

Food for Sale!

Health and Physical Education, Mathematics, and Technology, Level 4

The Learning Context:

In this unit students will investigate the lunches being eaten within their school and record their results using statistical presentations. They will identify potential issues, consequences and business opportunities from these findings.

Students will be challenged to plan, make, create a demand for and sell healthy lunches for one day. One of the outcomes they seek for the day is that their business makes a profit. Students will be allocated a loan from the 'classroom bank' (school budget) to fund the production of their lunch products. This loan will need to be re-paid once the healthy lunches have been sold. Students will seek guidance from local businesses who sell healthy foods.

Students will understand and use safe and reliable processes for producing their lunches. They will also examine and apply marketing strategies, using the 4Ps, price, packaging, place and promotion.

This unit of work is split into 3 stages: The first stage involves students investigating the types of lunches or lack of lunches being consumed within their school. During the second stage students will be designing and trialling their healthy food ideas for lunches and preparing for their healthy school lunch day. The third stage of the unit requires students to produce their lunches and sell their product to others in their school community, and evaluate their achievements against success criteria.

Approximately 15 lessons

Achievement Objectives:

HEALTH AND PHYSICAL EDUCATION

Healthy Communities and Environments - D

D1: Societal Attitudes and Values: Investigate and evaluate aspects of the school environment that affect people's well-being and take action to enhance these aspects.

Rights, Responsibilities, and laws; People and the environment: Specify individual responsibilities and take collective action for the care and safety of other people in their school and in the wider community.

TECHNOLOGY CURRICULUM: Level 4:

Technological Practice:

Planning for Practice: Undertake planning that includes reviewing the effectiveness of past actions and resourcing, exploring implications for future actions and accessing of resources, and consideration of stakeholder feedback, to enable the development of an outcome.

Outcome Development and Evaluation: Investigate a context to develop ideas for feasible outcomes. Undertake functional modelling that takes account of stakeholder feedback in order to select and develop the outcome that best addresses the key attributes. Incorporating stakeholder feedback, evaluate the outcome's fitness for purpose in terms of how well it addresses the need or opportunity.

MATHEMATICS: Level 4:

Statistical Investigation

Plan and conduct investigations using the statistical enquiry cycle:

- Determining appropriate variables and data collection methods
- gathering, sorting, and displaying multivariate category, measurement, and time-series data to detect patterns, variations, relationships, and trends
- Comparing distributions visually
- Communicating findings, using appropriate displays.

Enterprising Attributes:

- Generating and using creative ideas and processes.
- Identifying, solving, and preventing problems.
- Monitoring and evaluating.
- Identifying, recruiting, and managing resources.
- Planning and organising.
- Being flexible and dealing with change.
- Collecting, organising, and analysing information.

Teachers to observe and collect evidence of these enterprising attributes in action.

Resource Requirements:

- Kitchen facilities
- Business Planning Journal – see attached sheets for ideas
- Internet sites
 - www.foodtown.co.nz,
 - Google Search: Healthy eating etc
- Recipe books
- Packaging materials such as cellophane, boxes, cardboard
- Input from people involved in selling healthy foods, eg: chefs, bakers, manufacturers, etc
- Trip to a relevant local food outlet to view presentation of products and inquire about health and safety in the food industry.

Learning Outcomes:

Students will be able to:

1. Carry out an investigation using the statistical enquiry cycle to establish whether there are issues and consequences around the lunch choices of students in their school.
2. Report findings using statistical tools.
3. Test out their lunch product on their consumer group getting feedback on product and price.
4. Make and sell lunches to their school community.
5. Describe how they applied Enterprising Attributes to support the tasks in this unit.

Teaching and Learning Sequence

NB: Teachers are encouraged to gauge the prior knowledge of their students before implementing each unit so that they can provide personalised and meaningful learning opportunities. The teaching and learning sequence provided in each unit is to be viewed as a guide only. Teachers will need to adapt this sequence to meet the needs of their students, school and community.

The future focus issues of citizenship, sustainability and enterprise can be explored during this unit. Students will address a real social issue in their community. Students will explore what it is to be innovative and enterprising and apply this to their healthy food enterprise. Given that resources cost, students will learn about economic entrepreneurship and experience the risks. They will endeavour to bring benefits to their community, hopefully changing eating preferences for the future. Healthy citizens and economic entrepreneurship are important factors to ensuring our community is sustainable.

The numbered activities listed below are learning steps rather than lessons. Teachers may choose to combine two or three learning steps into one lesson. Alternatively, they may spread one learning step out over several lessons. This will be largely dependent on students' prior knowledge and their subsequent learning needs.

Getting Started:

Before lunch the teacher actions a quick statistical survey of the items of food that are going to be consumed by class students. The teacher and students will classify food items into healthy, not so healthy, not healthy, and record the frequency of each occurrence. Of course there will be some debate over what 'healthy' means but at this stage the class are persuaded to accept the teacher's recommendations until they draw their own conclusions for how food items should be classified.

The unit and focus for learning is described to the students. Explain that the class will:

- work in groups to establish a small business to supply a healthy lunch for their school community for one day. Their business is to make a small profit
- in order to make a profit the students will have to investigate the range of healthy foods their consumers would want to purchase, the costs and pricing, and formulate a marketing strategy
- use learning from their community as well as learning processes in Health, Technology and Mathematics curricula to make this challenge happen.

From this discussion, lots of questions will arise, eg: where are we going to get the food to make lunches from? Which space will we use to set up our lunch stalls? How much time do we have? Can we use other people's expertise from the community? Can we make things at home? Do we want to sell just food? If we make a profit, who keeps it? Who can we sell the food to? A member of the class begins to record students' ideas of what will make this lunch a success on a wall chart, as well as any decisions/rules made by the class during this discussion.

The class creates a timeline for the unit with key dates for critical actions. Explain that this timeline will be added to as the unit progresses. This process will make the teaching sequence of the unit explicit to the students.

LINKS TO BES Best Evidence Synthesis

5. Quality teachers allow students to solve problems and link learning to real life experiences.

7. Quality teachers align resources, teaching materials and ICT with curriculum goals.

Statistical Inquiry

1. Students conduct an investigation of the foods being consumed in their school to provide the class with valuable information about the type, quality and health status of lunches being consumed. The class discusses and decides on the information they need to gather from their school community, and how they will classify this into healthy or otherwise categories. Students might like to revisit the healthy food pyramid (Google search healthy eating pyramid) to determine a status for food types as well as what constitutes a balanced diet. These findings will help students determine food categories and sort the information gathered.
2. The teacher may show students a range of statistical data that has been collected and organised to give students ideas of how their data may look. The teacher may need to teach aspects of statistical inquiry if students do not have sufficient prior learning in this area.
3. Students discuss which tables and or graphs will best display their information and cross check back to the survey design to see that all necessary information will be gathered.
4. Students gather, sort, and display their information and look for patterns, variations, issues and relationships in their data. They will consider points of 'norm' as well as variance from 'norm' for their data. (Learning Outcome 1)
5. Students invite a person from the 'Heart Foundation' or a dietician from the local medical centre and present their findings using appropriate displays. Students question the guest on their findings and discuss what their guest believes are society's influences on the way we eat. (Learning Outcome 2)

Researching, Planning and Designing:

6. At this stage of the unit students need to determine what foods meet their criteria of healthy lunches. Students reflect on what they already know about healthy foods, and in particular healthy lunches. Students locate websites through Google Search, keying in "healthy foods/lunches etc". Students record the names of sites they would like to investigate further for ideas on potential healthy lunches and healthy lunch check lists, etc. [Or the teacher may have checked through these sites prior to this learning, and guide students to specific sites.]
7. Students are also encouraged to talk to their parents about healthy lunch choices, and the prices of foods that go into these.
8. The teacher explains that all their planning for the lunch production will be recorded in their group's Business Planning Journal which has templates to help them. The teacher also explains the key steps each group will follow, and this flow chart is placed on the wall with completion dates indicated in the time line.
 - Decide what to produce, including some testing of sample product involving statistical analysis.
 - Decide how to produce the quantity required for their market, engaging students in exploring the relationship between the inputs (resources), the transformation process, and outputs (lunches).
 - Decide how to promote, price, and package their lunches, and where they will sell the lunches from (place). Known as the 4Ps. Generating, identifying and assessing opportunities.
9. With teacher guidance (by modelling), students consider the skills and attributes they have and the roles that this project requires of their group. Students match themselves to roles in their group and record their responsibilities and job descriptions. They record their decisions in their group's Business Planning Journal. **Working with others and in teams**

6. Quality teachers know the learning processes in each curriculum area and use the appropriate model; in this case as defined in numeracy.

5. Quality teachers make effective links between different learning areas.

3. Quality teachers make links to students' prior knowledge.

10. Students, in groups, visit a range of local business owners who supply lunches to their community.

Questions to consider are:

- How did you get to set up your business?
- Where do you get the ideas for products to sell?
- Do your customers think about healthy choices?
- Do you test out product ideas?
- Where do you purchase the resources to make things?
- Who gets to keep the money that is taken from customers, i.e. is it all profit, or what are other costs that have to be paid?
- What do you like and dislike about running your own business?
- What are some of the mistakes you have made that we should avoid?
- What rules or laws do you need to follow for hygiene?

11. Students establish a set of success criteria for their business venture and record this in their Business Planning Journal.

12. In their own business groups students brainstorm their lunch ideas for further evaluation. These ideas are recorded in their Business Planning Journal, using the Brainstorm Ideas template. **Collecting, organising and analysing information. Excellence**

13. The teacher demonstrates the process students will work through in their groups to make their lunch product decisions. Students name five favourite lunch ideas for this demonstration of using the Decision Making Grid and record these on the 'choices' line. Students then consider and record all the factors they think will be important in making their business successful (success criteria for their business). The class establish a list of criteria to judge each product choice in their Decision Grid. Criteria will include: Will people want to buy our product? Do we have enough time to make the product and set up our stall? Can we get the resources/ ingredients we need to make our lunches/or provide our lunch services? Can we cover our costs and make a small profit? Students work in their groups to complete their own decision making grid to determine their lunch product. Learning Outcome 3

14. Students make a small quantity of their lunch product for other students in another class to taste test. Students gather feedback about their product (taste, presentation and price) from their peers and make any necessary adaptations. Students may want to carry out a retest of any products they modify.

Creating:

15. Groups will be allocated their loan from the 'classroom bank'. This is recorded in their cashbook.
16. Students identify the ingredients and utensils they will need to produce their lunch product. Students research and compare the prices they would pay for these resources by contacting several supermarkets/grocers. Useful websites for this process include: www.woolworths.co.nz; www.foodtown.co.nz.
17. Students brainstorm the How Question, i.e. decide how to produce the quantity of lunches required for their market. Shelf life of food should be considered here, along with other health and safety issues surrounding good food production. These are ordered into 'steps' the group will follow and 'people responsibilities' are determined and allocated to group members. **Generating and using creative ideas and processes.**

Students identify potential problems and think about how they might solve these. Record these problems in the weekly assessment template. **Identifying, solving, and preventing problems.**

2. Quality teachers facilitate active learning in the classroom and in the community.

9. Quality teachers promote the recognition and use of thinking strategies.

Quality teachers know learning processes in each curriculum area.

Quality teachers create multiple task opportunities by planning a range of activities that engage students; enabling them to complete the learning process, so what is learned is remembered.

18. Students prepare a presentation about their lunch idea using drawings and posters. Presentations to include information about pricing, health benefits, quantity, taste, etc. Students may choose to make their lunch product at home and take photographs of it to share. (Learning Outcome 3) **Monitoring and evaluating.**
19. Students keep their Business Planning Journal up to date and keep an eye on the time line. They will record the resources / ingredients they plan to use, and manage the use of these resources, recording \$ value expenses incurred in their cash book templates. (Learning Outcome 4) **Identifying, recruiting, and managing resources.**
20. Students calculate the cost of their resources (inputs), and the quantity of lunches they intend to sell. Students calculate a price that makes a small profit for their group. They also need to consider price competition from other sellers, but suggest students do not get into a price war and not make a profit. NB: Pricing is part of the marketing strategy of any successful business. (LO 4) **Planning and organising.**
21. Students think about the placement of their stall for selling the healthy lunches, the promotion of their product through posters and sale pitch, and the presentation/packaging of their product. (LO 4) **Planning and organising.**
22. Students check that the Business Planning Journal is kept up to date with business decisions.
23. Invite dietician, local business members, etc, to participate in the lunch day.

Making it happen:

24. Lunch products are prepared and packaged. Stall is set up. Healthy lunch day is held and the products are sold. Teacher or students to take photographs or video of the event for reflection purposes. Students may wish to video the immediate reactions of customers. **Community and participation Integrity respect**
25. Money is counted and recorded in their cash book. (LO 4)

Sharing and Evaluating:

26. Students carry out self assessment and/or group assessment using the success criteria listed at Step 11. Students review the video taken of customers for their responses to their 'healthy food'. Students identify the strengths of their products and areas for improvement. (LO 4)
27. Students share their experiences with each other and present a financial report to the class. Photographs and/or video can be used in this process. Students may consider the following in their presentations:
 - Tasks they did very well as a group
 - Problems that arose in their group, and how they solved these.
 - Their financial statements: Revenue (R) earned from Stall, less Expenses (E) incurred, = Profit (P) made (or Loss) $P = R - E$

Students analyse other groups' experiences and compare these against their own.

10. Quality teachers allow students to participate in goal orientated assessment.

Reflective Questions:

Exploring new knowledge and skills

- What were the learning areas that were incorporated into this project and what did we learn in each of these areas?
- Is there a need for ongoing healthy lunches in our school?
- We transformed resources into lunches ready to sell. What were the resources we used to make this lunch successful? (Time, our human talent, capital resources such as school facilities, and raw materials.)
- What resources did we use and not have to pay for in this project?
- Why is profit crucial for people to create businesses? What is it payment for?
- If people did not create businesses, what would be the consequence on our economic community?
- This unit links knowledge and skills from Social Sciences, Technology and English. How has each of these subjects contributed to your knowledge and how has that knowledge been used in Market Fair?
- How did the combining of knowledge from a range of learning areas lead to your innovation?

Exploring what it is to be innovative and enterprising

- What step/s were you doing when you used each of the Enterprising Attributes? See Template. Break each attribute into its separate words and refine your answers. For example, generating ideas, generating process, identifying problems, etc. Learning Outcome 5
- How could you improve on using the Enterprising Attribute/s for next time? LO 5
- Can you transfer this learning to your other topics? LO 5

Exploring further future focus issues

- As citizens, how can we ensure that healthy eating messages are acted upon? What are the consequences if these messages are not heard?
- What healthy food have you seen that you believe are 'enterprising'? Why?
- What role does economic entrepreneurship play in ensuring our country is sustainable? What role does healthy eating play?

Possible Assessment Activities (Teacher):

Teacher could evaluate students understanding of the steps/processes they were engaged in to make this project happen by asking them to draw a flow diagram that represents the steps undertaken. Teacher could introduce flow diagram symbols to further test their understanding of the type of step being taken.

Teacher could monitor students' progress during the unit as they plan, produce and market their lunches. The teacher could observe how students manage any arising problems and how they use their time. The teacher could also look at the group's Business Planning Journal to monitor their technological thinking.

Handy Hints

- If there is more than one class working at this level, each class can have a different day to sell their healthy lunches.
- Tasters and Starters Activity, Treasure Hunt Quiz - around the school, encourages students to divide up tasks by allocating roles and responsibilities.
- Healthy lunches could be prepared and sold on subsequent days so that students can modify and improve their products.
 - This unit provides a great opportunity for class or school based fundraising.

Assessment Template

We Are in Business – Enterprising Attributes	
Task	Enterprising Attribute/s NB There may be more than one answer!
	Generating and using creative ideas and processes
	Collecting, organising and analysing information
	Identifying, solving and preventing problems
	Planning and organising
	Identifying, recruiting, and managing resources
	Monitoring and evaluating
	Being flexible and dealing with change

We Are In Business

Business Planning Journal

Participating and contributing: Planning & organising

Business name:

Picture of our team

Picture of our lunch stall

Shared success criteria

Relating to Others: Negotiating and influencing

Rules for our business

Our brainstorm of lunch ideas

Thinking: Generating, identify and assessing opportunities

Deciding our best goods/services

Using Language, Symbols and Texts: Collecting, organising and analysing information

Decision Grid							
	Choices						
	Criteria						
							Total

Our job titles and responsibilities

Managing self: Matching personal goals and capabilities to an undertaking

Assessment of unit session		Monitoring and Evaluating		Date:
Stall Name: Things to do every session J K L Review our performance Update our Business Planning Journal Check against our time line	Actions for this session	Problems arising	Actions for next week	
PMI Assessment on this session's work				
Positives	Negatives	Interesting		

Thinking: Monitoring and evaluating

Description of our lunches including
ingredients to be used

Resources required other than ingredients
to make and sell the lunches

Participating and contributing: Identifying, recruiting and managing resources

Our actions and time line

Participating and contributing: Identifying, recruiting and managing resources

Market Day Marketing Plan: The 4 Ps

Promotion:

Explain how you will advertise your healthy food lunches.

Place:

Explain where and how you will set up your lunch stall.

Packaging:

Explain how you will package your goods.

Price:

Explain how you set your price and what price you are selling at.

Pricing our products

Using Language, Symbols and Texts: Collecting, organising and analysing information