# Primary School Teaching Resource

Linked to the New Zealand Curriculum supporting Health and Physical Education, Literacy, Numeracy and Science in schools through practical learning experiences.

Growing and Learning with 5+ A Day



#### Introducing Growing and Learning with 5+ A Day

We are pleased to provide you with our new resource developed in partnership with a focus group of teachers: **Growing and Learning with 5+ A Day.** The resource is designed to empower students and enable them to create and maintain a healthy lifestyle using sustainable practices for themselves and future generations.

We hope that you find the practical lessons and activities, supported by differentiated resource sheets, useful in creating awareness, understanding and knowledge of the importance of eating 5+ A Day, every day to promote healthy eating and support a sustainable environment.

This resource can be easily adapted and incorporated into your long, medium and short term Health and Physical Education planning. Many of the lessons and activities have cross-curricular links with English, Maths and Science. We have provided curriculum links for each lesson along with achievement objectives, strands and the appropriate learning objective for each lesson (WALT) as well as resource sheets.

The black and white resource sheets (in many cases complete with extension activities) have been provided in a booklet to photocopy and distribute to the students. Alternatively, they can be downloaded at www.5aday.co.nz.

#### 5+ A Day the Sustainable Way

A particular focus of this resource is on building sustainable practices into the promotion of 5+ A Day. Education for sustainability is about learning to think and act in ways that will safeguard the future well-being of people and our planet.

For more information on education for sustainability visit:

http://efs.tki.org.nz/EfS-in-the-curriculum/What-is-education-for-sustainability

In eating 5+ A Day we can choose to purchase fruit and vegetables that are in season. Growing your own fruit and vegetables promotes healthy food habits and an environmentally friendly lifestyle. Recycling in the garden, e.g. composting, reusing containers or other items, collecting water or considering crops that require minimum water use not only reduces the carbon footprint but also fosters sustainable practices.



# Linking 'Growing and Learning with 5+ A Day' into the New Zealand Curriculum

You will find this resource aligns with the Food and Nutrition for Healthy Confident Kids Guidelines (2007); the essential learning areas of Science and Health and Physical Education within the New Zealand Curriculum; and the Guidelines for Environmental Education (1999) for the EfS (Education for Sustainability).

For each lesson the achievement objectives and strands are provided along with independent concepts, key competencies and 'WALT' (we are learning to) descriptors.

#### **Key Competencies**

*Managing self:* to engage in a range of learning experiences that encourage students to make informed choices for healthy lifestyle practices.

Relating to others: to listen actively; share ideas; negotiate and work with others when undertaking scientific investigations.

Participating and contributing: to participate and contribute actively as a group member.

*Thinking:* to construct knowledge, reflect and evaluate different assumptions.

Use language, symbols and texts: to communicate ideas orally, visually and in text.

#### Interdependent Concepts

*Hauora:* to develop understanding of the relationship between eating fresh fruit and vegetables and personal well-being.

Socio-ecological: to explore how composting and growing fruit and vegetables at home and school may influence our choice and enjoyment of fruit and vegetables.

Attitudes and values: to take part in practical experiences designed to help develop health enhancing attitudes to fruit and vegetables.

*Health promotion:* to take individual and collective action to promote the consumption of fruit and vegetables using the 5+ A Day message to promote good health.

#### Online Resource Library

We have recently developed an online resource library where you will find all our resources, that can be easily downloaded at http://5aday.co.nz/resources.html?id=561



#### Composting with 5+ A Day - Lesson One for Levels 1 and 2

Curriculum Links			
Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Relationships with other people Strand Relationships (C2) Demonstrate respect through sharing and co-operation in groups.	Show respect of others through sharing and co-operation in groups.	Attitudes and Values	Relating to others
Science Investigating in Science Extend their experiences and personal explanations of the natural world through exploration, play, asking questions and discussing simple models.  Material World Strand Observe, describe and compare physical and chemical properties of common materials and changes that	Follow the steps of a simple science investigation.  Observe the physical and chemical changes that occur when decaying matter breaks down.  Classify materials that will decompose and those that won't.  Create nutrient rich soil for plant life. Investigate safe ways to compost.	Attitudes and Values	Thinking
occur when materials are mixed, heated or cooled.	Investigate sale ways to compost.  Investigate which food scraps can be recycled.		

#### Introducing the Lesson

This practical lesson will teach the students the importance of composting and provide them with an understanding of what makes good compost.

Discuss that composting is the breakdown of matter such as fruit and vegetable scraps, grass clippings, leaves, etc. This is done by Fungi, Bacteria and Invertebrates (often called FBI), along with other decomposers like worms.

Discuss that compost is an important way to recycle nutrients back into the soil for plant growth creating a bug and disease resistant healthy soil.

Use Composting Resource Sheets 1, 2 and 3 to discuss what items are good for composting and the composting process.

#### Practical Lesson – Compost in a Bag

What you will need: plastic bags, twist ties, fruit and vegetable scraps, grass clippings, dry leaves, garden soil, water, scales to weigh the bags weekly.

#### Getting Ready to Compost

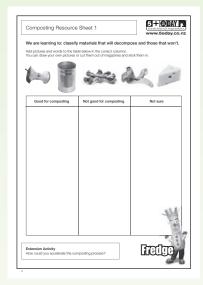
- Using Resource Sheet 3 students write an introduction and prediction.
- Ask the students to collect clear plastic bags (about the size of a one-litre freezer bag) and twist ties.
- Collect newspaper, dry leaves, egg cartons.

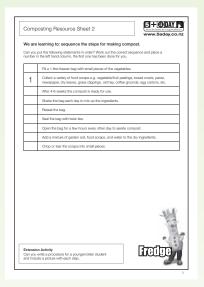
Important note for composting and gardening: Legionnaires' Disease is a pneumonia caused by bacteria commonly found in water and soils, including potting mix and compost.

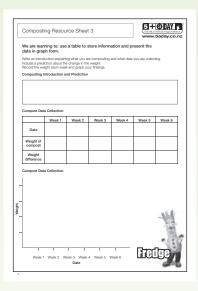
- Bags should be carefully opened in a well-ventilated area, preferably outdoors, and away from the face.
- Hands should be washed after gardening or composting.

#### Composting in Action

- On the day of composting students can bring in fruit and vegetable peels, coffee grinds, egg shells, etc. (not meat, dairy, rice, bread or pasta. Visit www.5aday.co.nz for a full list).
- The students work in a group to tear the dry materials into small pieces and put in the bag with the food scraps, some garden soil and water.
- Each group should record what they used in their bag to compare with other groups.
- Seal the bags securely with twist ties.
- The students massage their bags each day to mix up the ingredients.
- Students revisit their Resource Sheet 3 to record the weight of their compost and the date each week.
- Bags should be opened to aerate compost every other day. It is important that this is done outside (see important note regarding Legionnaires' disease).
- The compost will be ready to use in the growing lessons to follow in 4-6 weeks.
- Students discuss the weight differences and which bags composted best. Revisit the students' predictions were they correct?
- The compost can now be used in your school garden or in the Hairy Herb Head growing activity.







Refer to Composting Resource Sheets on Pages 2, 3 and 4 of Booklet of Resource Sheets for Photocopying.



### Dynamic Debris - Lesson One for Levels 3 and 4

Curriculum Links			
Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Relationships with other people Strand Interpersonal skills (C3) Describe and demonstrate a range of assertive communication skills and processes that enable them to interact appropriately with other people.	Work in a group situation and communicate ideas with clarity while considering the needs of others.	Attitudes and Values	Relating to others
Science Investigating in Science Build on prior experiences, working together to share and examine their own and each other's knowledge.  Material World Strand Compare chemical and physical changes.	Undertake a science investigation. Investigate a range of ways to compost. Observe the physical and chemical changes that occur as matter decomposes. Classify materials that will decompose and those that will not. Create nutrient rich soil for plant life. Define the term sustainability.	Attitudes and Values	Thinking

#### Introducing the Lesson

Discuss the following composting concepts with students before working through the Investigation Questions below:

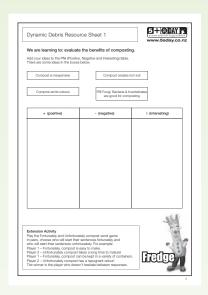
- Living organisms produce organic matter.
- Compost consists of decayed organic matter.
- Just as there is a cycle of life, there is a cycle of decomposition in which once living materials break down and release their nutrients to again support life.
- Many synthetic materials created by humans do not decompose.
- Humus is a dark, crumbly material resulting from the decomposition of organisms and parts of organisms, and becomes part of the soil. As decomposition occurs in a compost pile, heat is generated.
- Composting is the management of the bio-decay of organic matter into humus-like material by other organisms.

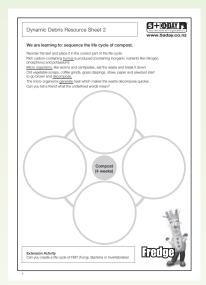
You may want to use the 'Compost in a bag' practical lesson in Composting with 5+ A Day Lesson One for Levels 1 and 2.

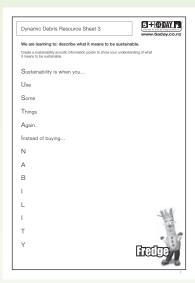
#### Investigation Questions and Resource Sheets

- Use Dynamic Debris Resource Sheet 1 to create a PNI (Positive, Negative and Interesting) to record thoughts and findings.
- Investigate and present the life cycle of compost for plant and vegetable matter using the Dynamic Debris Resource Sheet 2.
- Using Dynamic Debris Resource Sheet 3 show an understanding of what is meant by sustainability?
- Investigate differing composting methods (e.g. layering, plastic bottle, bag, bin, worm farm).
- What do you think may be the advantages and disadvantages of each?
- What are the sustainable features of each method (consider reduce, reuse, recycle)?
- Choose and action one method of composting either in groups or as a class.
- Consider pros and cons for your chosen method.

### HOME LEARNING: At home students could make their own compost or devise a compost recipe.







Refer to Dynamic Debris Resource Sheets on Pages 5, 6 and 7 of Booklet of Resource Sheets for Photocopying.



#### Growing Hairy Herb Heads - Lesson Two for Levels 1 and 2

Curriculum Links			
Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Personal health and physical development Strand Personal growth and development (A1) Describe feelings and ask questions about their health, growth, development, and personal needs and wants.	Recognise that healthy eating will positively affect health, growth and development.	Hauora	Participating and contributing
Science Participating and Contributing Explore and act on issues and questions that link their science learning to their daily learning.	Investigate how plants grow in different conditions.  Explore how plants grow from seeds. Identify what things plants need to grow. Aim to create optimal growing conditions. Appreciate that adding herbs to meals will change the flavour of the food.	Hauora	Thinking

#### Introducing the Lesson

Introduce herbs and discuss that they are plants that can be used to flavour many dishes such as salads and pastas, and that they are also used medicinally by many cultures.

Referring to Growing Resource Sheet 1 discuss the fact that herbs grow from seeds and that seeds need warmth to sprout (germinate).

Talk about what plants need to grow well: air, light, warmth, water, nutrients.

Students can draw a diagram of a plant or use the one on Resource Sheet 1. Label the parts of the plant and discuss their function:

- Roots provide stability or 'anchor' the plant and take up water and nutrients to the plant.
- Stem carries water and nutrients to different parts of the plant.
- Leaves use light from the sun and carbon dioxide from the air and water to make food for the plant (this process is called photosynthesis).

#### Practical Lesson – Growing Hairy Herb Heads

What you will need: Recycled clean tin cans, hammer, nail, stones or shells for drainage, soil (or compost from Lesson 1), herb seeds and painting materials to decorate cans.

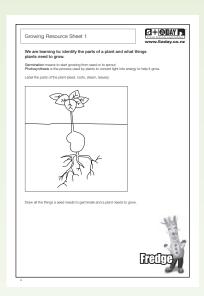
#### Getting Ready to Grow Hairy Herb Heads

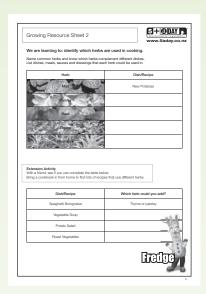
- Use the Growing Resource Sheet 2 to introduce the students to some common herbs and their uses.
- Revisit the scientific properties for optimal plant growth, e.g. aeration, drainage, sunlight, moisture and soil composition.
- Each student brings in a recycled and cleaned tin can.
- Use a hammer and nail to poke holes in the bottom of the can (consider safety issues).
- Students then paint or decorate their own can and leave the can to dry.

#### Growing in Action

- Place a single layer of stones or shells on the bottom of the can to provide drainage.
- Fill the can to two thirds with potting mix or your own compost made in Lesson 1.
- Students plant chosen herb seeds into the can. (Follow the instructions on the back of the packet).
- Gently water and place can in a sheltered place with good natural light.
- Water the cans every second day to ensure the soil remains moist.
- Seeds should germinate and sprout in a week or two.
- Once the herbs are well established the students can take them home to plant in the garden and use in the family meals.

### HOME LEARNING: At home students could plant a herb garden or grow herbs in pots with their family.





Refer to Growing Resource Sheets on Pages 8 and 9 of Booklet of Resource Sheets for Photocopying.



## Growing Salad Boxes with Companions - Lesson Two for Levels 3 and 4

Curriculum Links			
Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Healthy communities and environments Strand Societal attitudes and values (D1) Identify how healthcare and physical activity practices are influenced by community and environmental factors.	Recognise how growing fresh vegetables will promote healthy eating at school and at home.	Socio ecological	Participating and contributing
Science Investigating in Science Build on prior experiences, working together to share and examine their own and each other's knowledge.	Investigate how plants grow from seeds. Understand that plants prefer different growing conditions. Appreciate that growing food requires planning and organisation. Identify what plants grow together and what plants to keep apart.	Socio ecological	Thinking

#### Introducing the Lesson

Referring to Growing Resource Sheet 1 discuss the fact that plants grow from seeds and that seeds need warmth to sprout (germinate).

Talk about what plants need to grow well: air, light, warmth, water, nutrients.

Students can draw a diagram of a plant or use the one on Resource Sheet 1. Label the parts of the plant and discuss their function:

- Roots provide stability or 'anchor' the plant and take up water and nutrients to the plant.
- Stem carries water and nutrients to different parts of the plant.
- Leaves use light from the sun and carbon dioxide from the air and water to make food for the plant (this process is called photosynthesis).

#### **Good Companions**

Discuss how it is important to take into consideration which plants make good companions when planting a garden. Companion gardening is all about choosing the right plants to place beside each other for the best results. Many herbs make good companion plants for different vegetables by adding flavour, attracting bees or deterring pests.

Use Growing Resource Sheet 3 for the students to become familiar with examples of companion planting.

#### Practical Lesson - Growing Salad Boxes with Companions

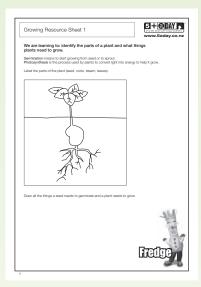
What you will need: A salad box, wooden crate, pots or use your existing school garden, stones for drainage if using pots, good quality soil and compost, a variety of seeds including lettuce, rocket, herbs, etc.

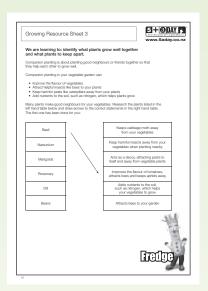
#### Getting Ready to Grow Salad Boxes with Companions

- Students can research what factors they should think about when considering 'good neighbours' e.g. root systems, plants that prefer shade, plants that attract 'good bugs', etc.
- Use the Growing Resource Sheet 3 to help students understand which plants will grow well together in their gardens.
- What companions will you include in your school or home edible garden?

#### Growing in Action

- If using containers place a single layer of stones or shells on the bottom of the container to provide drainage.
- Fill the garden with soil mixed with your own compost made in Lesson 1.
- Students plant chosen salad and herb seeds following the instructions on the back of the packet, considering their knowledge of companion planting.
- Water garden well initially and every second day after planting unless it has rained.
- Seeds should germinate and sprout in a week or two.
- Once the salad greens and herbs are mature the students can harvest them using scissors to make a salad or to use in sandwiches.





Refer to Growing Resource Sheets on Pages 8 and 10 of Booklet of Resource Sheets for Photocopying.



# Eating a 5+ A Day Rainbow for Health and Performance - Lesson Three for Levels 1 and 2

Curriculum Links			
Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Healthy communities and environments Strand Societal attitudes and values (D1) Explore how people's attitudes, values and actions contribute to healthy physical and social environments.	Identify the importance of healthy food choices.  Recognise that it is important to eat 5+ servings of fruit or vegetables every day to maintain a healthy body.	Health promotion	Managing self

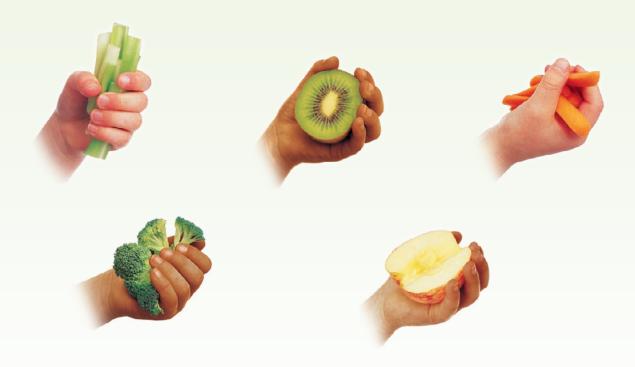
#### Introducing the Concept of Eating 5+ A Day

Discuss the relationship between good food choices and physical activity and how they play an important part in helping their bodies perform better. Use the car analogy...

A car needs good quality petrol if you want it to go well, similarly, your body must have good quality fuel (food) if you want it to do its best. To be really healthy we have to think about not only what goes into your body but also what you do with your body. Therefore eating 5+ A Day fruit and vegetables every day and doing some sort of sport or exercise every day will help to keep you healthy.

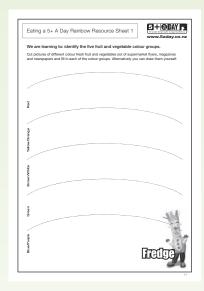
#### Starting the Lesson

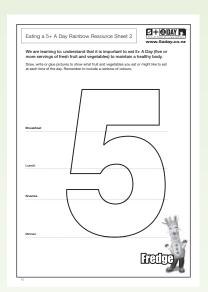
- Discuss the students favourite fruit and vegetables and the importance of eating 5+ servings every day to stay healthy.
- Introduce the students to the concept of using their hand to count their daily servings and that each serving is about a handful. Discuss that everyone uses their own hands so an adult would have a bigger serving than a child.



- Discuss the types of fruit and vegetables the students like to bring in their lunches each day and have a brainstorming session on making their school lunches 5+ A Day friendly: e.g. chopped fruit in yoghurt (visit www.5aday.co.nz for ideas).
- Discuss the importance of eating a rainbow of colours (different coloured fruit and vegetables have different vitamins and minerals we need to stay healthy). How many colours can they think of?
- Discuss good food choices before and after events at sports days such as cross country, swimming, netball, soccer or rugby tournaments. Talk about peak performance.
- Using the Eating a 5+ A Day Rainbow for Health and Performance Resource Sheets 1 and 2 the students can learn the five colour groups of fruit and vegetables and understand that it is important to eat a rainbow.

HOME LEARNING: At home students could take the Fredge Family Challenge to encourage their families to eat a 5+ A Day rainbow for good health and great taste. Download the Fredge Family Challenge from www.5aday.co.nz.





Refer to Eating a 5+ A Day Rainbow Resource Sheets on Pages 11 and 12 of Booklet of Resource Sheets for Photocopying.



# Eating a 5+ A Day Rainbow for Health and Performance - Lesson Three for Levels 3 and 4

Learning Area	We are learning to (WALT)	Independent Concepts	Key Competencies
Health and Physical Education Personal health and physical development Strand Regular Physical activity (A2) Maintain regular participation in enjoyable physical activities in a range of environments and describe how these assist in the promotion of well-being.	Recognise that it's important to take part in 30 minutes of daily activity to keep fit.	Health promotion	Managing self
Relationships with other people Strand Interpersonal skills (C3) Identify the pressures that can influence interactions with other people and demonstrate basic assertiveness strategies to manage these.	To highlight and implement assertive communication skills to promote healthy eating messages.		
Healthy communities and environments Strand People and the environment (D4) Plan and implement a programme to enhance an identified social or physical aspect of their classroom or school environment.	Plan and implement promotional strategies to encourage a greater consumption of fresh fruit and vegetables.		

#### Introducing the Lesson

Discuss the concept of good nutrition in relation to physical play/performance. Two key messages could be to eat 5+ A Day every day and be active for at least 30 minutes every day. Use the car analogy...

A car needs good quality petrol if you want it to go well, similarly, your body must have good quality fuel (food) if you want it to do its best. To be really healthy we have to think about not only what goes into your body but also what you do with your body. Therefore eating 5+ A Day fruit and vegetables every day and doing some sort of sport or exercise every day will help to keep you healthy.

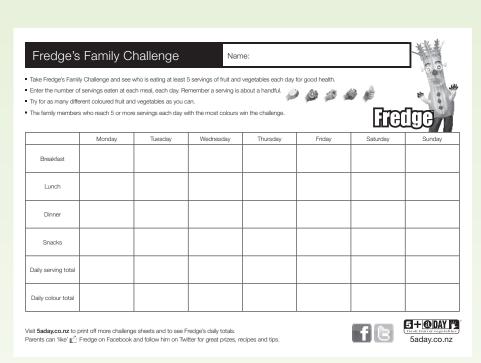
#### Brainstorm Ideas Where Food and Exercise Overlap at School

- Talk about sports teams and nutritious food at half time (e.g. oranges).
  Why is this a good thing to do?
- Consider school camps when students are involved in planning and preparing meals and what a balanced, nutritious meal would include.
- Discuss good food choices before and after events at sports days such as cross country, swimming, netball, soccer or rugby tournaments. Talk about peak performance.
- Talk about what students think our top sports people eat to achieve their sporting goals.
- Talk about every day food that they could have in their lunch boxes.
- Make a class/group poster or newsletter article to communicate 5+ A Day messages to your community.

#### Ideas for Promoting 'Eating a 5+ A Day Rainbow'

- Plan a shared 5+ A Day sandwich lunch with each student bringing in one ingredient e.g.: a container
  of lettuce, a cucumber, tomatoes, carrot, etc. Set up stations so students can make their own 5+ A Day
  sandwiches with rainbow-coloured ingredients.
- Invite parents/family members to share the 5+ A Day sandwich lunch.
- Make a class list of fruit and vegetable lunchbox ideas (visit 5aday.co.nz for more ideas).
- Publish the class lunchbox ideas list in the school newsletter or on the school website.

HOME LEARNING: At home students could discuss the Fredge Family Challenge sheet and how they can encourage others to 'eat a rainbow'. Download the Fredge Family Challenge from www.5aday.co.nz.





#### The 5+ A Day Message

Eat five or more servings of fresh fruit and vegetables every day for good health.

#### What is a Serving?

It's about a handful. Children use their own hand to measure a serving so theirs will be smaller than an adult's serving. This makes it easy to achieve 5+ A Day every day.

#### Take the 5+ A Day Challenge

Add an extra serving of fresh fruit and vegetables to every part of your day for good health great taste and real value. Visit www.5aday.co.nz for inspiration.

Join Fredge on Facebook for up-to-the-minute news, tips, recipes and ways to win great prizes for your school.

Follow Fredge on Twitter for fun facts and quick serving ideas.





www.5aday.co.nz