FOCUS ON FOOD
Thinking Critically about Food and Nutrition
for Teachers of Years 5 to 8

MINISTRY OF EDUCATION
Te Pūkanga o te Mātauranga

[Image of two children engaged in an activity involving healthy snacks]
Acknowledgments

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Focus on Food: Thinking Critically about Food and Nutrition is intended to support teachers across the curriculum with planning units of learning in the context of food and nutrition. It aims to help teachers encourage their students to think critically about the factors affecting food selection. Focus on Food is for English-medium teachers, as well as specialist home economics teachers, of students in years 5–8, working at levels 2–4 of the New Zealand Curriculum.

**WHY THE FOCUS ON FOOD AND NUTRITION IN SCHOOLS?**

Research shows that “Nutrition is fundamental to developing a sense of well-being and to meeting the growth, development, and activity needs of healthy, confident children and young people” (Ministry of Education’s Food and Nutrition for Healthy, Confident Kids: Guidelines to Support Healthy Eating Environments in New Zealand Early Childhood Education Services and Schools, 2007a, page 4).

Many interrelated factors affect what children choose to eat. When they have access to accurate knowledge and information about food and nutrition, children are able to be discerning about which foods they choose to eat.

There is a growing recognition that the health of an individual and their health-related behaviours are the product of that individual’s continuous interaction with their environment. This includes the individual’s family, community, culture, social structure, and physical environment. Communities, schools, and parents can work together to help students develop attitudes and skills to make consistent health-related choices.

Food tastes develop at an early age, and encouraging healthy choices early in life can help to create lifelong preferences for healthy foods.

What and when an individual child eats is affected by a number of factors including:

- their knowledge and attitudes about food and health;
- their individual tastes;
- their socio-economic status;
- the education level of their parents/caregivers;
- the availability, affordability, and attractiveness of various food options;
- their culture;
- external influences, such as peer pressure and advertising.

Children and young people’s eating habits are often driven by needs other than physiological ones. Most do not eat food just because of its nutritional value. They also eat because they like the taste, because “it’s time”, because it’s what is made available to them or it’s what their friends are eating and, sometimes, because it is what they are able to prepare.

Food and Nutrition for Healthy, Confident Kids guidelines, page 4
While the relationship between nutrition and health is well understood, recent research by Sorhaindo and Feinstein (2006) shows that good nutrition can enhance cognition¹ as well as influencing behaviour and affecting school attendance:

- **Children with nutritional deficiencies are especially vulnerable to changes in metabolism that impact upon cognitive ability …** [Treatment] with nutritional supplements can improve performance …
- **Maintaining adequate levels of glucose throughout the day contributes to optimising cognition. These findings have implications for the appropriate timing of meals and snacks throughout the school day.**

Sorhaindo and Feinstein, 2006, page 23

Inadequate nutrition may compromise a child’s attendance, performance, participation, and engagement at school:

- **Poor nutrition may also result in decreased immunity and greater susceptibility to infectious disease. This in turn has the potential to lead to increased levels of absence from school through ill health.**
- **Nutrition, particularly in the short-term, is believed to impact upon individual behaviour. In its more extreme form, this may manifest itself through the presence of developmental disorders, including attention-deficit-hyperactivity disorder (ADHD), dyslexia, dyspraxia and autistic spectrum disorders.**

Sorhaindo and Feinstein, 2006, page 23

There is also significant evidence that eating food with others has positive sociological effects. For example, sitting down to eat as a family can contribute positively to young people’s health and well-being. Project Eat, a major research project investigating the health benefits for teens of eating family meals, reports:

> The frequency with which a teen eats family meals appears to be associated with a variety of psychosocial and behavioral variables, including cigarette smoking, alcohol and marijuana use, grades in school, depressive symptoms, suicidal ideation and suicide attempts. We found family mealtime to be a protective factor in the lives of adolescents for nearly all of these variables, particularly among girls. Specifically, kids who reported eating more family meals per week reported significantly less substance use and significantly better academic and mental health than those eating fewer meals with family.

Eisenberg, 2006

Although this research focused on teenagers, the protective factor of eating meals together could be expected to carry over to younger children in the family.

**What are the legislative requirements relating to food and nutrition in schools?**

In May 2007, two new clauses were added to National Administration Guideline 5. From 1 June 2008, the additions require boards of trustees to:

- promote healthy food and nutrition for all students;
- where food and beverages are sold on school premises, make only healthy options available.

Students’ food-related experiences in school, including teaching and learning experiences, must now meet these requirements.

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¹ The term cognition refers to the mental process of knowing, including aspects such as awareness, perception, reasoning, and judgment.
Why the Focus on Critical Thinking?

*Health and Physical Education in the New Zealand Curriculum* defines the key terms **critical thinking** and **critical action** as follows:

**critical thinking** examining, questioning, evaluating, and challenging taken-for-granted assumptions about issues and practices

**critical action** action based on critical thinking

Knowledge about food and nutrition is continually evolving and changing. This can result in confusing messages about how much of certain foods or combinations of food should be eaten. Advertising and other messages communicated through the media often add to this confusion. Students need to develop reasoning skills that allow them to see both sides of an issue and find their own solutions.

Students learn most effectively when they develop the ability to stand back from the information or ideas that they have engaged with and think about these objectively. Reflective learners assimilate new learning, relate it to what they already know, adapt it for their own purposes, and translate thought into action. Over time, they develop their creativity, their ability to think critically about information and ideas, and their metacognitive ability (that is, their ability to think about their own thinking). Teachers encourage such thinking when they design tasks and opportunities that require students to critically evaluate the material they use and consider the purposes for which it was originally created.

The New Zealand Curriculum, page 34

Students need opportunities to analyse information about food and to think about the relationship between food choices and well-being. Thinking critically about food and nutrition enables students to:

- examine and evaluate their food choices and food-related behaviour;
- make reasonable decisions about their food choices and justify those choices;
- challenge opinions and positions and take action (individually and collectively) to address food- and nutrition-related issues;
- examine the influences of culture, tradition, and the media on food choices.

How does Focus on Food Link to the New Zealand Curriculum?

Focus on Food supports the learning area health and physical education and links to the principles, values, and key competencies of the New Zealand Curriculum. In particular, it links to the key competency of thinking.

Thinking is about using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas … Students who are competent thinkers and problem-solvers actively seek, use, and create knowledge. They reflect on their own learning, draw on personal knowledge and intuitions, ask questions, and challenge the basis of assumptions and perceptions.

The New Zealand Curriculum, page 12

Food and nutrition is a key area of learning within the learning area of health and physical education.

In the context of food and nutrition, students evaluate current issues and theories of nutrition, identify and reflect on factors that influence people’s choices and behaviours, and use this knowledge to make informed decisions.

The New Zealand Curriculum, page 23

See Appendix 1 in the online appendices for details about how the critical-thinking learning opportunities suggested in this resource can link to the values and key competencies of the curriculum. The appendices available online include additional resource material, such as suggested cards for activities. Refer to the list of appendices on page 2. These appendices are available at [www.tki.org.nz/e/community/health](http://www.tki.org.nz/e/community/health)

How does Focus on Food Link to Other Food and Nutrition Initiatives?

Focus on Food supports the government’s Mission-On initiative and links closely to other resources developed as part of this initiative. One of these is the Ministry of Education’s *Food and Nutrition for Healthy, Confident Kids* guidelines, which provides a framework to help schools and their communities develop environments that support healthy eating. Another is the Ministry of Health’s *Food and Beverage Classification System for Years 1–13: User Guide* (2007b), a tool that schools can use to select healthy food and drinks. It classifies food and beverages into “everyday”, “sometimes”, and “occasional” categories.
Teachers can use a range of approaches when developing and implementing programmes that help students to critically explore food and nutrition issues. The purpose of any teaching and learning approach is to enable students to “develop the knowledge, skills, attitudes, and motivation to make informed decisions and to act in ways that contribute to their personal well-being, the well-being of other people, and that of society as a whole” (Health and Physical Education in the New Zealand Curriculum, page 6). It is important to choose an approach that is appropriate to the students’ needs and the particular learning context.

Effective approaches to food and nutrition education centre the learning within authentic, everyday situations in the school environment. They also make strong connections to students’ homes and communities, acknowledging the powerful influence of families and the out-of-school environment on children’s eating behaviour. Effective approaches incorporate a future focus by encouraging students to explore the long-term effects of their food choices.

When teachers provide opportunities for critical thinking, they enable their students to move beyond simply acquiring knowledge and to gain a deeper understanding of how food choices affect all four dimensions of hauora. Opportunities for critical action allow students to understand how they can transfer their learning to real life and to reflect on how it works in practice. In the context of food and nutrition, these opportunities enable students to address their own and others’ food-related needs, now and in the future.

Critical-thinking approaches often involve challenges to students’ beliefs and assumptions. This means that it is important to provide a safe, supportive environment in which cultural and family choices are recognised and acknowledged. Students may feel less threatened, when considering changes they might need to make to their food choices, if the teacher begins with a depersonalised perspective or experience (for example, a shared story or scenario). Students can then consider a personal perspective.

Students’ critical thinking is enhanced when they have a clear understanding of their learning goals and are supported as they develop the strategies they need for monitoring their progress towards these goals and for thinking about how they can improve their learning. Critical thinking is also developed through students’ interactions with their peers. Teachers can facilitate this by fostering inclusive classroom learning communities and explicitly teaching the skills and values of co-operative learning.

Critical-thinking approaches often involve challenges to students’ beliefs and assumptions. Teachers have a significant role in students’ lives. Teachers support students’ critical thinking when they show that they are interested in their thoughts and opinions and challenge them in engaging ways. By listening carefully to their students, too, teachers can be alerted to any misconceptions students may have as well as to the ideas and expertise they already have, which are the foundation for their learning.

It is important to present and to use reliably sourced and accurate information that conveys positive messages about addressing people’s food and nutrition needs, such as the information in Ministry of Education and Ministry of Health materials. (See Further Reading and Resources for Teachers on pages 47–48 and refer to the list of publications sent to schools as part of the Mission-On initiative.)
In order to help their students develop critical-thinking skills and take critical action to address food and nutrition issues, teachers need to:

- ensure that students have a sound knowledge base they can use and apply as they explore learning content;
- encourage students to use relevant and valid information about food and nutrition to question, challenge, or affirm existing beliefs about food-related practices;
- structure teaching and learning opportunities so that students can work co-operatively to make new links between pieces of information;
- ask open-ended questions to encourage students to think and respond independently and with illustrative detail;
- model critical thinking by “thinking out loud” (for example, “I think that … but I’m not sure why I think that”, “I wonder why …”);
- allow students time to think and explore before coming up with solutions and encourage them to go where the evidence leads without fear of giving the “wrong” answer;
- promote interaction among students, encouraging them to question and challenge each other’s assumptions and practice in sensitive and respectful ways;
- provide opportunities for inquiry, giving students time to carefully consider a range of alternatives, to plan and process their solutions, and to debrief;
- encourage students to work hygienically, safely, and co-operatively and to be sensitive to the food traditions and customs of others;
- design authentic food- and nutrition-related tasks in which students can develop skills that are transferable to solving real problems.

**A RANGE OF WAYS TO ENGAGE STUDENTS IN CRITICAL THINKING**

The following key teaching and learning processes, approaches, and strategies are some of those suggested in this resource. Many of the critical-thinking approaches are intended to encourage students to transform their critical thinking into critical action.

**The action competence learning process**

The action competence learning process described on page 18 of the *Food and Nutrition for Healthy, Confident Kids* guidelines provides a framework for both critical thinking and critical action in the context of food and nutrition. Through this process, students can explore a food-related issue, think about and develop a plan of action to address the issue, implement the plan, and then evaluate its effectiveness and/or their own learning. This process enables students to monitor their own thinking, strengthening their metacognitive and reflective skills.

**Use critical thinking to explore the issue, for example, by discussing with students:**
- What food is available or sold on the premises?
- Are their needs for healthy eating being met?
- What foods are served at celebrations?
- Whose interests are being served?
- Who has the power in a given situation?
- Who is being advantaged?
- Who is not being heard or having their interests served?

**Develop a plan of action – either individual or collective**
Implement the plan of action, designed to overcome the barriers and achieve goals or changes.

**Engage in creative thinking – what alternatives are there?**
Visualise how things could be, including how to engage stakeholders, to help consider what improvements could be made to available food.

**Gather, analyse, and evaluate ideas about the issue**
Determine what is possible and identify what could help students to achieve their goal (enablers) and what could hinder them (barriers).

**Reflect on the outcome(s)**
Evaluate and identify what students have learned from the experience and consider further issues that may arise.

Based on Tasker, 2000, page 10
Co-operative learning

In co-operative learning, students work together, sharing material, taking individual roles, supporting each other, and taking joint responsibility for the outcome of the learning tasks. Co-operative learning activities provide students with opportunities to explore, challenge, and clarify their own thinking and that of others. Students’ knowledge, attitudes, values, and assumptions can be clarified through discussion with their peers. In addition, this approach can help students to affirm existing practices and/or develop new ways of thinking about food and nutrition issues.

Opportunities to work co-operatively in pairs or in small groups have been suggested throughout this resource.

For more information about co-operative learning, link to The Co-operative Learning Center (www.co-operation.org/) or Co-operative Learning (http://edtech.kennesaw.edu/intech/cooperativelearning.htm).

Inquiry learning

Inquiry learning is a student-centred approach in which students actively and carefully analyse a situation or problem by using the different sorts of information available to them. In inquiry learning, students use their own thinking skills to make generalisations or draw conclusions, and so they actively generate knowledge in forms that are meaningful to them.

Focus on Food can be used to support the inquiry learning approach. The three themes and many of the activity headings are presented as questions. Teachers can use these questions as springboards from which students can develop their own subsidiary questions or decide on issues to explore. Students can formulate questions or examine issues independently, co-operatively, or in collaboration with the teacher. This may depend on their skills and prior experience.

For example, the focus question for theme 1 is “What do we know about the food we eat?” Students might develop subsidiary questions, such as, “What is in our food?” This could lead to their looking at food labels and then finding out about the nutrients described on the nutrition information panel or about the food’s country of origin. Alternatively, they may decide to find out more about allergies, genetic modification, or organic foods.

Learning through practical food preparation

Students need opportunities to prepare and taste new foods in order to adapt their eating habits. Practical food preparation gives them opportunities to take critical action to address food-related problems or issues by developing possible solutions. For example, they might find out how to cope when accommodating the needs of someone with a specific allergy.

School facilities and resources will influence the kinds of food preparation experiences that can be offered. For ideas about how to equip an area for working with food in primary schools, see Appleby and Tilley (2004b).

The structured controversy approach

In the structured controversy approach (Johnson and Johnson, 1995), students work in pairs or small groups to examine both sides of an argument or issue before drawing their own conclusions. Controversial statements are presented as a stimulus for discussion, for example, “Bottled water is better than tap water” or “Home-made is better than bought”. Students can examine and present arguments that both support and challenge these statements, and they can explore different perspectives in order to draw their own conclusions.

Teacher questioning

Strategic and purposeful questioning can generate thoughtful discussion and help students to develop the habit of critical thinking. Questions that could encourage students to take a critical perspective when examining a particular food issue include:

• What solutions can you offer?
• Who can suggest a way to …?
• What causes can you identify?
• What new ideas can you suggest?
• What recommendations can you make?
• What needs to change?
• How can you contribute to this change?
• How do you think …?
• What have you noticed …?
The New Zealand Curriculum states:

Assessment for the purpose of improving student learning is best understood as an ongoing process that arises out of the interaction between teaching and learning. It involves the focused and timely gathering, analysis, interpretation, and use of information that can provide evidence of student progress.

The assessment suggestions in this resource are based on learning outcomes that are shared with students and success criteria that are developed with students. The outcomes and criteria are related to authentic assessment tasks that reflect the achievement objectives, values, and key competencies of the curriculum. The suggestions also reflect the following characteristics of assessment that promote learning:

Effective assessment:
- benefits students …
- involves students …
- supports teaching and learning goals …
- is planned and communicated …
- is suited to the purpose …
- is valid and fair …

Thinking critically about food and nutrition allows students to clarify what they already know and to find out what they still need to learn in this context. The learning and assessment activities in this resource involve students in refining, planning, and self-monitoring (or “self-regulating”) their thinking and learning as they work co-operatively to make new links between different ideas or pieces of information.

Opportunities are also provided for students to challenge or affirm their thinking. Such opportunities are important in a world where there is much conflicting information about nutrition. As students discuss, clarify, and reflect on their goals, strategies, and progress, they work towards improving food and nutrition for themselves and the wider community.

The practical contexts in which students work help to develop their capacity for self- and peer assessment and provide opportunities for teacher feedback.

In the key area of food and nutrition, teaching and learning activities, including assessment opportunities, always need to reflect and take into consideration personal and societal influences.
Examples of Teaching and Learning Activities

Three critical-thinking themes form the basis of this resource:

Theme 1: What do we know about the food we eat?
Theme 2: How do we get our food?
Theme 3: What are the benefits of preparing and eating food together?

Focus on Food provides sequential learning experiences around these themes at levels 2, 3, and 4 of the curriculum. The intention is that teachers will select from the suggested teaching and learning activities to develop their own units of learning that will meet the identified needs and interests of their students.

Depending on students’ needs, teaching and learning programmes may focus on a single theme or draw from all three themes in an integrated way. Over time, teachers should provide all students with opportunities to explore all three themes so that their students develop a balanced perspective of the area of food and nutrition.

Teachers of students in years 5–8, working in the context of the New Zealand Curriculum learning area of health and physical education, can focus teaching and learning in a variety of ways to improve learning about nutrition-related issues. Students and teachers could begin by looking at the results of New Zealand research, such as NZ Food NZ Children: Key Results of the 2002 National Children’s Nutrition Survey (Ministry of Health, 2003). They could then move to identifying their own related needs and interests, for example, through student surveys or questionnaires for parents and families.

It is important that teachers design a teaching and learning sequence that allows their students to acquire the background knowledge that will enable them to think critically or take critical action on a specific issue. For this reason, some of the teaching and learning activities are intended to help students develop the knowledge and understanding they need before undertaking activities using critical-thinking approaches.

Structure of the Teaching and Learning Activities

Activities in the learning sequences that foster students’ critical thinking are identified by the heading THINKING CRITICALLY. The heading OBSERVING CRITICAL THINKING AND CRITICAL ACTION alerts teachers to aspects of student learning that they can be looking out for.

The underlying concepts of the health and physical education learning area have been included in the left-hand column, where appropriate, to show aspects of these concepts that might be relevant to particular learning sequences.

The LEARNING OUTCOMES in Focus on Food are derived from the achievement objectives in The New Zealand Curriculum. (See the numbering on the charts that accompany the curriculum document or the online achievement objectives.) Health and Physical Education in the New Zealand Curriculum is in line with this document and can provide more detailed achievement objectives. Schools may use terms other than “learning outcomes”, for example, “learning intentions”. Whatever the term used, it should be clear to your students what learning is to take place.

Teachers and students develop SUCCESS CRITERIA by examining and unpacking the learning outcomes at the beginning of a teaching and learning sequence. It is important that the success criteria are co-constructed because students are better able to monitor their progress and know when they have achieved the outcome when they have had input into the wording. For this reason, Focus on Food includes examples of success criteria only in one activity at each level for theme 1 (on pages 14, 25, and 36).

Assessment opportunities have been identified for some learning outcomes and are included in the left-hand column next to the activity to which they apply. The teaching and learning activity relating to the assessment opportunity is identified by the appropriate achievement objective number in brackets. The term “assessment opportunity” is used in Focus on Food to demonstrate that almost any point in the learning sequence could be an assessment opportunity. Teachers may also choose to use opportunities for assessment that have not been identified in this text.