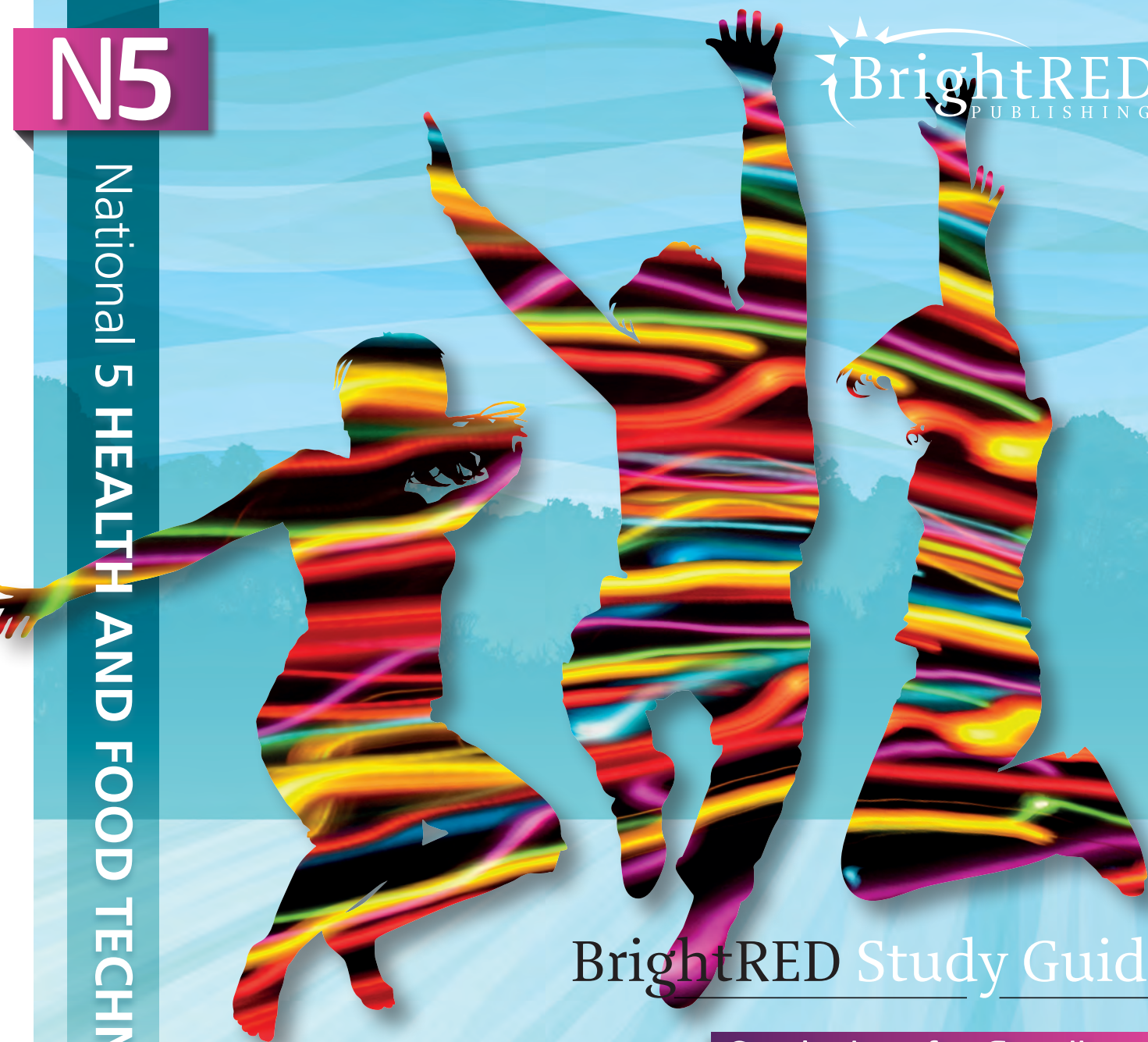


N5

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PUBLISHING

National 5 HEALTH AND FOOD TECHNOLOGY



BrightRED Study Guide

Curriculum for Excellence

N5

HEALTH AND FOOD TECHNOLOGY



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BRIGHTRED STUDY GUIDE: NATIONAL 5 HEALTH AND FOOD TECHNOLOGY

INTRODUCING NATIONAL 5 HEALTH AND FOOD TECHNOLOGY

Health and Food Technology sits within the Health and Wellbeing curriculum area of Curriculum for Excellence.

Health and Food Technology focuses on the physical, chemical, nutritional, biological and sensory properties of food. The subject provides you with opportunities to study the relationship between health, nutrition, functional properties of food, lifestyle choices and consumer issues. It develops your awareness of how food choices can have a positive effect on your own health, and it will equip you with skills and knowledge that will enable you to become a lifelong informed food consumer. You're encouraged to be creative in preparing and producing food and in evaluating finished products.

This book focuses on the core content of the National 5 syllabus for Health and Food Technology. There are three mandatory units: 'Food for Health', 'Food Product Development' and 'Contemporary Food Issues'. In addition, there is a section on the course assessment, which must be passed to gain the course award.

EXTERNAL ASSESSMENT

At the end of the course, you will be assessed externally on two components:

Component 1 – assignment – 50% of total mark

Component 2 – question paper – 50% of total mark.

The purpose of the course assessment is to assess added value. It challenges you to show depth of knowledge and skills, and it allows you to apply the skills, knowledge and understanding you've learned during the course.

Assignment

The course assignment is a problem-solving, product-development-type exercise that involves you using your skills and knowledge to investigate a food or consumer issue. It has four sections:

- | | |
|---------------------|----------|
| (1) Planning | 20 marks |
| (2) The Product | 12 marks |
| (3) Product Testing | 10 marks |
| (4) Reflection | 8 marks. |

The assignment will be set and marked by the Scottish Qualifications Authority (SQA) and will be undertaken during class time under some supervision and control.

Question paper

The purpose of the question paper is to assess your ability to apply the knowledge and understanding gained from studying the three units, via answering a series of exam questions.

There will be five questions in the paper, each worth 10 marks. The time allocated is 1 hour and 30 minutes to complete the paper. It will be marked externally by the SQA.

The questions will sample across the whole course, including:

- Nutrients: functions and sources
- Current dietary advice and links to health, including dietary diseases

contd

- Specific dietary needs of individuals and specific groups of people
- Factors affecting consumers' choice of food
- Food labelling
- Consumer organisations
- Food product development
- Functional properties of food
- Contemporary food issues and technological developments in food production.

INTERNAL ASSESSMENT

During the course, you will be assessed on a range of skills in the context of the course content. The wide range of skills tested includes:

- Knowledge and understanding of the relationships between health, food and nutrition
- Knowledge of current dietary advice and the implications this has for long-term health and wellbeing
- Knowledge and understanding of the food product development process and the effects the functional properties of nutrients have on processing/manufacturing food products
- Make informed food and consumer choices
- Develop organisational skills to make food products that meet specific needs, using safe and hygienic working practices.

COURSE CONTENT

The course has three mandatory units: 'Food for Health', 'Food Product Development' and 'Contemporary Food Issues'.

Food for Health

The aim of this unit is to build up core knowledge of nutrition that will allow you to explain the relationship between food, health and nutrition. By exploring the dietary needs of individuals at various stages of life, this knowledge can be put into practice by the development and evaluation of food products that aim to meet individual needs.

Food Product Development

The aim of this unit is to develop knowledge and understanding of the functional properties of ingredients found in food and of their uses in developing new food products. You will be given the opportunity to work through a range of different product development briefs that will allow you to produce new food products that meet specified needs.

Contemporary Food Issues

The aim of this unit is to develop an in-depth understanding of a range of factors that affect consumers' food choices. You will consider technological developments in food manufacturing and organisations which protect consumer interests. You will also develop knowledge and understanding of food packaging, labelling and how these help consumers to make informed food choices.

This book has been developed using an interactive, contemporary approach which acknowledges the fast-paced technological society in which we are living. The broad range of activities and visual appeal throughout the book has been devised to offer lots of choice for both you and your teacher – appealing to a range of abilities and learning styles for classes while also being an effective tool for independent study.



ONLINE

This book is supported by the BrightRED Digital Zone. Visit www.brightredbooks.net/N5HFT and log on to unlock a world of tests, games, videos and more!

FOOD FOR HEALTH

SPECIFIC DIETARY NEEDS OF DIFFERENT GROUPS 1



CHILDREN

We use the word ‘children’ to describe boys and girls between the ages of 1 and 10. This is a time of rapid growth in a child’s life, and so the requirements for all the major nutrients are high.

During this time, eating habits are formed, and so children should be encouraged to have a healthy, varied diet with low amounts of refined sugar and salt. Fat intake, especially that of saturated fat, should be monitored carefully.

The most important nutrients needed at this stage are:

| Nutrient | Dietary need |
|--------------|--|
| Protein | This is a time of rapid growth and development, therefore protein is needed for growth and maintenance of all cells. Children often injure themselves, and their bodies need protein to repair cuts and wounds. |
| Carbohydrate | Total complex carbohydrates should be the main source of energy for children. Children are usually very energetic – boys more so than girls. |
| Calcium | At this stage, bones and teeth are developing and growing rapidly, and the need for calcium increases with age. |
| Iron | The volume of blood in the body increases with age and size, therefore a good supply of iron is needed to prevent anaemia. Children who are more active will need a greater intake of iron to ensure that they do not tire easily. |
| Vitamin C | As children are active, they need a good source of vitamin C to help heal wounds and to help absorb iron to prevent tiredness and anaemia. |

DON'T FORGET +

Young children often need encouragement to eat healthily, so meals should be small with a variety of flavours, colours and textures.

ONLINE →

For more, read the link ‘Life stages’ at www.brightredbooks.net/N5HFT

DON'T FORGET +

Across the majority of nutrient groups, boys have a greater nutrient requirement than girls.



ADOLESCENTS

An adolescent is generally a person between the ages of 11 and 18. This is another period of rapid growth, sometimes called the ‘growth spurt’, in life – so, again, the intake of the main nutrients needs to increase.

| Nutrient | Dietary need |
|--------------|--|
| Protein | As this is a period of rapid growth, protein is needed for the growth, repair and maintenance of cells. Many teenagers are very active, therefore will need protein for repair of injuries. |
| Carbohydrate | Energy needs vary depending upon how active the adolescent is. Energy needs increase as the body frame grows – boys generally need more energy than girls. |
| Calcium | During adolescence, bone development is at its peak. |
| Iron | As the body frame grows, so does the volume of blood, therefore iron is required to prevent anaemia. The onset of menstruation for teenage girls means that they will need to increase iron intake to make up for the loss of blood. |
| Vitamin C | This is important to ensure optimum iron absorption to prevent anaemia. |

Many adolescents do not eat a balanced diet. They tend to rely on high-fat, high-salt snacks and fast foods which are energy-dense but low in nutritive value.

ADULTS

At this point in life, body growth has stopped. Many people tend to become less active, and so energy and other nutrient requirements become less; however, due to certain special needs and beliefs, nutrient requirements vary across the adult population.

The majority of healthy adults will require the following:

| Nutrient | Dietary need |
|--------------|---|
| Protein | Body cells are continually repairing and replacing. |
| Carbohydrate | As activity generally decreases with age, less energy is required; however, total complex carbohydrate is better than fat. Men require more energy than women, as they tend to be more active than women and have larger body frames. |
| Calcium | At this stage, bone maintenance is important to help prevent onset of osteoporosis in later life. |
| Iron | Women in particular still need a good intake of iron to compensate for blood loss through menstruation until onset of menopause. |



THINGS TO DO AND THINK ABOUT

- 1 Getting involved in food preparation may help to encourage children to eat more healthily.

Look at the information on this web page, and watch the video ‘Cooking with Kids’: www.brightredbooks.net/N5HFT

Devise a leaflet for parents, including a recipe for your own pizza, to encourage them to safely allow children to help cook in the home. Or you could consider filming your own ‘Cooking with Kids’ video.

- 2 Create a healthy dish suitable for adolescents to have as a snack.
- 3 Look at the dietary reference values for adolescents to find out which nutrients are same for both sexes.

DON'T FORGET +

The dietary targets recommend that adults should reduce the amounts of fat, sugar and saturated fat they eat.

ONLINE TEST ✓

Take the ‘Special Dietary Needs for Different Groups: Children, Adolescents and Adults’ test online at www.brightredbooks.net/N5HFT

CONTEMPORARY FOOD ISSUES

ISSUES AFFECTING CONSUMERS' CHOICE OF FOOD 2

Now let's have a look at how the issues of food/air miles, food advertising/labelling and food aid/world hunger can affect consumers' choice of food.



FOOD/AIR MILES

Food miles means the distance that food travels from where it is grown to where it is bought – sometimes referred to as 'from field to plate'. This is an environmental concern to some consumers because of the CO₂ emissions from transport.

Carbon footprint for food is the total amount of CO₂ and other greenhouse gases emitted over the life cycle of a product.

Key points:

- Some consumers don't mind how far a food has travelled as long as they can choose what they want throughout the year.
- Some consumers question if food miles really matter, as you can use at least as much energy heating a greenhouse to grow produce in the UK as you can growing it outside in a warm climate and flying it to the UK.
- To some consumers, climate change is an important issue and they would be looking to choose foods that have a low carbon footprint.
- Supporting local suppliers/farmers by buying locally grown foods is something some consumers will do in order to reduce the environmental impact of importing goods.
- Depending upon how far the food has travelled, and how long it takes to reach the consumer, it may have lost some nutritional content, which will put some consumers off buying the food.

FOOD ADVERTISING/LABELLING

Food advertising has, over the years, been accused of increasing UK obesity rates due to the number of adverts for fast food which is high in fat/sugar/salt, influencing consumers to want to buy such products.

In order to protect consumers, an EU regulation came into force in July 2007 controlling what advertisers could say about health and nutritional claims relating to food products.

TV adverts

Advertisements for unhealthy foods are not allowed to be shown on children's TV channels, with the aim of trying to prevent children's food choices from being influenced by ads for high-fat/sugar/salt foods they see on TV.



contd

Some advertisers are trying to get around the TV ban by using the internet. For example, Cheestrings by Kerry Foods falls foul of the TV ban because each portion contains a third more salt than the average bag of crisps, but their website targets children with fun games that encourage them to become familiar with, and want to have, the product. What do you think about this practice? Discuss with your classmates.



ONLINE

Check out the Cheestrings link at www.brightredbooks.net/N5HFT

FOOD AID/WORLD HUNGER

There are 870 million **undernourished** people in the world today. That means one in eight people do not get enough food to be healthy and lead an active life.

Key points:

- Some consumers may decide to buy and donate food to give to food-aid initiatives, such as the UN World Food Programme.
- Consumers may opt to boycott food from certain organisations or countries if they feel that these act in an unethical way.
- People living in poverty may have access to 'surplus' food that is distributed by charities. Such food may be close to, or on, its use-by date but will be a source of nutrition that would otherwise be unavailable to them.
- More children now than ever access breakfast clubs in school as a means of getting food to start their day – food that they otherwise would not have got at home.



DON'T FORGET

Remember to check pages 80–83 to get further in-depth information on how information on food labels helps consumers to make informed choices.



THINGS TO DO AND THINK ABOUT

- 1 Undertake internet research to investigate the range of fruit and vegetables on offer. Look at where they come from. You could plot these on a map to highlight the distance they have travelled to get to Scotland.
- 2 It's not just people in Africa who suffer from malnutrition – people in Scotland may not be getting the nutrients they need from their diet to keep them healthy. Why might this be the case? Undertake some research into the links between junk-food diets and malnutrition.



ONLINE

The hunger map link will let you see a map showing the areas of the world at greatest risk of suffering from hunger: www.brightredbooks.net/N5HFT



ONLINE TEST

How well do you know about current issues that affect consumers' food choices? Test yourself online at www.brightredbooks.net/N5HFT

VIDEO LINK



Watch the video clip on food miles and wastage in the UK: www.brightredbooks.net/N5HFT. Think about the list of the top foods it mentions we waste. Choose one of these foods, and develop a dish containing this ingredient.

VIDEO LINK



Head to the BrightRED Digital Zone to watch the TV ad from the 1970s that was voted one of the best of all time. Its aim was to persuade consumers to buy this convenience food, as opposed to preparing fresh potato. Investigate the ingredients and nutritional value of Smash versus fresh potato. Produce a potato-based pie using both, and undertake sensory evaluation. Reflect on your findings.

COURSE ASSESSMENT ASSIGNMENT

THE ASSIGNMENT: AN OVERVIEW

The course assignment requires you to use the skills you have learned throughout the course to investigate a food or consumer issue. Through using a problem-solving approach, you will develop a suitable food product to meet the needs of the issue.

The assignment has four sections:

| | |
|---------------------|----------|
| (1) Planning | 20 marks |
| (2) The product | 12 marks |
| (3) Product testing | 10 marks |
| (4) Reflection | 8 marks. |

SQA will announce the food or consumer issue that you will be required to investigate. Examples of possible issues that you might have to investigate would be:

Your local health board has reported an increase in the number of young people attending their diabetic clinic. The dietician who runs the clinic has asked you to develop a breakfast bar that would be suitable for diabetics.

A local supermarket is planning a testing session to encourage customers to try their range of Fairtrade products. You have been asked to develop a dessert that incorporates Fairtrade ingredient(s).

SECTION 1: PLANNING

The first thing you are going to have to do is to identify the key issues from the scenario, followed by explaining the significance of the key issues to the scenario. For example, using the first issue above, you might identify the key issues as: 1. Diabetes and 2. Breakfast bar.



contd

For your explanations, you might note:

- 1 As there has been an increase in the number of young people with diabetes, I will need to find out more about the dietary needs of people suffering from diabetes so that I can take this into account when developing my product.
- 2 I have been asked to develop a breakfast bar, so it needs to: (1) be liked by those who will be eating it, (2) be suitable to eat on the go, and (3) provide energy to start the day.

The next stage is to undertake some **research** to obtain more information relating to the key points you have highlighted.

| Key Issue 1. | Diabetes |
|---|---|
| What do I want to find out? i.e. the aim of my investigation is ... | to find out nutritional factors that need to be taken into consideration for someone with diabetes. |
| How am I going to do this? i.e. my method of investigation is ... | I am going to search for information using the internet. |
| Source of information: | www.diabetes.co.uk or www.diabetes.org.uk |
| What I found out: | people suffering from diabetes should limit their intake of sugar and increase the amount of fruit and vegetables they eat. Some artificial sweeteners do not affect blood glucose levels so could be included in a diabetic's diet, but not too much as they can have a laxative effect if too many are eaten. |

| Key Issue 2. | Breakfast bars |
|---|--|
| What do I want to find out? i.e. the aim of my investigation is ... | to find out young people's likes and dislikes when it comes to breakfast bars. |
| How am I going to do this? i.e. my method of investigation is ... | a questionnaire to 20 young people. |
| Source of information: | www.surveymonkey.com |
| What I found out: | 18/20 wanted breakfast bars to contain oats. The preferred fruits were apple 15/20 and raspberry 16/20, and least liked was raisins. One person who completed my questionnaire had a nut allergy so would not eat a bar containing nuts. |



From this, you have to generate some ideas for a food product.



Now you have to decide which is the most appropriate product and give a detailed justification for your choice, before providing a detailed and accurate recipe for your new product.

+ DON'T FORGET

To get full marks here, two key issues must be identified correctly and the importance of these key issues fully explained.

+ DON'T FORGET

You have to use two different research techniques and two different sources. To help you here, refer to the 'Undertaking investigations' section earlier in the book, on pages 44–47.

+ DON'T FORGET

You need to provide at least three relevant ideas based on the results of research, all of which are accompanied by comments as to why they are or are not suitable.

+ DON'T FORGET

Your product can be based upon an existing recipe, but it must be adapted in some way to meet the aim of developing a new product.

BrightRED Study Guides

Curriculum for Excellence

N5

HEALTH AND FOOD TECHNOLOGY

Janice Rodger and Pam Thomas

This BrightRED Study Guide is just the thing you need to tackle your course and gain the exam skills essential to succeed at National 5 Health and Food Technology. Written by trusted subject experts and experienced Health and Food Technology teachers Janice Rodger and Pam Thomas, this book is packed with brilliant examples, tasks and advice. It is the ultimate companion to your studies.

- ▶ **Contains all of the essential course information**, arranged in easily digestible topics.
- ▶ **Designed in full colour, highly illustrated, accessible and engaging** to make sure all that study sticks!
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- ▶ **Things to do and think about** sections at the end of each topic allow for further practice and research.
- ▶ **Worked examples** show you how to approach a range of concepts and questions.
- ▶ **A glossary of key terms** helps you really learn and revise important course concepts.

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