societal Attitudes and Values

Students will:

- explore how people's attitudes, values, and actions contribute to healthy physical and social environments

SCIENCE: LEVEL 2

Ecology

Students will:

- explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human induced

Participating and Contributing

Students will:

- use their growing science knowledge when considering issues of concern to them
- explore various aspects of an issue and make decisions about possible actions

Preparation

What You Need

- eBook: *Fredge's Pest Problem*
- Photo Card: *Pests/Kirearea*
- Fact File: *Good companions?/Hoa pai*
- Resource Sheet: *Who am I?/Ko wai ahau?*

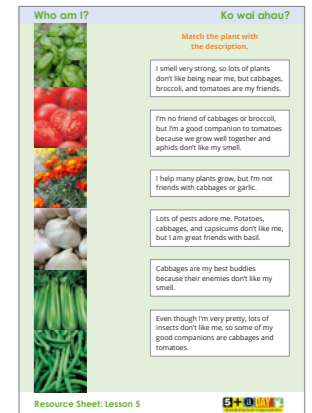
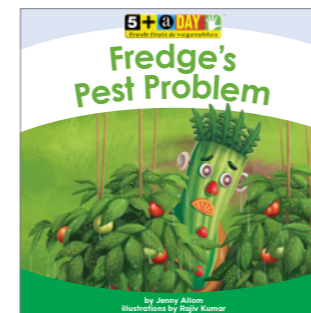


Photo cards, fact files, eBooks, resource sheets & additional resources are available for download at www.5adayeducation.org.nz

Key Vocabulary

These words are important to this lesson, and can be defined and explored in context as you discuss the topic with your students. A number of content words are provided in English and Māori. Introduce terms in both languages as appropriate.

nutrients/taiora: chemicals or minerals in the soil that plants take in through their roots and use as food

pests/kirearea: insects, bugs, or other animals that eat or damage the leaves, roots, or fruit of plants

sap/pia: the fluid that flows through a plant; like blood flows through a human body

Learning Opportunity

This lesson will introduce the students to the concept of companion planting and the identification of plants that grow well together and keep insect pests away, and the plants that don't grow well together because they attract harmful insects. Students will also learn that companion planting is a good choice because it is a natural way of preventing pests.

The Lesson

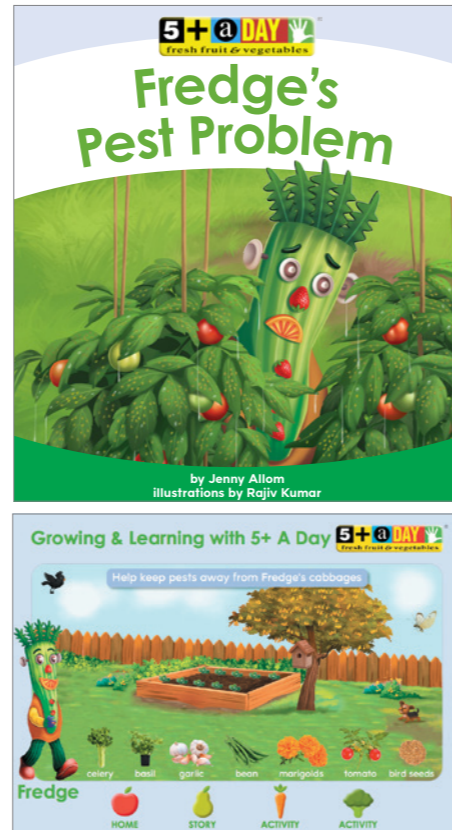
eBook: Fredge's Pest Problem

Begin the lesson by sharing the eBook, *Fredge's Pest Problem*. There is audio for this story that you can use, or students can take turns to read the text.

The eBook focuses on using companion planting when growing vegetables in order to prevent pests. For information on using 5+ A Day eBooks, click the 'eBooks' tab on www.5adayeducation.org.nz.

There are two interactive activities that follow the eBook. They work on a computer, a tablet, or an IWB. They can be used during or at the end of the lesson or in choosing time to reinforce key information from the story. Students will get the most from these activities if you model them first and explain the actions required and the aims of the activity. Then students can do them independently or in pairs.

For Activity 5, help keep pests away from Fredge's cabbages by dragging the correct companion plants into the garden. If you try to drag an incorrect plant into the garden, a butterfly will fly down to the garden. Drag the bird seeds into the bird feeder in the tree to attract the bird into the garden. For Activity 6, drag the helpful creatures into the garden.



Making a Prediction

Read to the end of page 5, then ask the students to predict whether Liam's idea of spraying the tomato plants with water will get rid of the aphids.

- What is Liam's idea?/He aha te whakaaro o Liam?
- Do you think it will work?/Ki ou whakaaro, ka hua?

Read on and stop at an appropriate point.

- Was your prediction correct? Did Liam's idea work?

After you have shared the eBook, discuss the story and how Mrs Paku used companion planting.

- How does Mrs Paku keep pests away from her vegetable garden? (She uses companion plants)
- What companion plants does she use? (She uses flowers, such as marigolds)
- What do the companion plants do? (They attract ladybirds, which like eating aphids)

Emphasise that companion planting is about planting good neighbours or friends together, so they help each other to grow well.

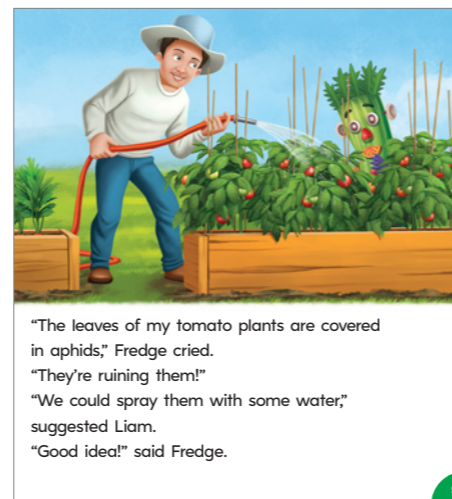


Photo Card: Pests/Kireare

Now show the students the Photo Card: *Pests/Kireare*. Tell them that these garden creatures are all pests.

- What is a pest?/He aha tēnei mea te kirearea?

Support the students to the understanding that a pest is an insect, a bug, or another animal that eats or damages the leaves, roots, or fruit of plants such as cabbages, tomatoes, or broccoli. Now ask the students to look at the photographs of the aphids and identify what they are. Explain that aphids are tiny, and point out the photo that has been magnified so you can see the aphids. Then indicate the second photo of the aphids and explain that when you look at aphids without a magnifying glass or microscope, they look like tiny specks.

Discuss with the students that aphids are bugs that suck the sap from the leaves and stems of plants, such as tomatoes and basil; they reproduce very quickly and can rapidly cover an entire plant. They are hard to remove, so it's best to prevent them.



Caterpillars, Slugs and Snails

Next ask the students to identify the caterpillar and the butterfly.

- What do you think they are eating? (cabbage)/Ki ou whakaaro, e kai ana rātou i te aha? (kāpeti)

Tell the students that they are known as a cabbage caterpillar and a cabbage butterfly because they feed on and damage cabbage plants and other plants in the cabbage family such as broccoli and brussels sprouts.

Finally, ask students to identify the snail and the slug.

- What is the difference between a snail and a slug? (A snail has a shell, a slug doesn't)
- What is the snail eating? (cabbage)/Kai ai te ngata i te aha? (kāpeti)
- What is the slug eating? (silverbeet)/Kai ai te putoko i te aha? (korare)

Prompt the students to notice the damage the snail and the slug have done to the vegetable leaves. Explain that slugs and snails eat the young leaves of vegetable plants like lettuce, basil, and cabbage and can destroy a crop within days.

- Why are they all pests? (They attack and damage vegetable plants)

LESSON 6: A Friendly Garden

Fact File: Good Companions/Hoa pai

Now share the Fact File: *Good companions/Hoa pai*.

Point out to the students that birds also discourage pests. So if you hang a bird feeder with birdseeds from a tree, it will attract birds that like to eat pests like slugs, caterpillars, and aphids. But put your bird feeder away when you've just planted some seeds or you might have the same problem as Fredge in the eBook, *Fredge Plants Some Seeds*.

To finish the lesson, revisit the eBook *Fredge's Pest Problem* and collaboratively play Activity 5 to help keep pests away from Fredge's cabbages.

Good companions	Hoa pai						
<p>The purpose of companion planting is to plant certain plants together, so they help each other grow well and keep pests away.</p> <p>Companion planting:</p> <ul style="list-style-type: none"> attracts helpful insects like ladybirds, ground beetles, and worms to your plants keeps harmful pests like caterpillars and snails away from your plants. 	<p>Many plants make good neighbours for your vegetables:</p> <table border="1"> <tr> <td> <p>Basil improves the flavour of tomatoes, attracts bees, and keeps aphids away. However, it doesn't like growing next to cabbages or broccoli.</p> </td> <td> <p>Beans add nitrogen to the soil, helping plants grow. But they don't grow well near cabbages or garlic.</p> </td> </tr> <tr> <td> <p>Marigolds are strong smelling flowers that keep pests away from vegetables such as cabbages and tomatoes, and attract helpful insects like ladybirds, which also eat these pests.</p> </td> <td> <p>Celery is a good neighbour of cabbages. It keeps cabbage butterflies away because they don't like the smell of celery.</p> </td> </tr> <tr> <td> <p>Tomatoes attract many pests and they're not good neighbours of potatoes, cabbages, or capsicums, but they like growing near basil.</p> </td> <td> <p>Garlic has a strong smell, so many pests don't like it. It also helps plants like broccoli, cabbages, and tomatoes grow well.</p> </td> </tr> </table>	<p>Basil improves the flavour of tomatoes, attracts bees, and keeps aphids away. However, it doesn't like growing next to cabbages or broccoli.</p>	<p>Beans add nitrogen to the soil, helping plants grow. But they don't grow well near cabbages or garlic.</p>	<p>Marigolds are strong smelling flowers that keep pests away from vegetables such as cabbages and tomatoes, and attract helpful insects like ladybirds, which also eat these pests.</p>	<p>Celery is a good neighbour of cabbages. It keeps cabbage butterflies away because they don't like the smell of celery.</p>	<p>Tomatoes attract many pests and they're not good neighbours of potatoes, cabbages, or capsicums, but they like growing near basil.</p>	<p>Garlic has a strong smell, so many pests don't like it. It also helps plants like broccoli, cabbages, and tomatoes grow well.</p>
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Fact File: Lesson 5

In this lesson, students will begin to understand that some insects are helpful in a garden, and others are harmful. They will also continue to explore companion planting, by designing a garden and adding companion plants to attract helpful insects and keep pests away.



Reflect on the Learning

Give each student a copy of the Resource Sheet: *Who am I?/ Ko wai ahau?* The students can work independently or in pairs to match each plant with the correct description. They can either work on a printed copy or use the text tool on the PDF. Then review the students' results.

Reflect on the learning outcomes for the lesson. Allow students to talk about and share ideas that are still unclear. In reflecting on this lesson, focus the discussion on the importance of companion planting to enable plants to grow well and prevent pests.

Who am I?	Ko wai ahau?
	<p>Match the plant with the description.</p> <ul style="list-style-type: none"> I smell very strong, so lots of plants don't like being near me, but cabbages, broccoli, and tomatoes are my friends. I'm no friend of cabbages or broccoli, but I'm a good companion to tomatoes because we grow well together and aphids don't like my smell. I help many plants grow, but I'm not friends with cabbages or garlic. Lots of pests adore me. Potatoes, cabbages, and capsicums don't like me, but I am great friends with basil. Cabbages are my best buddies because their enemies don't like my smell. Even though I'm very pretty, lots of insects don't like me, so some of my good companions are cabbages and tomatoes.

Resource Sheet: Lesson 5

Learning Intentions

Students will:

- discuss the natural ways of preventing pests such as companion planting
- identify plants that grow well together and plants to keep apart
- identify helpful garden creatures



Possible Achievement Objectives

HEALTH AND PHYSICAL EDUCATION: LEVEL 2

Societal Attitudes and Values

Students will:

- explore how people's attitudes, values, and actions contribute to healthy physical and social environments

SCIENCE: LEVEL 2

Ecology

Students will:

- explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human induced

Participating and Contributing

Students will:

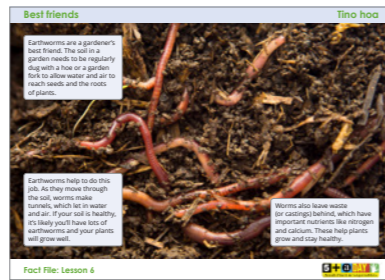
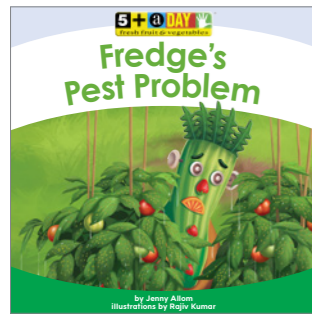
- use their growing science knowledge when considering issues of concern to them
- explore various aspects of an issue and make decisions about possible actions

Preparation

Photo cards, fact files, eBooks, resource sheets & additional resources are available for download at www.5adayeducation.org.nz

What You Need

- **eBook:** *Fredge's Pest Problem*
- **Photo Card:** *Pests/Kirearea* (from Lesson 5)
- **Fact File:** *Good companions/Hoa pai* (from Lesson 5)
- **Fact File:** *Best friends/Tino hoa*
- **Resource Sheet:** *Design a friendly garden/Whakahoahoa he māra tautaiāo*



Key Vocabulary

These words are important to this lesson, and can be defined and explored in context as you discuss the topic with your students. A number of content words are provided in English and Māori. Introduce terms in both languages as appropriate.

worm castings/paranoke: the waste from worms

nutrients/taiora: chemicals or minerals in the soil that plants take in through their roots and use as food

pests/kirearea: insects, bugs, or other animals that eat or damage the leaves, roots, or fruit of plants

sap/pia: the fluid that flows through a plant; like blood flows through a human body

Learning Opportunity

This lesson follows on from Lesson 5. Students will design a garden and identify and add companion plants to keep pests away.

The Lesson

eBook: Fredge's Pest Problem

Begin the lesson by revisiting the eBook *Fredge's Pest Problem*. Refer to Lesson 5 on page 04 for eBook and activities information.

With the students, discuss Fredge's pest problem and how it was resolved.

- *What was Fredge's problem?* (Aphids were eating his tomato plants.)/He aha te raru a Fredge? (Kua kainga āna tomatō e ngā ngaro ngongo)
- *How did Fredge solve this problem?* (Mrs Paku told him about companion planting, so he decided to plant some marigolds next to his tomato plants)

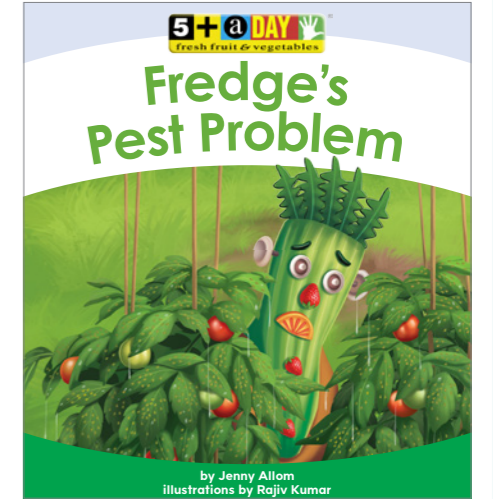


Photo Card: Pests/Kirearea

Next, show the students the Photo Card: *Pests/Kirearea* from Lesson 5, and remind them of the damage pests can do to vegetable and fruit plants. Discuss again the main purpose of companion planting. (Planting good neighbouring plants will attract helpful insects and deter harmful insects, so plants grow well.)



Fact File: Good Companions/Hoa pai

Revisit the Fact File: *Good companions/Hoa pai* from Lesson 5, and discuss with the students the plants that make good companions. They can then work in pairs to write a definition of companion planting and why it's useful for growing healthy vegetables and fruit. Review their definitions and then display them on the classroom wall.

Tell the students that they've talked a lot about pests that are bad for the garden, but what about helpful creatures that are good for the garden?

- Ladybirds are good for the garden. They eat pests like aphids and caterpillars
- Ground beetles are good because they eat pests such as slugs
- What about earthworms?/Ka pēwhea ngā noke? Do you think they are helpful or harmful?

Encourage the students to give their ideas, then say,

- Let's find out/Me rapu whakautu tātou

Fact File: Lesson 5

Resource Sheet: Design a Friendly Garden

Now, tell the students that they are going to design a vegetable garden. Using Resource Sheet: *Design a friendly garden/Whakahoahoa he māra tautaiāo*, the students can work independently to create a companion planted garden. They need to decide which vegetables they would like to plant (tomatoes or beans). Then, using the information from the fact file in Lesson 5 (*Good companions/Hoa pai*), they can identify good companion plants. The students can draw or label the plants and its companions. They also need to think about the creatures that these plants might attract such as ladybirds, ground beetles, or birds.

Resource Sheet: Lesson 6

Fact File: Best friends/Tino hoa

Share the Fact File: *Best friends/Tino hoa* with the students.

Next, revisit the eBook *Fredge's Pest Problem* and have the students play Activity 6 *Helpful or Harmful?* They need to drag the helpful insects into the garden. They can do this independently or in pairs.

Fact File: Lesson 6

Reflect on the Learning

With the students, review the friendly gardens they designed.

- Would you plant a garden using companion planting? Why/why not?

Reflect on the learning outcomes for the lesson. Allow the students to talk about and share ideas that are still unclear. This is also a time to reflect on the learning and to signal the focus for the next lesson, where students will learn about composting, which helps create healthy soil for growing fruit and vegetables.



LESSON 7: Making and Using Healthy Compost

In this lesson, students will explore the importance of composting and come to an understanding of what makes good compost. In Lesson 2, students will make and observe the changes that occur as organic material is broken down in the composting process.



Learning Intentions

Students will:

- learn that compost is an important way to recycle nutrients back into the soil for plant growth and creating a disease resistant, healthy soil
- learn that the composting process relies on the correct environment and the action of fungi, bacteria, and invertebrates



Possible Achievement Objectives

SCIENCE: LEVEL 2

Properties and Changes of Matter

Students will:

- observe, describe, and compare physical and chemical properties of common materials and changes that occur when materials are mixed, heated, or cooled

SCIENCE: LEVEL 3

Ecology

Students will:

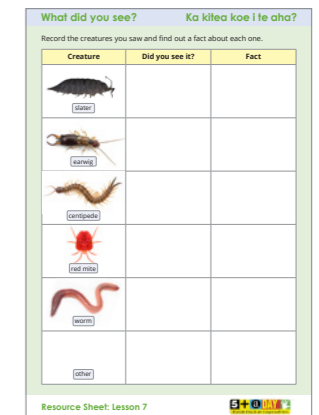
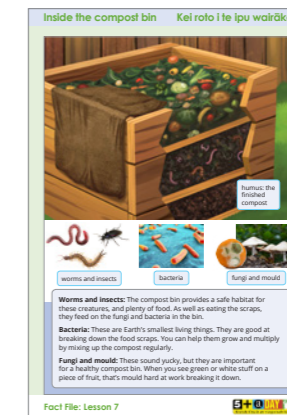
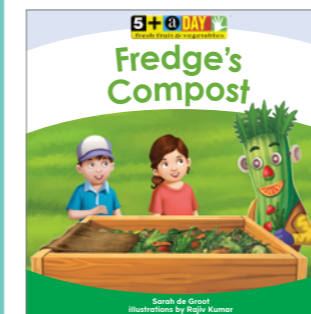
- explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human induced

Preparation

What You Need

- eBook: *Fredge's Compost*
- Photo Card: *Thumbs up, thumbs down/Kōnui ake, kōnui iho*
- Fact File: *Inside the compost bin/Kei roto i te ipu wairākau*
- Resource Sheet: *What did you see?/Ka kitea koe i te aha?*
- A bag of leaf litter or natural compost from a bin
- A sheet of white card
- Kitchen tongs, white bowl
- Magnifying glass

Photo cards, fact files, eBooks, resource sheets & additional resources are available for download at www.5adayeducation.org.nz



Key Vocabulary

Unfamiliar concepts and vocabulary should be used and defined simply in context:

bacteria/huakita: tiny organisms that help with breaking down living things; you need a microscope to see them

fungi/hekaheka: helps to decompose, or break down, plant, animal, and other living matter; mushrooms and mould are fungi

humus/paraumu: the nutrient rich, soil-like end product of the composting process

nutrients/taiora: chemicals or minerals in the soil, which plants take in through their roots and use as food

Learning Opportunity

This lesson will introduce the students to the environmental importance of composting, and how this helps create healthy soil in order to grow fresh fruit and vegetables. Students will also explore the composting process, looking closely at what happens over time in a compost bin.

The Lesson

eBook: Fredge's Compost

Begin the lesson by sharing the eBook, *Fredge's Compost*. There is audio for this story that you can use, or students can take turns to read the text.

The focus of the eBook is to reinforce information about correct composting and the value of composting for soil health.

There are two interactive activities that follow the eBook. They work on a computer, a tablet, or an IWB. They can be used during or at the end of the lesson or in choosing time to reinforce key information from the story. Students will get the most from these activities if you model them first and explain the actions required and the aims of the activity. Then students can do them independently or in pairs.

For Activity 7, help Fredge make compost by dragging the correct items into the compost bin: banana, apple, carrot, spinach. For Activity 8, to show how compost is made, drag the items into the compost bin in the correct order: food scraps, rotting food, compost creatures, compost.

- What important things did we learn in this book?
- Were Niko and Rae helping to make good compost? Why?

Ask the students to describe what happened when Niko and Rae put rice and meat into Fredge's compost bin.

- What would happen if they kept doing that? (There would be lots of mice and flies in Fredge's garden)
- Yes, there would lots of pesky mice and flies./ Ae, he maha rawa ngā kiore me ngā rango kirearea hoki



Fact File: Inside the Compost Bin/ Kei roto i te ipu wairākau

- If you poked around inside the compost bin, what might you see, apart from the scraps?

Make a list of the students' suggestions.

Now use the tongs to place a small pile of the leaf litter onto the sheet of card. Use the tongs to carefully lift off the larger matter, so the smaller pieces can be seen. This will make it easier to spot any living things.

Note: Don't let the students touch or sniff the compost. Some of the bacteria can cause Legionnaires' Disease, which is a pneumonia caused by bacteria commonly found in water and soils, including potting mix and compost, so always use the tongs to handle it.

- What can you see?/He aha tāu e kitea ai?

As you poke around carefully, you may see tiny creatures such as red mites, black beetles, slaters, earwigs, and centipedes against the white card background. List the ones that the students know, and write a description of any unknown ones.

You could carefully place one of each kind of creature into a white bowl so students can take a closer look using the magnifying glass.

Now share the Fact File: *Inside the compost bin/Kei roto i te ipu wairākau*.

Discuss the information about fungi, insects, and bacteria, and how each contributes to a healthy compost bin. The discussion needs to explore how the compost works its way to the bottom of the bin. By the time it gets there, it is rich and healthy humus, which is ready to go on the garden to add nutrients that help plants grow.

- How does the compost bin work?/He aha te whakaritenga mo ngā ipu wairākau?
- What happens as the fungi, insects, and bacteria do their work? (The scraps are broken down)
- When is the compost ready? What should it look like? (Humus should look brown and soil-like)
- What do you do with the finished compost? (Put it on the garden to add nutrients to the soil.)/ Ka aha koe ki te wairākau otinga? (Whakatō ki te māra kia kinakahia ngā taioira ki te one)



Photo Card: Thumbs Up, Thumbs Down

Show the students the Photo Card: *Thumbs up, thumbs down/ Kōnui ake, kōnui iho*. (You can display it using a data projector or share printouts in small groups.)

- These photos show some leftovers from preparing dinner. Give me a thumbs up or a thumbs down as I point to each item. Should I put it in my compost bin?

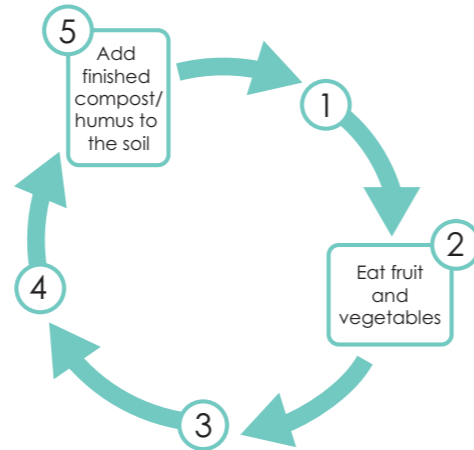


LESSON 8: Let's Get Composting

The Compost Cycle

To reinforce the cyclical nature of composting, draw the diagram to the right on the board and have the students help you fill in the following missing stages:

1. Grow fresh fruit and vegetables in healthy soil
3. Save fruit and vegetable scraps
4. Use scraps to make compost



In this practical lesson, students will use what they have learned in Lesson 7 to create compost. They can watch and record the changes that occur.








Reflect on the Learning

After the students have had the opportunity to look at any creatures you have found and made notes, give them each a copy of the Resource Sheet: *What did you see?/Ka kitea koe i te aha?*

Download the active PDF for them to complete (they can type directly into the spaces provided) or print the sheet for them to work on. Explain that they can use this to choose some of the creatures they saw and to find out a fact about each one.

This is also a time to reflect on the learning and signal the focus for the next lesson, where students will carry out a long-term practical exercise to observe the changes that occur during the composting process.

What did you see? Ka kitea koe i te aha?		Record the creatures you saw and find out a fact about each one.	
Creature	Did you see it?	Fact	
 slater			
 earwig			
 centipede			
 red mite			
 worm			
other			

Resource Sheet: Lesson 7

Learning Intentions

Students will:

- learn that the composting process occurs over a period of time
- learn that the composting process relies on the correct environment and action of fungi, bacteria, and invertebrates to create nutrient-rich humus



Possible Achievement Objectives

SCIENCE: LEVEL 2

Properties and Changes of Matter

Students will:

- observe, describe, and compare physical and chemical properties of common materials and changes, which occur when materials are mixed, heated, or cooled

MATHEMATICS AND STATISTICS: LEVEL 3

Patterns and Relationships

Students will:

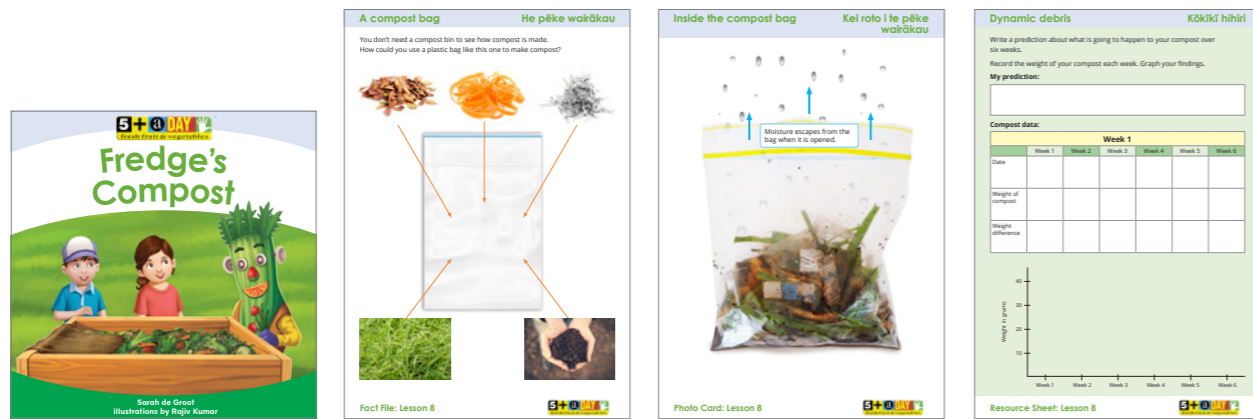
- connect members of sequential patterns with their ordinal position and use tables, graphs, and diagrams to find relationships between successive elements of number and spatial patterns

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Preparation

What You Need

- **eBook:** *Fredge's Compost*
- **Fact File:** *A compost bag/He pēke wairākau*
- **Photo Card:** *Inside the compost bag/Kei roto i te pēke wairākau*
- **Resource Sheet:** *Dynamic debris/Kōkiri hihiri*
- Plastic zip-lock bags (1 per student)
- Accurate kitchen scales
- Garden soil
- Material to compost, e.g., fruit and vegetable peelings, grass clippings, torn newspaper, dry leaves



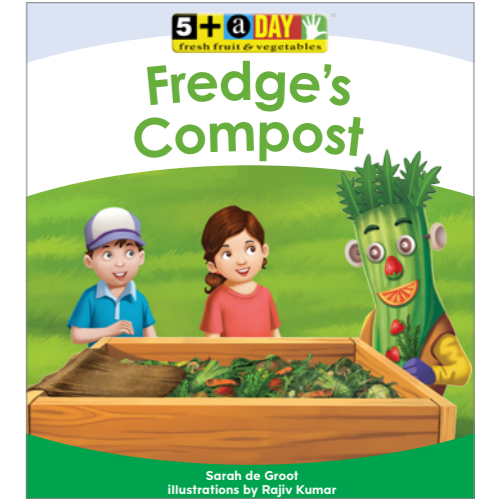
The Lesson

eBook: Fredge's Compost

Begin the lesson by revisiting the eBook, *Fredge's Compost*. Refer to Lesson 7 on page 14 for eBook and activities information.

After revisiting the eBook, ask the students if they can remember the steps from collecting food scraps to compost that is ready for the garden. You could copy the text of each step from the book onto separate cards and have the students arrange them in the correct order:

- Every day, Fredge and the HQ team fed the compost bin
- The food scraps, grass, and leaves mingled and began to rot
- Beetles, worms, and centipedes crawled in for a feed
- Bacteria and fungi also ate the scraps, helping to break them down
- The bin became a dark, warm place, and over time compost formed



Fact File: A Compost Bag/He pēke wairākau

Explain to the students that they are going to make compost in the classroom and watch how it changes.

- *How could we do this? What could we use instead of a compost bin?/Me pēwhea tātou e mahi ai? Me whakamahi tātou i te aha, inā kāore he ipu wairākau?*

Show the students the Fact File: *A compost bag/He pēke wairākau*. You can enlarge this using a data projector or use printouts and share these in small groups.

- *What does this tell us to do?/Mai i tēnei, he aha ngā tohutohu mo tātou?*

Discuss the materials and the sealable plastic bag. Then show the students the groups of materials they can use to start their own compost bags. (Students can collect some of these materials in the week before the lesson. They only need a small amount of each.)

Note: *Don't let the students touch or sniff the compost as it is in progress. Some of the bacteria can cause Legionnaires' Disease, which is a pneumonia caused by bacteria commonly found in water and soils, including potting mix and compost. The students should always open the compost bags in a well-ventilated area, preferably outdoors, and away from their faces. They should wash their hands after they opened and resealed their compost bags.*



Key Vocabulary

Unfamiliar concepts and vocabulary should be used and defined in context:

bacteria/huakita: tiny organisms that help with breaking down living things; You need a microscope to see them

fungi/hekaheka: helps to decompose, or break down, plant, animal, and other living matter; mushrooms and mould are fungi

Learning Opportunity

This lesson will allow students to set up an experiment to observe the composting process and to record the visible changes and the falling weight of each sample as the water leaves the materials.

Making a Compost Bag

Show the students the steps they need to follow in their experiment and discuss them. Download and print out the step-by-step *Making a compost bag* (link on www.5adayeducation.org.nz).



Photo Card: Inside the Compost Bag/ Kei roto i te pēke wairākau

Share the Photo Card: *Inside the compost bag/Kei roto i te pēke wairākau*, and think about why the weight of the bag changes over time.



Reflect on the Learning

Revisit the “Making a compost bag” steps each day when students shake or massage their compost bags. They can observe what’s happening to the compost in their compost bags over a six-week period, and use the Resource Sheet: *Dynamic debris/Kōkiki hihiri* to record their observations and complete the graph. After 6 weeks, they can compare and discuss their observations and the graphs they have drawn from the data they collected.

Reflect on the experiences and learning from the lesson. You can also revisit and discuss the learning intentions:

- the composting process occurs over a period of time
- the composting process relies on the correct environment and the action of fungi, bacteria, and invertebrates to create nutrient-rich humus

Dynamic debris Kōkiki hihiri

Write a prediction about what is going to happen to your compost over six weeks.
Record the weight of your compost each week. Graph your findings.

My prediction:

Compost data:

	Week 1					
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Date						
Weight of compost						
Weight difference						

Resource Sheet: Lesson 8





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