

## Leaving Certificate

# Home Economics

## Food Science and Nutrition

Please see *Teachers' Notes* for explanations, additional activities, and tips and suggestions.

<b>Learning Support</b>	Vocabulary, key terms working with text and writing text	Pages 3-9, 11-13
<b>Language Support</b>	Vocabulary, key terms, grammar, working with text and writing text	Pages 3-13
<b>Subject class</b>	Key vocabulary	Pages 3-9
<b>Learning focus</b>	Using Home Economics textbooks and accessing curriculum content and learning activities.	
<b>Levels for Language Support students</b>	Students' English-language skills should be developed to <b>Level B1</b> during funded Language Support. Mainstream subject learning will require the development of skills at <b>Level B2</b> if students are to cope with public examinations.	
<b>Acknowledgement</b>	The <i>English Language Support Programme</i> gratefully acknowledges the permission of Gill and Macmillan to reproduce excerpts from <i>Get Living!</i> Complete Leaving Certificate Home Economics by Edel Conway and Lorna Freeborn.	
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## Using this unit

### Learning support, language support and mainstream subject class

The sections *Focus on vocabulary*, *Focus on reading* and *Focus on writing* are suitable for **Learning Support**.

The sections *Activating students' knowledge*, *Focus on vocabulary*, and *Focus on grammar* have been designed, in particular, for **Language Support** classes.

*Focus on vocabulary*, *Focus on reading* and *Focus on writing* are suitable for use in **Learning Support**, **Language Support** and **subject classes**.

### Answer Key

Answers are provided at the end of the unit for all activities except those based on free writing.

### Textbooks

This unit focuses on the topic, Food Studies (in particular Food Science and Nutrition) from the Leaving Certificate Home Economics curriculum. Students will need to use their textbooks if they are to gain the most benefit from the activities.

### Learning Record

The Learning Record is intended to help students monitor their progress. This can be downloaded or printed from the website in the section *Advising Students and Record of Learning for the Leaving Certificate*. A copy of the Learning Record should be distributed to each student for each unit studied.

Students should:

1. Write the subject and topic on the record.
2. Tick off/date the different statements as they complete activities.
3. Keep the record in their files along with the work produced for this unit.
4. Use this material to support mainstream subject learning.

### Symbols

Symbols are used throughout the unit to encourage students to develop their own learning and support materials.



prompts students to file the sheet when they have completed the activity. This is used for activities which can be used as a reference in the future e.g. for subject classroom, revision, homework etc.



prompts students to add vocabulary, definitions, or examples of vocabulary in use to their own personal glossary for the topic. A personal glossary makes study and revision more efficient.

## Keywords

The list of keywords for this unit is as follows:

### Nouns

absorption	fatigue	oxygen
acid	fibre	pectin
adolescents	foods	peptide
adults	formation	phosphorus
alkalis	forms	polypeptide
allowances	fortified	polysaccharide
amino	found	polyunsaturated
anaemia	fructose	potassium
antioxidant	fruit	pregnancy
appetite	functions	properties
atoms	galactose	protein
beta	gelatinisation	pulses
blood	germ	rancidity
body	glucose	RDA
bonds	glycerol	removal
bones	glycogen	retinol
	grains	rickets
calcium	growth	saturation
carbohydrates	heat	sensitive
carbon	hormones	skin
carboxyl	hydrogen	source
carotene	hydrolysis	starch
cells	infections	stomach
cellulose	intake	structure
chains	intestine	teeth
cholesterol	iron	thirst
classification	lactation	thyroid
collagen	levels	tiredness
component	lipids	tissue
composition	lipoproteins	utilisation
condensation	liver	vitamins
converts	loss	water
cramps	maltose	weakness
dairy	membranes	wheat
deficiency	metabolism	yeast
dehydration	mg	
diet	molecule	<b>Nouns (food/drink)</b>
digestion	monosaccharides	broccoli
disaccharides	muscle	cakes
disulphide	niacin	cereals
emulsions	nutritional	eggs
energy	oils	fish
enzymes	osteomalacia	margarine
fat	overload	meat

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
LC Home Economics: Food Science and Nutrition

offal  
potatoes  
poultry  
sugar  
vegetable

**Verbs**

absorb  
assist  
clot  
convert  
digest  
eat  
effect  
form  
fortify  
found  
function

grow  
heal  
heat  
overload  
prevent  
process  
regulate  
repair  
store

**Adjectives**

anaemic  
biological  
dietary  
dry  
elemental  
essential  
excess

fatty  
fortified  
functioning  
green  
healthy  
inhibited  
insoluble  
leafy  
nutritional  
polyunsaturated  
processed  
recommended  
saturated  
sensitive  
soluble  
stable  
unaffected  
unsaturated

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
LC Home Economics: Food Science and Nutrition

Vocabulary file (1) for the topic  
**Food Science and Nutrition**

<b>Word</b>	<b>Meaning</b>	<b>Page(s) in my textbook</b>	<b>Note</b>
nutrition			
protein			
amino acids			
carbohydrates			
glucose			
starch			
digestion			
saturates			



Vocabulary file (2) for the topic  
**Food Science and Nutrition**

Word	Meaning	Page(s) in my textbook	Note
vitamins			
deficiency			
minerals			
iron			
requirements			
dehydration			
fatigue			
recommended			
functions			



## Introduction

### Activating students' existing knowledge

Use a spidergram to activate students' ideas and knowledge on the key points in this chapter. See **Teachers' Notes** for suggestions.

Possible key terms for the spidergram:

Food

My Favourite Food

Healthy Eating

- Invite students to provide key words in their own languages.
- Encourage dictionary use.
- Encourage students to organise their vocabulary into relevant categories (e.g. meaning, nouns, keywords, verbs etc.).



Students should record vocabulary and terms from the spidergram in their personal dictionaries.

Language Level: B1  
Individual / pair

## Focus on vocabulary

### 1. Missing words

The following paragraph is taken from your textbooks, (from an introduction to nutrition), but some key words are missing. First, check you understand the meanings of the key words in the box below, then read the sentences and fill in the gaps.

*Food is a basic requirement for living. Without food a person would not survive. The main \_\_\_\_\_ of food are:*

- *To supply heat and \_\_\_\_\_;*
- *For \_\_\_\_\_ and repair of body cells*
- *To protect the body from infection and \_\_\_\_\_.*

*Most foods contain several different \_\_\_\_\_, for example, milk; whereas others contain only one nutrient. Oil only contains fat (also called lipid). Foods which contain several different nutrients are considered to be \_\_\_\_\_, milk and meat are examples of these.*

nutritious    disease    functions    nutrients    energy    growth

### 2. Vocabulary in use

Write a short sentence using each of the following words/phrases. Check your text book or dictionary if you need help.

nutrients \_\_\_\_\_

food choices \_\_\_\_\_

protein \_\_\_\_\_

carbohydrates \_\_\_\_\_

vitamins \_\_\_\_\_





### 3. Matching

Match each expression in Column A with a definition in Column B. Draw a line between the matching expressions.

Column A	Column B
Recommended Dietary Allowance (RDA)	the rate at which a person burns up energy
malnutrition	the total number of elements in the molecule
metabolic rate	an imbalance of nutrients in the diet (this may lead to under nutrition or over nutrition)
enzymes	the function that a nutrient fulfils in the body
chemical formula	the amount of a nutrient that meets the daily needs of a healthy person
biological function	chemical substances that speed up and/or control reactions in the human body

### 4. Key phrases in use

The sentences below are all from your text books, but the key phrases from exercise 3 are missing. Select the correct ones.

- The \_\_\_\_\_ for protein is based on grams per kilogram of bodyweight.
- One of the \_\_\_\_\_ of protein is that it is necessary for growth and repair of all body cells.
- The \_\_\_\_\_ for water is H<sub>2</sub>O.
- The basal \_\_\_\_\_ is the energy required to live, such as the heartbeat, breathing.
- All \_\_\_\_\_ need correct temperatures and pH levels in order to function correctly and efficiently.
- Obesity and anaemia are two possible results of \_\_\_\_\_.



Language Level: B1 Individual / pair
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**Focus on grammar**

**5. Nouns to adjectives**

Below are ten nouns commonly used when studying food science and nutrition. Change the nouns to adjectives, then put each adjective into a phrase or sentence. This phrase may be written by you, or taken from your textbook. Doing this exercise will help you to remember these words and how to use them. You can use your textbook to help you. The first one is done for you.

(Noun: a word that refers to a person, place or quality. For example book, beauty.  
 Adjective: a word that describes a noun. For example - big, boring).

Noun	Adjective	Sample sentence
anaemia	anaemic	She became anaemic because her body couldn't absorb iron.
biology		
diet		
fat		
function		
health		
leaf		
nutrient		
recommend		
saturate		



Language Level: B1 / B2  
Individual / pair

## Focus on reading

### 6. Reading to extract the main ideas

- You are going to read a text about eating patterns (*when/how often you eat*). Before you read think about what influences (*affects*) **your** eating patterns.
- If you are working with another student, share your ideas.
- This extract from our textbook has six paragraphs; however we have taken the six headings away.
- Read the six headings in the boxes, and then quickly read the paragraphs to get the main idea, until you decide where each heading belongs.

Convenience foods

Family size

The working/school day

Leisure activities

Number of adults working

Culture

### Eating patterns are influenced by:

1. \_\_\_\_\_: This depends on:
  - The type of work done and the working pattern, for example, whether it is shift work or not.
  - The breaks allowed during the working or school day and at what times the breaks are.
  - The facilities available at work/school, i.e. whether there is a canteen, the use of a microwave, or simply nothing.
2. \_\_\_\_\_: Whether both parents in a family are working, one parent is working outside the home, or if it is a single parent family.
3. \_\_\_\_\_: The more a person is involved with other activities the less time there is to spend cooking.
4. \_\_\_\_\_: There is an increase in the use of convenience foods in recent years and eating out has become extremely popular.
5. \_\_\_\_\_: In some cultures it is considered important for the whole family to sit down and eat together, spending a long time over a meal. In other instances, family members dine at different times, usually in a hurry. These families may try to make a special effort to eat together sometimes, perhaps for Sunday lunch.
6. \_\_\_\_\_: Eating patterns are also influenced by the size of a family and the ages of the children in a family. For example, dual career couples, students and single people will differ in their eating patterns.

**7. Reading to remember.**

**a. First look at the title (in the box below) of this extract from your textbook.**

**Before you read, try to guess some of the functions and write them in the space below.**

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**b. Next read the article and underline or highlight all the functions.**

**c. Turn over the page and try to remember as many of the 7 functions as possible. Give yourself 10 points for each one you remember and see who gets the highest score!**

<b>Functions of Vitamin C</b>
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1. The main role of Vitamin C is in the manufacture of collagen. This protein collagen forms the basis of connective tissue, which acts as a cementing substance between cells.
2. Essential for formation of bones and teeth.
3. Vitamin C is critical to the immune system as it is involved in antibody production and white blood-cell function and activity.
4. It is a powerful water soluble antioxidant and plays a vital role in protecting against oxidative damage.
5. It neutralises potentially harmful reactions in the body. It also helps to protect HDL cholesterol (HDL is 'good' Cholesterol which helps to lower the risk of coronary heart disease) against free radical damage. This antioxidant action helps to protect against cancer, the effects of ageing, heart disease and many other health problems.
6. Necessary for the absorption of iron and for healthy blood vessels.
7. Vitamin C prevents scurvy.

Language Level: B1 / B2  
Individual / pair

**Focus on writing**

**8. Writing exam answers**

In the Leaving Certificate exam, many answers are written as simple sentences. This exercise will give you practice in writing these sentences. Below are sample questions from LC exam papers on the topic Food Science and Nutrition. We have given you the answers, but they are jumbled! Rewrite the sentences correctly.

(a) State **two** functions of Vitamin C.

absorption / important /it is / of iron /in the

---

it/ connective /tissue /form /helps

---

(b) State **two** function of iron in the body.

it is /in the formation /in the red blood cells /of the pigment hemoglobin / essential

---

Plays /it /enzyme /a part /activity /in

---

(c) State **two** functions of calcium in the body.

formation /the /of /bones /strong

---

prevents /decay /it /tooth

---

## Answer key

### 1. Missing words

Food is a basic requirement for living. Without food a person would not survive. The main **functions** of food are:

- To supply heat and **energy**;
- For **growth** and repair of body cells
- To protect the body from infection and **disease**.

Most foods contain several different **nutrients**, for example, milk; whereas others contain only one nutrient. Oil only contains fat (also called lipid). Foods which contain several different nutrients are considered to be **nutritious**; milk and meat are examples of these.

### 3. Matching

Column A	Column B
Recommended Dietary Allowance (RDA)	The amount of a nutrient that meets the daily needs of a healthy person.
malnutrition	An imbalance of nutrients in the diet (this may lead to under nutrition or over nutrition).
metabolic rate	The rate at which a person burns up energy.
enzymes	Chemical substances that speed up and/or control reactions in the human body.
chemical formula	The total number of elements in the molecule.
biological function	The function that a nutrient fulfils in the body

### 4. Key phrases in use

- The **RDA** for protein is based on grams per kilogram of bodyweight.
- One of the **biological functions** of protein is that it is necessary for growth and repair of all body cells.
- The **chemical formula** for water is H<sub>2</sub>O.
- The basal **metabolic rate** is the energy required to live, such as the heartbeat, breathing.
- All **enzymes** need correct temperatures and pH levels in order to function correctly and efficiently.
- Obesity and anaemia are two possible results of **malnutrition**.

### 5. Nouns to adjectives

Anaemia – anaemic, Biology – biological, Diet – dietary, Fat – fatty/fattening, Function – functioning/functional, Health – healthy, Leaf – leafy, Nutrient – nutritional/nutritious, Recommend – recommended, Saturate - saturated

### 6. Reading to extract the main idea.

1. The working/school day.
2. Number of adults working.
3. Leisure activities.
4. Convenience foods
5. Culture
6. Family size

### 7. Reading to Remember

The main role of Vitamin C is in the manufacture of (1) **collagen**. This protein collagen forms the basis of connective tissue, which acts as a cementing substance between cells.

Essential for formation of (2) **bones and teeth**.

Vitamin C is critical to the (3) **immune system** as it is involved in antibody production and white blood-cell function and activity.

It is a powerful water soluble (4) **antioxidant** and plays a vital role in protecting against oxidative damage.

It (5) **neutralise potentially harmful reactions in the body**. It also helps to protect HDL cholesterol (HDL is 'good' Cholesterol which helps to lower the risk of coronary heart disease) against free radical damage. This antioxidant action helps to protect against cancer, the effects of ageing, heart disease and many other health problems.

Necessary for the (6) **absorption of iron** and for healthy blood vessels.

Vitamin C prevents (7) **scurvy**.

### 8. Writing exam answers

- (a) It is important in the absorption of iron.  
It helps form connective tissue.
- (b) It is essential in the formation of the pigment haemoglobin in the red blood cells.  
It plays a part in enzyme activity.
- (c) The formation of strong bones.  
It prevents tooth decay.