Teacher's Guide

Welcome to the Info & Activity Sheets

Introduction

The New Zealand Bread and Flour Information Centre guide to Milling and Baking is a unique collection of information and educational activities about wheat, flour and other cereal products. Each Information Sheet contains detail about a particular topic and most come with a separate Activity Sheet which is related to that topic. The Activity Sheets contain five or more activities which are suitable for students of all ages. Feel free to photocopy the activity sheets to use in your classroom.

The sheets have been developed by the New Zealand Institute for Crop & Food Research Limited and are funded by the NZ Association of Bakers, NZ Flour Millers Association and the Ministry of Research, Science and Technology. The sheets were written by Food Technologists, Virginia Humphrey-Taylor and Annette Campbell, in 1989 and have since been updated by teachers and science technicians, Shona Voice, Lee Francis and Philippa Wadsworth.

For further information, or inquiries about other cereals and cereal products, call Virginia Humphrey-Taylor at the New Zealand Institute for Crop & Food Research Limited, Ph. (03) 325 6400, fax. (03) 325 2704.

Using the Activity Sheets

The Activity Sheets can be photocopied for classroom use. Each sheet has a variety of hands-on exercises. To help you in choosing, we have labelled each exercise with one or two icons. These are:

for Recipes.

for Experiments that require variables to be controlled and manipulated.

for Questions that could be asked to develop discussion, debate and research.

for Activities that are fun and informative. These are excellent starters to a unit or as a one-off activity on a rainy afternoon.

Teachers can:

-use an activity as a unit starter to stimulate interest and discussion;

-choose a series of activities for a Learning Centre;

-create an activity based programme;

-use the activities for self-, peer-, and group assessment.

Students can:

-present their finished activity to a group, the class, other classes, at school assemblies;

-write about and illustrate their activity;

-formulate questions and predictions for an activity;

-define key ideas after completing an activity;

-survey opinions of other completed activities;

-rate activities according to how challenging they are, the time required on each and /or the number of key ideas the activity demonstrates;

-record further questions they have after completing an activity.

Activity Objectives

In planning your classroom or syndicate programme, we realise it is easier if you can see where your resources fit into the New Zealand Curriculum Framework. The Guide to Activity Objectives will give you an overview of the objectives which can be met through the Activity Sheets. Each Activity Sheet will contain at least one activity which will fulfill the particular objective. Science and Technology are the curriculum areas in focus although there are activities which will fit into English, Maths, Social Studies, Art, History, Horticulture and Agriculture.

From the Science Curriculum we have used the Achievement Aims from each relevant World. From the Technology Curriculum, we have used the Achievement Aims as well as the basic objectives from Strands A, B and C. This gives you room to choose the appropriate level for your class under each Aim.

Using the Information Sheets

The Information Sheets are easy to read and follow. Most have a brief introduction that informs the reader of the information covered. Each sheet can be used in isolation or in conjunction with others. A number of sheets refer to other sheets in the set. This link is important in developing a comprehensive understanding of the topic.

Teachers can use the Information Sheets:

-by reading the sheets for their own background information;

-by reading relevant paragraphs to the class;

-as reading material during guided, reciprocal and/or uninterrupted sustained silent reading;

-as a basis for a Learning Centre;

-for children to listen to at a listening post;

-for cloze activities, word puzzles, quizzes and board games.

Students can use the Information Sheets:

-when conducting their own investigation;

-when thinking of ideas for Science Fairs;

-when writing a television or radio documentary;

-to check their predictions and results after completing an activity;

-for display purposes;

-to formulate questions to ask a guest speaker on baking and/or milling;

-to take notes and summarise information in their own words;

-to make a list of key words for further research.

The Set

The set consists of 34 Information and 21 Activity Sheets. There are four main categories: Wheat and Milling, Bread, Pasta, Pastries, Biscuits and Cakes.

		Wheat and Milling
i	*a*	History of wheat, flour and bread production
i	*a*	History of wheat growing and milling in New Zealand
i	*a*	Milling of wheat in New Zealand
i		Nutritional aspects of flour
i		The wheat grain
i	*a*	The wheat plant
i	*a*	Types of flour and their uses
i	*a*	Types of wheat in New Zealand
i	*a*	Wheat and flour use
		Bread
i		Bagels
i		Bread and food regulations
i	*a*	Bread recipe
i		Enzymes
i	*a*	Fibre - Its role in the diet
i	*a*	How bread is made in New Zealand
i	*a*	Let's make some neat food with bread
i		Nutritional aspects of bread - I
i		Nutritional aspects of bread - II
i		Nutritional aspects of bread - III
	a	Nutrition
i	*a*	Sandwich suggestions
i	*a*	Starch
i	*a*	Storing bread and sandwiches
i	*a*	The science behind bread making
i		Uses of left over bread
i	*a*	Variety breads
i		Variety bread recipes
i	*a*	What do the ingredient labels on bread mean?
i	*a*	White vs brown breads
i		Why eat bread?
i	*a*	Yeast
		Pasta
i		How pasta is made
i		History of pasta
		Pastries, Biscuits and Cakes
i	*a*	Basic flour recipes
i	*a*	Biscuit making
i		History of cake making
i	*a*	Pastry - the different types of pastry
i		Successful cake making - I
i		Successful cake making - II

KEY:

i Information Sheets *a* Activity Sheets

Science in the New Zealand Curriculum

Making Sense of the Living World

In their study of the living world, students will use their developing scientific knowledge, skills and attitudes to:

1. gain an understanding of an order and pattern in the diversity of living organisms, including the special characteristics of New Zealand plants and animals;

2. investigate and understand relationships between structure and function in living organisms;

3. investigate and understand how organisms grow, reproduce and change over generations;

4. investigate local ecosystems and understand the interdependence of living organisms, including humans, and their relationship with their physical environment.

Making Sense of the Physical World

In their study of the physical world, students will use their developing scientific knowledge, skills and attitudes to:

1. gain an understanding of the nature of physical phenomenon from practical investigation and consideration of scientific models;

2. establish scientific concepts of energy and investigate ways in which energy changes can be put to use;

3. explore and establish trends, relationships, and patterns involving physical phenomena;

4. explain how physical phenomena are used in everyday technology and how such technology affects people and their environment.

Making Sense of the Material World

In their study of the material world, students will use their developing scientific knowledge, skills and attitudes to:

1. investigate the nature and properties of substances, identify patterns in these properties, and understand why chemists group substances in the ways they do;

2. apply their knowledge of the properties of substances to the safe and appropriate use of these in the home, in industry and in the environment;

3. investigate reactions, and applications of these, in chemical processes;

4. make informed decisions about the inter-relationship of chemical substances and processes, with technology, people and the environment.

Technology in the New Zealand Curriculum

A) Technological Knowledge and Understanding

Within a range of technological areas and contexts, students should develop an understanding of:

1. the use and operation of technologies;

2. technological principals and systems;

3. the nature of technological practice;

4. strategies for the communication, promotion, and evaluation of technological ideas and outcomes.

B) Technological Capability

Within a range of technological areas and contexts, students should produce technological solutions. They will:

5. identify needs and opportunities to provide information for possible technological practice;

6. with reference to identified needs and opportunities,

   a. generate possible options and strategies, and select, develop, and adapt appropriate solutions;

   b. produce technological outcomes to agreed quality standards, managing time, and using human and physical resources skilfully, safely, and effectively;

   c. present and promote ideas, strategies, and outcomes throughout technological practice;

   d. evaluate designs, strategies, and outcomes throughout technological practice in relation to their own activities and those of others.

C) Technology and Society

Within a range of technological areas and contexts, students should:

7. develop awareness and understanding of the ways the beliefs, values and ethics of individuals and groups:

   - promote or constrain technological development;
   - influence attitudes towards technological development;

8. develop awareness and understanding of the impacts of technology on society and the environment:

   - in the past, present and possible future;
   - in the local, national, and international settings.