

Agriways

English for Agriculture, Land Management
and Rural Development



Patrizia Careggio • Elisabetta Indraccolo

Agriways

English for Agriculture, Land Management and Rural Development

edisco

Realizzazione editoriale:

- Progetto e consulenza: Raffaele Polichetti
- Consulenza tecnica: Rosanna Vigliocco
- Revisione linguistica: Stefan Cooper
- Impaginazione: Graphic Center - Torino
- Disegni: Mauro Borgarello
- Revisione testi: Lunella Luzi
- Registrazione audio: Ivano Atzori

Le autrici desiderano ringraziare la prof. Maria Grazia Bellino e la prof. Paola Briano per il contributo didattico dato nella realizzazione di quest'opera.

In linea con le disposizioni di legge e le indicazioni ministeriali, si attesta che l'opera è realizzata in "forma MISTA", cartacea e digitale. L'Editore mette a disposizione gratuitamente sul proprio sito diverse risorse didattiche online: materiali extra per attività di approfondimento e di esercitazione in parte ad accesso libero e in parte riservati al docente.

L'opera è altresì disponibile in edizione DIGITALE per gli studenti diversamente abili e i loro docenti. L'Editore mette a disposizione degli studenti non vedenti, ipovedenti, disabili motori o con disturbi specifici di apprendimento i file pdf in cui sono memorizzate le pagine di questo libro.

Copyright © 2013 Edisco Editrice, Torino
10128 Torino – Via Pastrengo, 28
Tel. 011.547880 – Fax 011.5175396
e-mail: info@edisco.it • sito web: www.edisco.it

Tutti i diritti riservati. I diritti di elaborazione in qualsiasi forma o opera, di memorizzazione anche digitale su supporti di qualsiasi tipo (inclusi magnetici e ottici), di riproduzione e di adattamento totale o parziale con qualsiasi mezzo (compresi i microfilm e le copie fotostatiche), i diritti di noleggio, di prestito e di traduzione sono riservati per tutti i Paesi. L'acquisto della presente copia dell'opera non implica il trasferimento dei suddetti diritti né li esaurisce.

Le immagini del testo (disegni o fotografie) che rappresentano nomi, marchi o prodotti commerciali hanno un valore puramente didattico di esemplificazione. L'autore e l'editore non intendono cioè sostenere che i prodotti fotografati siano migliori o peggiori di altri, né indirettamente consigliarne o sconsigliarne l'acquisto. Peraltro non esiste alcun rapporto di nessun genere con i relativi produttori: Nomi e marchi sono generalmente depositati o registrati dalle rispettive case produttrici.

L'Editore è a disposizione degli aventi diritto con i quali non gli è stato possibile comunicare, nonché per eventuali involontarie omissioni e inesattezze nella citazione delle fonti dei brani, illustrazioni e fotografie riprodotti nel presente volume.

Stampato per conto della Casa editrice presso
La Grafica, Boves, Cuneo, Italia

Printed in Italy

Ristampe

5 4 3 2 1 0 2018 2017 2016 2015 2014 2013

PRESENTAZIONE

L'ARGOMENTO *Agriways* è rivolto agli studenti dei Nuovi Istituti:

- **Tecnici**, Settore Tecnologico, Indirizzo **Agraria, Agroalimentare e Agroindustria**;
- **Professionali**, Settore Servizi, Indirizzo **Agricoltura e Sviluppo Rurale**.

Grazie alla ricchezza del materiale proposto, *Agriways* offre la possibilità di scegliere gli argomenti sia in base ai programmi delle materie tecnico-scientifiche di indirizzo, sia in base agli interessi e al livello di competenza linguistica degli studenti. I contenuti sono ordinati secondo criteri di graduale complessità concettuale e linguistica e vengono esplorati utilizzando le quattro abilità in modo omogeneo ed integrato. I brani, tutti autentici, offrono un assortimento di stili, registri e livelli di difficoltà e sono tratti da fonti diverse: giornali e riviste specializzate, testi scolastici inglesi e americani, materiale promozionale, manuali tecnici e siti internet.

GLI OBIETTIVI *Agriways* si propone di: far acquisire le competenze necessarie per leggere e comprendere testi che presentano termini, espressioni, strutture sintattiche e modalità discorsive specifiche del linguaggio scientifico e tecnologico settoriale; migliorare le capacità di ricezione e produzione, orale e scritta; arricchire il patrimonio lessicale; consolidare abitudini grammaticali corrette o approfondire alcune strutture; stimolare l'interesse e la partecipazione attiva degli studenti, dando spazio alla loro esperienza personale e a problematiche di attualità; contribuire a sviluppare sensibilità per il rispetto e la protezione dell'ambiente con suggerimenti per comportamenti 'eco-friendly'.

LA STRUTTURA *Agriways* è diviso in **otto Moduli**, ognuno dei quali è ripartito in due sezioni:

- 1 **Technical Section** – Divisa in **Unità**, contiene testi e attività che riguardano i contenuti specifici della specializzazione già affrontati in L1. Ogni Unità è suddivisa in Capitoli per favorire non solo uno studio più parcellizzato, ma anche la scelta antologica da parte dell'insegnante. Brevi 'box' di approfondimento, denominati *Digging Deeper*, permettono di ampliare le conoscenze sull'argomento. Per ogni brano di lettura è previsto un esauriente **glossario**.
- 2 **Revision and Practice** – Si occupa di contenuti inerenti alla disciplina ponendo attenzione all'arricchimento lessicale, strutturale e allo sviluppo delle quattro abilità linguistiche. Presenta le seguenti ripartizioni:
 - **Vocabulary**. Consolidamento del **lessico tecnico** più importante del Modulo. Costituisce anche uno strumento che gli studenti possono utilizzare come rinforzo e ripasso degli argomenti.
 - **Grammar**. Propone il rinforzo delle **strutture morfosintattiche** più ricorrenti.
 - **Communication**. Offre testi e attività di consolidamento dei contenuti appresi per sviluppare le **quattro abilità linguistiche**: *Reading, Listening, Speaking, Writing*.
 - **CLIL** (*Content and Language Integrated Learning*): alla fine di ogni Modulo è presente un CLIL CORNER che si collega alle tematiche presentate in alcune delle **discipline curriculari** – Diritto, Agronomia, Ecologia, Economia, Tecniche di allevamento vegetale e animale, Informatica.

RISORSE ONLINE

Disponibili sul sito www.edisco.it:

- file audio formato MP3 con la registrazione delle attività di ascolto;
- materiali extra per attività di approfondimento e di esercitazione;
- *Teacher's Book*: soluzioni degli esercizi – audioscripts delle attività di ascolto – note didattiche – prove di verifica – simulazioni della terza prova dell'Esame di Stato.

CONTENTS

MODULE

0 LEARNING TO LEARN

UNIT 1 Welcome to Agriways!

- A. Something about yourself 8
- B. Survival English 10

UNIT 2 Get smart about learning!

- A. Study skills checklist 12
- B. Tips for language learning success 13
- C. How to get better grades in school 15

MODULE

1 GETTING STARTED

UNIT 1 • Some historical notes

- A. Early development of agriculture 18
- B. From the Renaissance to the Industrial Revolution 21
- C. Conventional farming in the 20th century 23
- D. Modern farming techniques 26

UNIT 2 • The future in our hands

- A. Genetic engineering: is it playing God?
- B. Sustainable agriculture
- C. Organic farming

REVISION AND PRACTICE

VOCABULARY 36

GRAMMAR (1. Plurals, 2. Place prepositions) 38

COMMUNICATION

- Listening (*Scientist under attack*) 40
- Speaking (*A debate: whose side are you on?*) 41
- Reading (*USA: Co-existence – new accents in biotech policy*) 42
- Writing (*Whose side are they on?*) 43

CLIL: Law (*The European Regulatory System*) 44

MODULE

2 ECOLOGY AND FORESTRY

Unit 1 • The planet Earth

- A. The three Es (Ecology, Environment, Ecosystem) 48
- B. Environmental pollution 51
- C. Global environmental policy 54

Unit 2 • Forest management and conservation

- A. Forestry 56
- B. Deforestation 60
- C. Biodiversity conservation 62
- D. Dead wood: a key to biodiversity 64

REVISION AND PRACTICE

VOCABULARY 66

GRAMMAR (1. Articles, 2. Indefinite adjectives and pronouns, 3. Comparatives and superlatives) 68

COMMUNICATION

- Listening (*Atmosphere and climate research at the Jungfrauoch*) 70
- Speaking (*What is your ecological footprint?*) 71
- Reading (*Bosco delle Sorti della Partecipanza: a floating raft on the rice fields*) 72
- Writing (*Light pollution: not just an astronomer's problem*) 73

CLIL: Rural sociology and history of agriculture (*The CAP: how to promote sustainable agriculture*) 74



Unit 1 • Soil and agriculture

A. Soil composition	78
B. Soil profile	80
C. Soil texture and structure	82
D. Soil degradation	84

Unit 2 • Water and agriculture

A. Water resources	88
--------------------------	----

B. Methods of irrigation	92
C. Drainage	96

REVISION AND PRACTICE

VOCABULARY	98
------------------	----

GRAMMAR (<i>Prefixes and suffixes</i>)	100
--	-----

COMMUNICATION

Listening (<i>Change in water volume</i>)	102
Speaking (<i>Underground</i>)	103
Reading (<i>Irrigation in the past</i>)	104
Writing (<i>Soil erosion as big a problem as global warming, say scientists</i>)	105

CLIL: Land agronomy and forest ecosystems (<i>Water flows uphill to money</i>)	106
---	-----



Unit 1 • Plants and the environment

A. Plant classification	110
B. The parts of plants	112
C. The importance of plants	114

Unit 2 • Growing crop plants

A. Cereals	116
------------------	-----

B. Leguminous plants	120
C. Are potatoes good or bad for your health? ..	122
D. Fruit and vegetables	124
E. Crop plant adversities	129

REVISION AND PRACTICE

VOCABULARY	130
------------------	-----

GRAMMAR (<i>1. Connectors, 2. The more... the better</i>)	132
---	-----

COMMUNICATION

Listening (<i>Do calories affect overweight?</i>)	134
Speaking (<i>How to feed your child healthily</i>)	135
Reading (<i>Rice: a staple food</i>)	136
Writing (<i>Cooking and joking</i>)	137

CLIL: History (<i>The potato famine in Ireland</i>)	138
---	-----

5 FOOD PROCESSING



Unit 1 • The food industry

- A. Food processing and preservation 142
- B. The modern era of food preservation 145

Unit 2 • The edible oil industry

- A. Olive oil: Italy's liquid gold 148
- B. Nut and seed oils..... 153
- C. Refined and unrefined nut and seed oils..... 155

Unit 3 • The dairy industry

- A. Milk: the most complete food 158

- B. Milk treatments..... 161
- C. Dairy products..... 163
- D. English cheeses..... 166

REVISION AND PRACTICE

VOCABULARY 168

GRAMMAR (1. The -ing form, 2. False friends)..... 170

COMMUNICATION

Listening (*Transporting food*) 172

Speaking (*Advertising cheese*)..... 173

Reading (*Parmigiano Reggiano: Italians do it better!*)..... 174

Writing (*The modern food philosophy: ready meals*) 175

CLIL: Land and environmental management
(*Food miles: the environmental impact of our salad*) 176

6 ALCOHOLIC BEVERAGES



Unit 1 • Vineyards and wine

- A. Vineyards and grapes..... 180
- B. Dangers in the vineyards..... 183
- C. The winemaking process 185
- D. Wine classification..... 187
- E. A bottle of Balsamic Vinegar: a regal gift!... 190

Unit 2 • Beer brewing

- A. A history of beer 194
- B. The beer production process 196
- C. Types of beer 200

REVISION AND PRACTICE

VOCABULARY 202

GRAMMAR (*The passive form*) 204

COMMUNICATION

Listening (*Alcohol and health*) 206

Speaking (*An Italian speciality*) 207

Reading (*Chianti: the heart of Tuscany*) 208

Writing (*Champagne-making process*)..... 209

CLIL: Economics (*Successful wine marketing*) 210



Unit 1 • Ruminant livestock

- A. The ruminant: a perfectly constructed mechanism..... 214
- B. Cattle 216
- C. Sheep 218
- D. Goats 220
- E. Classification of ruminant livestock..... 222

Unit 2 • Non-ruminant livestock

- A. Poultry: wild birds or farm animals?..... 224
- B. Pig husbandry 228
- C. Horses are the noblest animals 230

Unit 3 • Opportunities and problems in livestock management

- A. Intensive livestock farming vs. organic farming 232
- B. Livestock diseases..... 235

REVISION AND PRACTICE

VOCABULARY 238

GRAMMAR (1. *British English vs. American English*,
2. *Phrasal verbs*) 240

COMMUNICATION

Listening (*Cattle breeding in the Argentine Pampas*)..... 242

Speaking (*Looking for a farm-house*)..... 243

Reading (*Swine flu: what you need to know*) 244

Writing (*How to write a circular letter*) 245

CLIL: Animal and plant husbandry (*The most popular Italian cattle breed: the Piedmontese*)..... 246



Unit 1 • Farm business management

- A. The factors of production 250
- B. Risk and uncertainty..... 253
- C. Budgeting 255

Unit 2 • Computing on a farm

- A. Exploiting the Net 256
- B. Do computers save time and money?..... 260
- C. Automation and Robotics..... 262

Unit 3 • What shall I do?

- A. Future trends in agricultural labour..... 264
- B. Applying for a position 267
- C. How to win at interviews 272

REVISION AND PRACTICE

VOCABULARY 274

GRAMMAR (*Compound nouns*)..... 276

COMMUNICATION

Listening (*Call for help*)..... 278

Speaking (*The first job interview*)..... 279

Reading (*Milking automation*) 280

Writing (*A job advertisement*) 281

CLIL: Information Technology
(*Hardware vs Software*) 282

TECHNICAL GLOSSARY 284

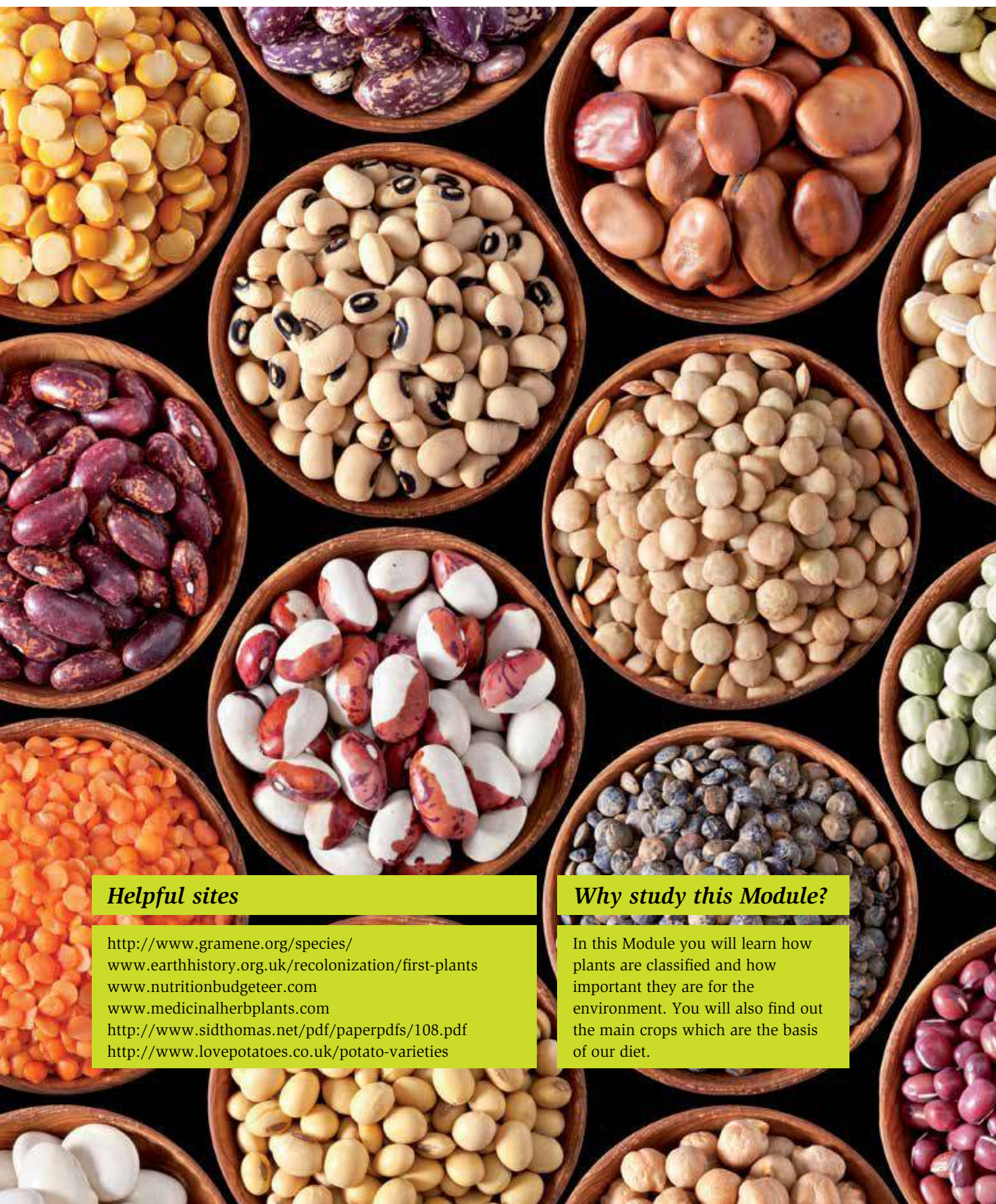
4 PLANT AND FARM CROPS

UNIT 1 • Plants and the environment

- A. Plant classification
- B. The parts of plants
- C. The importance of plants

UNIT 2 • Growing crop plants

- A. Cereals
- B. Leguminous plants
- C. Are potatoes good or bad for your health?
- D. Fruit and vegetables
- E. Crop plant adversities



Helpful sites

<http://www.gramene.org/species/>
www.earthhistory.org.uk/recolonization/first-plants
www.nutritionbudgeteer.com
www.medicinalherbplants.com
<http://www.sidthomas.net/pdf/paperpdfs/108.pdf>
<http://www.lovepotatoes.co.uk/potato-varieties>

Why study this Module?

In this Module you will learn how plants are classified and how important they are for the environment. You will also find out the main crops which are the basis of our diet.

PLANTS AND THE ENVIRONMENT

Since plants interact with the environment directly by exchanging water and energy, weather events can severely affect crop yield. In this Unit we look at how plants are classified and how important they are for the environment.

A. PLANT CLASSIFICATION

Since the 4th century BC all living things had been divided into two groups: **plants** and **animals**. It was only in the 18th century that **Carolus Linnaeus**, a Swedish botanist, created the basis of a modern scientific classification, where these two groups became the kingdom *Vegetabilia* (later *Plantae*) and *Animalia*. With this classification the first part of a Linnean name indicates the **Genus** (group), while the second part gives the particular Species, with both parts expressed in Latin.

The Plant Kingdom is a group whose members are today usually defined by the presence of green **chloroplasts** containing chlorophyll and **carotinoid pigments** and the ability to convert light, minerals and **carbon dioxide** into chemical energy, mainly contained in glucose.

The Plant Kingdom classifies plants mainly by their reproduction system:

- **spore bearing plants** (also known as cryptogams): schizophytes (bacteria and **cyanophyceae**), thallophytes (algae, fungi and lichens), bryophytes (**mosses**, **liverworts** and **hornworts**) and pteridophytes (**lycopods**, **horsetails** and **ferns**)
- **seed bearing plants**: spermatophytes (also known as phanerogams)

The second group is the largest group of plants and includes:

- **gymnosperms** (conifers, **cycads**, ginkgo and **gnetales**). These plants, most of which are **evergreen**, have no flowers but seeds which are on cones or in **cups** or fleshy coats.
- **angiosperms**. These are flowering plants.



Carolus Linnaeus

Answer the following questions.

- What is the Plant Kingdom?
- What do you know about the life of plants and their importance?
- How do plants interact with their environment?



The science of **crop farming** deals mainly with angiosperms, which are divided into two major groups: **monocots (monocotyledons)** and **dicots (dicotyledons)**.

The table below summarizes the major morphological differences between monocots and dicots.

MONOCOTS	DICOTS
Embryo with single cotyledon	Embryo with two cotyledons
Pollen with single furrow or pore	Pollen with three furrows or pores
Flower parts in multiples of three	Flower parts in multiples of four or five
Major leaf veins parallel	Major leaf veins reticulated
Stem vascular bundles scattered	Stem vascular bundles in a ring
Primary root replaced by adventitious roots	Primary root becomes a strong taproot with smaller secondary roots
Secondary growth absent	Secondary growth often present



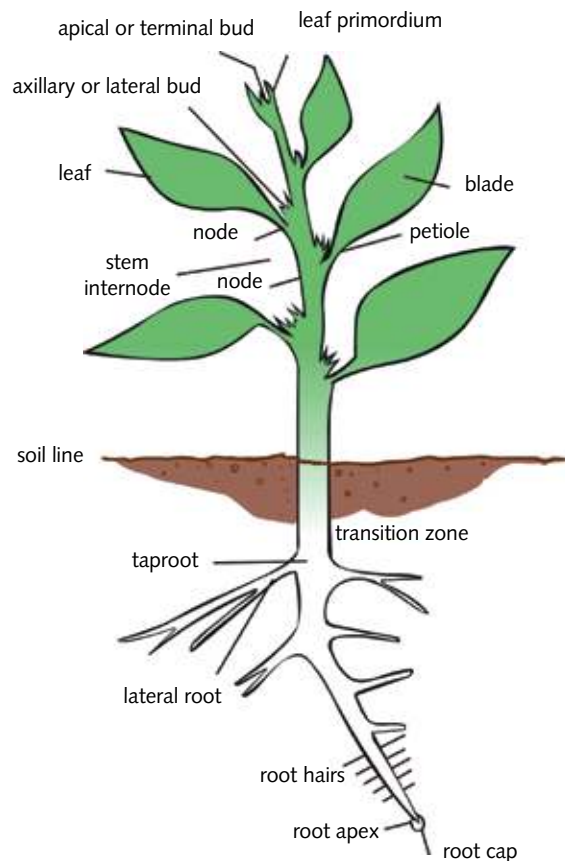
1 *Pair Work. Looking back at the table, in turns, ask and answer suitable questions about the information given.*

GLOSSARY



carbon dioxide: anidride carbonica	fern: felce	major leaf veins: nervatura principale
carotinoid pigment: pigmento carotenoide	furrow: solco	moss: muschio
chloroplast: cloroplasto	Genus: genere	pollen: polline
crop farming: agricoltura	gnetale: pianta delle Gnetali	pore: poro
cup: calice	hornwort: ceratophyllum	scattered: sparpagliato
cyanophyceae: alga azzurra	horsetail: equisetio	stem: stelo
cycad: pianta delle Cycadaceae	liverwort: epatica	taproot: radice a fittone
evergreen: sempreverde	lycopod: licopodio	vascular bundle: fascio vascolare

B. THE PARTS OF PLANTS



Angiosperms are characterized by a **root system** and a **shoot system**: **the former** is normally underground and consists of the primary root and its branches or a mass of roots, while **the latter** is above ground and consists of the stem, leaves and reproductive structures.

These two systems are connected by a vascular tissue that runs from the root through the shoot. The root system enables flowering plants to obtain water and nutrients from the soil. The shoot system allows plants to reproduce and to obtain food through photosynthesis.

Root, stem and leaves belong to the **vegetative structure**, while flower, fruit and seed belong to the **reproductive structure**.

The functions of the **root system** include:

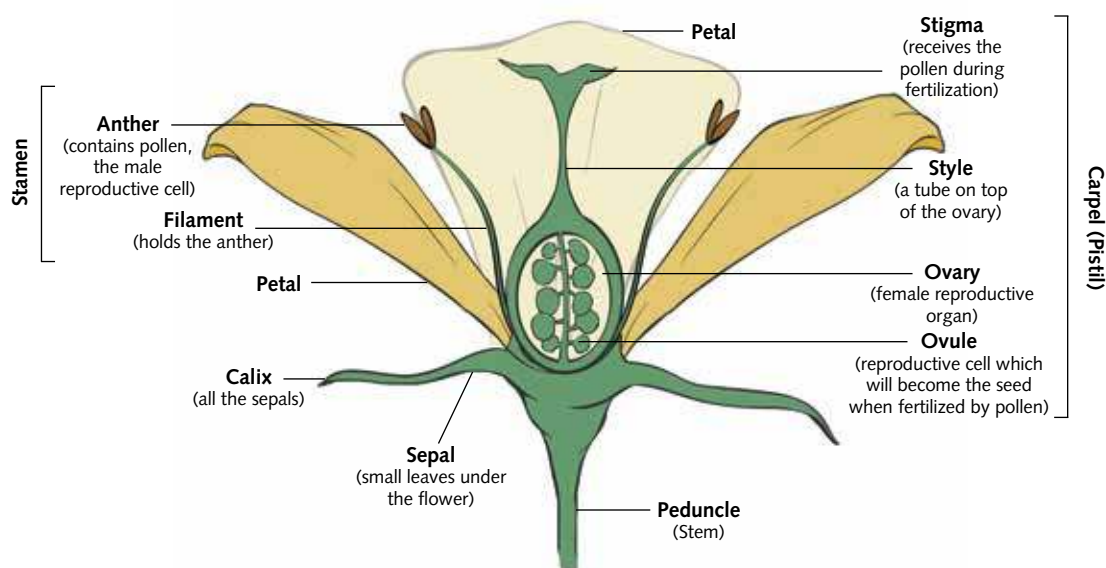
- anchorage of the plant in the soil
- absorption of water and nutrients from the soil in mineral solutions, mainly through the **root hairs**
- storage of food
- transport of water and dissolved substances from the root into the stem and also transport of carbohydrate (produced through photosynthesis) from the stem down into the root
- hormone production.

The functions of the **shoot system** include:

- photosynthesis
- reproduction
- storage of water and nutrients
- transport of water, food, and nutrients to all parts of the plant
- hormone production.

DIGGING DEEPER

The **reproductive unit** of some plants (angiosperms) is the **flower**. This consists of petals, sepals (little green leaves that cover the outside of a flower), male parts (the stamen, consisting of the anther and the filament) and female parts (the pistil, consisting of the stigma, the style, the ovary containing the ovule). Some flowers (**perfect flowers**) have both male and female reproductive organs; others (**imperfect flowers**) have only male parts or only female parts. Some plants have both male and female flowers (e.g. maize), while others have males on one plant and females on another (e.g. kiwi).



2 Match the following words with the corresponding definitions.

- | | | |
|-----------|--------------------------|---|
| a. plant | ☐ | 1. Part of the plant essential for reproduction. |
| b. flower | ☐ | 2. Living organism synthesizing nutrients by photosynthesis. |
| c. fruit | ☐ | 3. Coloured and usually scented product of a plant. |
| d. seed | ☐ | 4. Part of the plant above the ground. |
| e. leaf | ☐ | 5. Underground structure which feeds the plant and holds it in place. |
| f. stem | ☐ | 6. Product of a plant that comes after the flower. |
| g. root | ☐ | 7. Part of the plant that carries the leaves. |
| h. shoot | ☐ | 8. Part of the plant that is an offshoot of the stem and usually green. |

GLOSSARY



root hairs: peli radicali

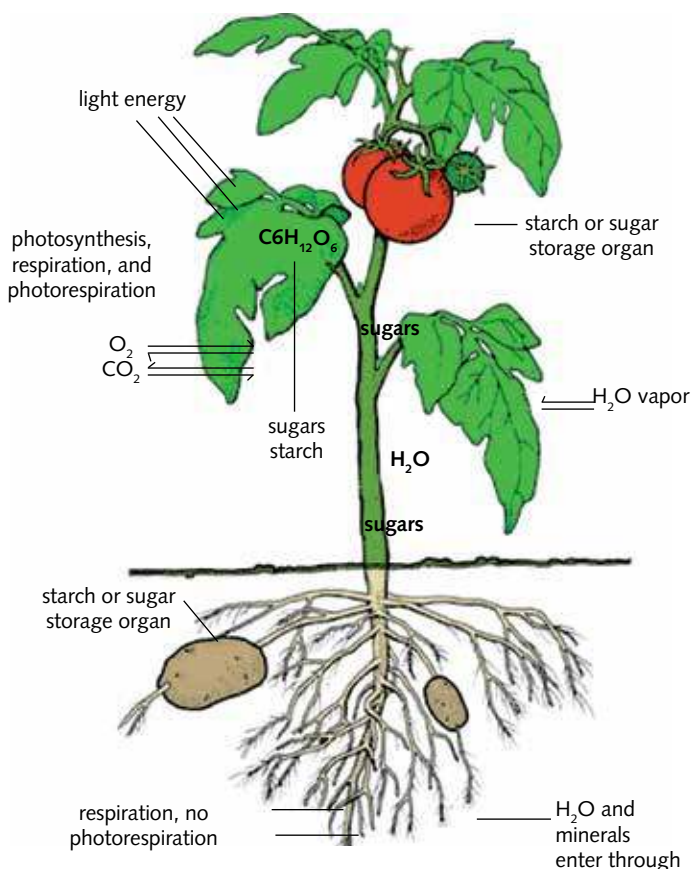
root system: apparato radicale

shoot system: apparato aereo

the former: il primo (di due)

the latter: il secondo (di due)

C. THE IMPORTANCE OF PLANTS



It is impossible to think about an environment without plants, since they play the most important part in the cycle of nature.

The following are some of the ways plants help the environment:

- plants hold the soil in place, preventing erosion due to rain and wind
- fallen leaves and rotting wood help enrich the soil
- shade from trees and bushes moderate the temperature and provides places for wildlife to live and hide
- in tropical rainforests, plants may change the rainfall patterns over large areas
- most modern pharmaceuticals are derived from plants found in their natural ecosystem
- coal is a fossil substance of plant origin
- besides food, plants supply wood products, fibres, drugs, oils, latex, pigments, resins, fuels and raw materials to make a wide variety of other products.

Besides producing organic substance, one of the most important things plants do is create

oxygen. In fact, without plants, there could be no life on Earth; since they are the only organism that can make their own food, they are the primary producers that sustain all other life forms. They take in the carbon dioxide (CO₂) that humans and animals breathe out and release oxygen for humans and animals to breathe in. This process is called **photosynthesis**: it is also referred to as the carbon-fixation process, since it produces carbon compounds which store chemical energy to be used in cell life. Light, water, mineral salts, chlorophyll and carbon dioxide are the basic requirements for the photosynthesis process.

The following are the main steps of this process:

- Carbon dioxide in the atmosphere enters the plant leaf through the stomata. These are minute epidermal pores in the leaves and stem of the plants, which facilitate the transfer of various gases and water vapour.
- Water enters the leaves, primarily through the roots, which draw in ground water, and transport it to the leaves through the stem.
- Light energy is captured by chlorophyll in the chloroplasts: this is a pigment found in the cells of leaves which is formed only in the presence of light and is the substance that colours plants green.
- Carbon dioxide absorbed from the air and water from the soil react with the sun's energy to form carbohydrates (glucose, starches and cellulose). Oxygen is let out by the plant through the stomata. The results of this process are the reverse of those in **respiration**, where carbohydrates are oxidized to release energy, producing carbon dioxide and water.

The following table compares the different features of photosynthesis and respiration.

PHOTOSYNTHESIS	RESPIRATION
Produces sugars	Burns sugars
Energy is stored	Energy is released
Occurs only in cells with chloroplasts	Occurs in all cells
Oxygen is produced	Oxygen is absorbed
Water is used	Water is produced
Carbon dioxide is used	Carbon dioxide is produced
Requires light	Occurs in dark and light



3 Use the words given in scrambled order below to write sentences. Then listen to the recording to check if you were right.

- important / the / production / most / role / of / oxygen / is / carbon dioxide / the / of / and / the / absorption / of / plants.
- to / vulnerable / extreme / young / conditions / are / especially / weather / plants.
- the / energy / the / air / through / plants / soil / minerals / from / carbon dioxide / from / the / and / water / and / from / sun / photosynthesis / take.
- is / and / oxygen / decompose / hydrogen / into / water / direct / light / required / to.
- medicinal / range / a / are / wide / used / plants / for / purposes / of.
- into / called / carbon dioxide / form / atmosphere / the / fixation / turning / process / of / in / the / a / usable / of / energy / is / carbon.



4 Decide if the following statements are true (T) or false (F) and correct the false ones.

- | | T | F |
|--|--------------------------|--------------------------|
| a. Only the old pharmacopoeia used remedies from plants. | ☐ | ☐ |
| b. Dead wood is useless for the soil | ☐ | ☐ |
| c. Plants help to protect the soil against damage from atmospheric agents | ☐ | ☐ |
| d. Plants are primary producers. | ☐ | ☐ |
| e. Chlorophyll is formed only in the presence of light | ☐ | ☐ |
| f. The results of photosynthesis and respiration are the same. | ☐ | ☐ |
| g. Plants are coloured green by chlorophyll. | ☐ | ☐ |
| h. Light, water, chlorophyll and oxygen are the basic requirements for photosynthesis. | ☐ | ☐ |
| i. Stomata are minute epidermal pores in the roots. | ☐ | ☐ |

GLOSSARY



to breath in: inspirare

to breathe out: espirare

carbon dioxide: anidride carbonica

coal: carbone

to draw in: assorbire

latex: lattice

pharmaceuticals: prodotti farmaceutici

rotting: in decomposizione

starch: amido

stoma (pl. stomata): stoma

GROWING CROP PLANTS

Agriculture, the deliberate planting and harvesting of plants and herding of animals, is one of the greatest inventions of humanity. Crop plants are the major source of human nutrition as they provide 50% of all human energy and protein needs. In this Unit you will learn about some crops which are the basis of our diet.

A. CEREALS

Tracing the word “cereal” back to its origin, we discover it derives from the name **Ceres**, the Roman goddess of the harvest who was believed to teach humans how to grow, preserve, and prepare grain and corn.

As a matter of fact, cereals were the earliest cultivated plants and for over ten thousand years they have been the staple food for many human societies. Today cereal plants account for over fifty per cent of human energy and protein needs, and occupy two-thirds of all cultivated land. Basically, cereals are grains produced by plants belonging to the grass family. They are annual plants and once they have grown their seeds, they have completed their life cycle and can be harvested, using either a combine harvester or hand tools such as scythes.

Their importance is related to a number of features. They are relatively easy to grow, store and transport and have a high nutritive value. But the main reason cereals are important is that there are many species and varieties grown in different parts of the world. **Wheat** is the primary cereal of temperate regions. It is consumed worldwide, but is a staple food in North America,

Europe, Australia and New Zealand. **Maize** grows best in hotter conditions and is an important cereal crop in many different areas from the arid desert plains of the south-western United States to the high Andean mountain plains of Ecuador and Peru.

Rice is a crop of the wet tropics, while **sorghum** can survive in very hot, dry conditions. All these plants have adapted in order to survive and flourish in particular environmental conditions.

Cereals are the main source of energy, providing about 350 kcal per 100 grams, and supplying most of their food energy as starch. Unrefined cereals are good sources of fibres, proteins, B vitamins and other important nutrients such as fat, iron and vitamin E. Maize, wheat and rice provide 87% of all grain production worldwide and 43% of all food calories. Wheat is utilized for making bread and



◀ Answer the following questions.

- What are the main crop plants grown in Italy?
- Where did the crop plants grown in Italy originate? Where were they domesticated?
- Are vegetables and legumes nutritious?

pasta; maize is mainly used as forage but it is also employed for making **mush** or to produce vegetable oils. Important cereals include **rye** and **barley**, grown in temperate and cool regions where other cereals do not grow well, and used to make whisky or beer. Barley, in particular, has been adapted to the widest variety of climates, from the sub-Arctic to the sub-tropical. It is grown on a wide scale in Russia, Australia, Germany, Turkey and North America. Other cereals are **oats**, grown throughout the temperate zones mainly for livestock, especially horses, and **millet**, a staple food in the semi-arid tropics of Asia and Africa.

These are the most common cereal crops and their scientific terms:



Rice (*Oryza sativa*)



Durum wheat, macaroni wheat (*Triticum durum*)



Wheat, bread wheat (*Triticum aestivum*)



Corn or maize (*Zea mays*)



Barley (*Hordeum vulgare*)



Millet (*Panicum miliaceum*)



Sorghum (*Sorghum bicolor*)



Oat (*Avena sativa*)



Rye (*Secale cereale*)

GLOSSARY



to account for: equivalere,
rappresentare

combine harvester: mietitrebbiatrice

goddess: divinità

grass family: graminacee

mush: polenta

scythe: falce

staple food: cibo principale

unrefined: grezzo



1 Match the noun on the left with the definition on the right.

- | | | |
|------------|--------------------------|---|
| a. rice | ☐ | 1. It is a staple food in Africa and Asia. |
| b. maize | ☐ | 2. It is cultivated for its yellow edible grains, which develop on a spike. |
| c. rye | ☐ | 3. It is a drought resistant plant. |
| d. wheat | ☐ | 4. It is used in the beer making process. |
| e. barley | ☐ | 5. Its flour is suitable for making bread and pasta. |
| f. millet | ☐ | 6. It is considered the favourite feed of horses. |
| g. oats | ☐ | 7. It is a staple food in eastern countries. |
| h. sorghum | ☐ | 8. Its grains are used in making flour and whiskey. |



2 Cereal plants have adapted in order to grow in different environmental conditions. Refer to the text about cereals and fill in the table.

CROP	GROWTH REQUIREMENTS	WORLD AREAS
wheat		
maize		
rice		
sorghum		
rye		
barley		
millet		



3 Listen and complete the following text about a recipe.

How to make rice pudding



Step 1: You will need the following (1) to serve from two to four people: 200 grams of short grain (2), half a vanilla **pod**, 3 pieces of (3) anise, 350 ml of milk, 350 ml of **cream**, 100 g of sugar, 3 (4) **yolks**.

You will also need the following utensils: a **whisk**, a (5) spoon, a **saucepan**, a **cutting board**, a knife, a spoon, a **bowl**.

Step 2: Prepare the base: first make a **slit** in the (6) along its length. Next, **scrape** the pulp from the inside of the pod. Now place (7) the pulp and the pod into a saucepan. Add the star anise, milk and cream to the saucepan and bring the mixture to a boil.

Step 3: When the liquid begins to boil, add the rice and let it return to the boil. You can now (8) the **heat** to a **simmer**. **Stir** the rice pudding regularly and let it simmer for 15 to 20 minutes. Remember to stir constantly during this phase or your rice pudding will burn at the bottom. Now take out the anise and vanilla (9) You can now remove the saucepan from the heat and **set it aside**.

Step 4: Prepare the egg mix: place the eggs and the sugar into the bowl; using the whisk, **whip** them together by hand until the mixture turns (10)

Step 5: Add the egg mix: put only a little pudding into the egg mix, just enough to (11) the temperature of the eggs. You can now add the egg mixture to the rice pudding. Stir together well.

Step 6: Finish on the **stove**: return the saucepan to the (12) on a low heat and stir it constantly until it (13) slightly. This usually takes about one minute.

Step 7: Serve: your rice pudding is now ready to serve. Enjoy it (14) warm or cold. If you wish, you can also **garnish** it with a little fresh fruit on top.

A quick tip: to reheat rice pudding, first heat a (15) **tbsps** of water in a saucepan and then **fold** it into the pudding.

GLOSSARY



bowl: ciotola

cream: panna

cutting board: tagliere

to fold: unire a

to garnish: guarnire

heat: fuoco

pod: baccello

saucepan: tegame

to scrape: raschiare

to simmer: far bollire lentamente

to set aside: mettere da parte

slit: incisione

to stir: mescolare

stove: fornello

tbsp (tablespoon): cucchiaino

to whip: montare a neve

whisk: frusta

yolk: tuorlo

B.LEGUMINOUS PLANTS



Legumes play an important role in the quality of life of mankind grown as **human food, animal feed and forage**. They are **annual plants** (**shrubs, climbers**, and herbs) belonging to the family *Leguminosae* (or *Fabaceae*). Their characteristic seeds are contained in pods that split into two halves when ripe.

The history of legumes is **tied in** closely with that of human civilization, appearing early in Asia, the Americas and Europe, where they became a staple food, essential for **supplementing** protein where meat was less available. Today, although legumes are an important part of traditional diets around the world, they are often neglected in typical Western diets.

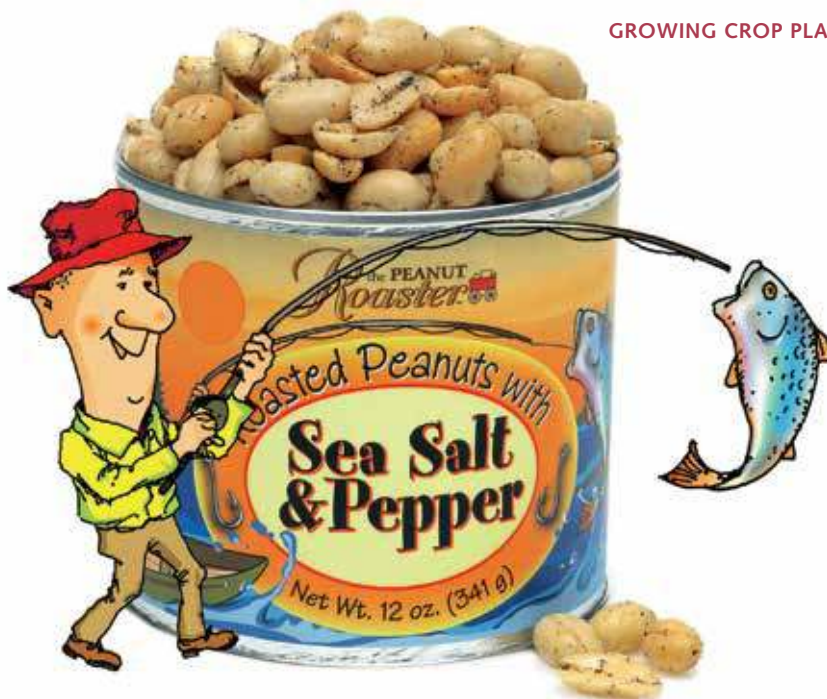
Grain legumes or **pulses** are inexpensive and excellent **sources** of protein and B vitamins as well as carbohydrates and can be excellent animal protein substitutes. Although their protein quality is not as good as in meat, generally due to their low levels of some essential amino acids, this can be corrected by incorporating cereals into the diet. Furthermore, while sources of animal protein are often rich in **saturated fats**, the small quantities of fats in legumes are mostly **unsaturated fats**.

Not only are legumes excellent sources of essential minerals, but they are also rich in **dietary fibre**, which aids digestion and helps reduce the cholesterol level in blood.

The most **widely cultivated** legumes for food include beans, peas, chick peas, lentils, soybeans and peanuts.

- **Beans** include different varieties (white beans, red beans, **green beans** and broad beans) which can be eaten fresh or **dried**; the protein content is higher in dried beans.
- **Lentils** (probably the first legume cultivated by man) contain the highest percentage of protein (25%) and a fair amount of minerals like potassium, calcium, phosphorus and iron.
- **Peas** are mostly eaten fresh, canned or frozen and were common food in ancient Rome; their protein content is 7%.
- **Chick peas**, a basic food in India, are rich in fats.
- **Soybeans** are used to make oil and milk which is suitable for people who are allergic to cow's milk.
- **Peanuts** can be eaten raw, salted, made into oils, and used in make-up, medicines and textile materials.

Legumes live in a symbiotic relationship with bacteria in structures called nodules on their roots. These bacteria are able to take **nitrogen** from the air, which is in a form that plants cannot use, and convert it into compounds that the plants can use. For this reason, many leguminous plants, such as **clover** and **alfalfa**, are used as organic manure to improve the nitrogen content of soils. They are also considered good feed for livestock, since **legume hay** has a larger content of protein, calcium and vitamin than grass hay.



4 Find the English for the following Italian words.

- a. baccello:
- b. seme:
- c. fagioli:
- d. lenticchie:
- e. ceci:
- f. soia:
- g. arachidi:
- h. fave:
- i. azoto:
- j. bestiame:



5 Pair Work. Ask and answer the following questions in turns.

- a. What are leguminous crops grown for?
- b. What is their main characteristic?
- c. What substances do they contain?
- d. Why are they beneficial for human health?
- e. What are the differences in nutritional values between lentils and peas?
- f. What are soybeans used for?
- g. How can peanuts be used?
- h. Why are legumes used as manure?
- i. Why are legumes used to feed livestock?

GLOSSARY



- alfalfa: erba medica
- climber: pianta rampicante
- clover: trifoglio
- dietary fibre: fibre alimentari
- dried: secco
- green beans: fagiolini
- legume hay: fieno di leguminose
- saturated fat: grasso saturo
- shrub: arbusto
- source: fonte
- to supplement: integrare
- to tie in: essere collegato
- unsaturated fat: grasso insaturo



C. ARE POTATOES GOOD OR BAD FOR YOUR HEALTH?

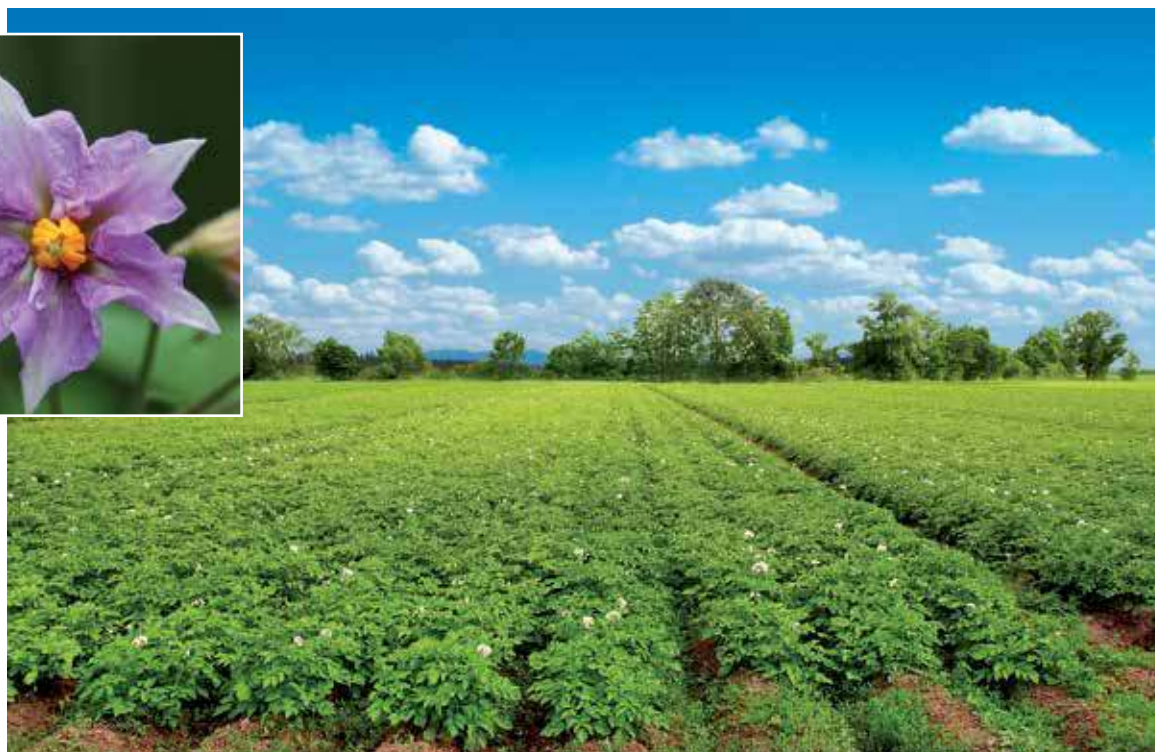
Potatoes are tubers that are a staple food in many parts of the world, particularly Europe and the western world. They are **starchy**, tuberous crops from the perennial *Solanum tuberosum* of the **Solanaceae family** (also known as the nightshades). The word *potato* may refer to the plant itself as well as the **edible** tuber. There are about five thousand potato varieties worldwide. Three thousand of them are found in the Andes alone, mainly in Peru, Bolivia, Ecuador, Chile and Colombia.

As a matter of fact, the potato originated in the region of **southern Peru** where they were first **domesticated** between 8000 BC and 5000 BC. In the *Altiplano*, potatoes provided the principal energy source for the Inca Empire, its predecessors, and its Spanish successor. Four centuries ago, **sailors** returning from Peru to **Spain** with silver and gold presumably brought maize and potatoes for their own food on the trip, and since then, potatoes have become an integral part of much of the world's cuisine.

Today the potato is the world's **fourth-largest food crop**, following rice, wheat and maize. Potatoes are amazingly **nutrient-rich**: they contain vitamins and minerals, are virtually fat-free, have no cholesterol and, when served in their skins, are a great source of fibre.

Independent nutritionists and dietary researchers recommend potatoes as the perfect base for a balanced diet. Because potatoes contain good nutrients for your brain and body, they can make you look, feel and even think great!

However, potatoes also contain **toxic compounds** known as glycoalkaloids of which the most prevalent are solanine and chaconine. These compounds, which protect the plant from its predators, are generally concentrated in its leaves, stems, **sprouts** and fruits, which are not eaten. Exposure to light, **sprouting**, physical damage and age may increase the glycoalkaloid content within the tuber; the highest concentrations **occurring** just **underneath** the skin. For this



reason, **storage facilities** need to be carefully designed to keep the potatoes alive and to slow the natural process of decomposition, which involves the breakdown of starch. It is crucial that the **storage** area is dark, well-ventilated and, for long-term storage, maintained at temperatures near 5-7 °C.

Consumers should avoid potatoes that are old, sunburned (green under the skin) or **spongy**. Such potatoes have toxic amounts of solanine, which can affect the nervous system and cause a variety of symptoms including headache, abdominal cramps, fever, hallucinations and even death.



6 Write the questions for the following answers.

- To both the plant and the tuber.
- About five thousand.
- In the region of southern Peru.
- Spanish sailors.
- Carbohydrates, vitamins and minerals.
- Solanine and chaconine.
- In the inedible parts, such as the leaves, stems, sprouts and fruits.
- To slow the natural process of decomposition and maintain the toxic substance at a low level.



7 Champ is a simple-to-make Irish side dish of creamy mashed potato with spring onions, perfect with Irish stew or roast meat. Put the recipe instructions in the right order. Look up the words in bold in a dictionary.

Ingredients

- 1.35 kg potatoes, well **scrubbed** and left **whole** in their jackets
- 290ml/half a pint of milk
- 85g butter
- salt and white pepper
- 1 large **bunch** spring onions, finely **chopped**

Preparation method

- ☐ Leave until just cool enough to peel.
Mash completely.
- ☐ **Pile** into a serving dish.
- ☐ Make a **well** in the centre and add the butter.
Serve immediately.
- ☐ Boil the potatoes in salted water until soft.
- ☐ **Season** with salt and pepper and **stir** well.
- ☐ **Drain** and remove from the pan.
- ☐ Boil the milk and add to the mashed potato,
together with the spring onions.



GLOSSARY



as a matter of fact: in effetti
to domesticate: domesticare
edible: commestibile
to occur: trovarsi
sailor: marinaio
spongy: spugnoso
sprout: germoglio
sprouting: germogliamento
starchy: ricco di amido
storage facilities: sistemi di immagazzinamento
underneath: al di sotto

D. FRUIT AND VEGETABLES



Fruits and vegetables around the world **number in** the thousands. Some are exotic and found only in the country of origin. Others are exported or imported and are readily available worldwide. They are categorized into different types or classes according to their shapes, **textures**, colour or flavour.

A simple way of classifying both fruits and vegetables is according to their **colour**. The colour of a fruit or vegetable is related to its health benefits because of the chemicals it contains that produce its colour.

Some **white** or **green** vegetables, like cauliflowers, broccolis and brussel sprouts, contain sulforaphane, a compound which reinforces the body's natural cancer-fighting resources.

The anthocyanins found in **red** cabbage and **blue** and **purple** foods, like blueberries and eggplant, not only protect the human body against cancer but also improve brain function and help keep the heart healthy.

Green vegetables, such as **kale** and spinach, contain zeaxanthin, a carotenoid which helps prevent cancerous tumor growth in humans.

Red fruits and vegetables, such as watermelon, tomatoes and red **grapefruit** contain lycopene which reduces the risk of developing cancers of the **lung**, prostate and stomach.

◆ Fruit

Although it is difficult to give a definition for fruit, in botanical terms, the definition is precise: “a fruit is a reproductive structure of an angiosperm which develops from the ovary and accessory tissue, which surrounds and protects the seed”. In other words, fruits are the means by which many plants disseminate seeds. This may be at odds with everyday usage of the word “fruit”. Botanically, pineapples, oranges, and apples are fruits, but so are “vegetables” like tomatoes and cucumbers. Olives, too, are classed as fruits and so olive oil is nothing but a fruit juice.

Most common fruits can be classified into biological categories. These include:

- **citrus fruits:** lime, mandarin, grapefruit, orange and lemon.
- **stone fruits** or **drupes**, which are **fleshy** fruit, such as a peach, plum, cherry or apricot, usually with a single hard **stone** that encloses a seed.
- **pome fruits**, which are fleshy fruits, such as apple, pear, **quince**, having a central core with several seed chambers called **carpel** and an outer fleshy layer.
- **berries**, which are simple fruits with seeds and pulp produced from a single ovary: strawberries, raspberries, blackberries, blueberries and grapes.



8 Fill in the blanks under each picture with the corresponding term.

artichoke – asparagus – aubergines – beets – broccoli – carrots – cauliflower – celeriac – celery –
chard – courgettes – cucumbers – fennels – garlic – lettuce – onions – peppers –
pumpkin – radishes – spinach – tomatoes – turnips



a.



b.



c.



d.



e.



f.



g.



h.



i.



j.



k.



l.



m.



n.



o.



p.



r.



s.



t.



u.



v.



q.

◆ Vegetables

Vegetables is a **catch-all** category that includes many of the **edible** parts of a plant, like stems, roots, flowers, and leaves. We do not usually consider the fruits of a plant to be vegetables, except for fruits that are not very sweet. Tomatoes, squash, peppers, aubergines and beans, for example, are all fruits, but we usually refer to them as vegetables. Vegetables can be categorized into seven groups. These are:

- **leafy green** vegetables, including spinach, lettuce, chicory, **endive**
- **root** vegetables, e.g. beet, celeriac, carrot, radish and turnip
- **stem** vegetables, e.g. celery, asparagus, chard and fennel
- **bulb** vegetables, e.g. garlic, onion, **shallot**, **chives** and **leek**
- **tuber** vegetables, e.g. potato, sweet potato, **Jerusalem artichoke** and **cassava**
- **inflorescent** vegetables, e.g. artichoke, cauliflower, **broccoli rabe** and broccoli
- **fruit** vegetables, e.g. olive, squash, pumpkin, avocado, cucumber, pepper, tomato and aubergine (BrE) / eggplant (AmE).

Vegetable plants grow best in a fertile, well-drained **soil** with a loamy texture. Sandy loam soils are easily worked and are quite productive. All vegetables need a healthy amount of organic material in the soil they grow in. Organic material serves many purposes. Most importantly, it provides many of the nutrients that plants need to grow and **thrive**. Secondly, organic material “softens” the soil and makes it easier for the roots to spread through the soil. Organic material, which can come from either a compost or well-**rotted manure**, also acts like small sponges in the soil and allows the soil in which vegetables grow to retain water.



GLOSSARY



• **at odds**: in contrasto
 • **broccoli rabe**: cime di rape
 • **carpel**: carpello
 • **cassava**: manioca
 • **catch-all**: generico
 • **chives**: erba cipollina
 • **drupe**: drupa
 • **edible**: commestibile

• **endive**: indivia
 • **fleshy**: carnoso
 • **grapefruit**: pompelmo
 • **leek**: porro
 • **Jerusalem artichoke**: topinambur
 • **kale**: cavolo verza
 • **lung**: polmone
 • **to number in**: ammontare

• **pineapples**: ananas
 • **quince**: mela cotogna
 • **rotted manure**: letame maturo
 • **shallot**: scalogno
 • **stone**: nocciolo
 • **texture**: consistenza
 • **to thrive**: crescere vigorosamente





9 Find synonyms for the words below in the above text.

- a. generalized
- b. classified
- c. to count
- d. accessible
- e. discordant
- f. aim
- g. to grow vigorously
- h. flowering



10 Tick the edible part of the plants in the table below.

	LEAVES	STEM	FRUIT	ROOT	BULB	FLOWER
artichoke						
asparagus						
beet						
broccoli						
carrots						
cauliflower						
celeriac						
celery						
chard						
cucumber						
eggplant						
fennel						
garlic						
lettuce						
onion						
pepper						
pumpkin						
radish						
spinach						
squash						
tomato						
turnip						

DIGGING
DEEPER

Growing medical plants: the new frontier

Although the cultivation of medicinal plants is today **gaining ground** because it has become profitable, the majority of the aromatic and medicinal plants used in Italy are imported, since domestic supply cannot yet **meet** domestic demand. The market opportunities for domestic agribusinesses are very attractive, but which species should farmers grow? The experts say the first thing to do is identify which **volunteer** plants both grow locally and meet what the market wants. Farmers could increase their **income** by growing herbs in **pots**, organizing guided tours to their botanic gardens and offering training on growing techniques or the different uses of the plants.

The medicinal plant market fluctuates considerably with regard to prices and to which plants are in demand, so diversified production is best.

In recent times, the following have been in demand: anise, echinacea, lavender, **dandelion**, verbena officinalis, chamomile, passion flower, gentian, grass, **elder**, **fennel**, and, among aromatic plants, thyme, rosemary, **tarragon**, marjoram, sage, **savory** and oregano.

But the best option for small-scale growers of medicinal plants is to concentrate on organic farming, which allows them to be more competitive with foreign producers as far as quality is concerned. Organic and natural farming allow the active principles present in the different plants to be conserved. In practice, biological soil fertility will be safeguarded by using organic fertilizers, introducing crop rotation and carefully maintaining the soil structure and percentage of organic matter.



GLOSSARY



dandelion: dente di leone

elder: sambuco

fennel: finocchio

to gain ground: guadagnare terreno

to meet: (qui) soddisfare

pot: vasetto

income: reddito

savory: santoreggia

tarragon: dragoncello

volunteer: spontaneo

E. CROP PLANT ADVERSITIES



11 Listen to the recording and complete the text.

All species of plants, (1) and cultivated, are subject to disease. The occurrence and prevalence of plant diseases vary from season to season, depending on the (2) of the pathogen, the environmental conditions and the crops and varieties grown. Some (3) varieties are particularly subject to **outbreaks** of diseases; others are more resistant to (4)

Plant diseases can be broadly classified according to the nature of their primary causal agent, which is either infectious or non-infectious.

Infectious plant diseases are caused by a pathogenic (5) such as a fungus, bacterium, mycoplasma, virus or nematode. An infectious agent is capable of reproducing within or on its **host** and **spreading** from one susceptible host to another.

Non-infectious plant diseases are caused by unfavourable (6) conditions, including extremes of temperature, a disadvantageous **ratio** between moisture and oxygen, toxic substances in the soil or (7) and an excess or a deficiency of an essential mineral. Non-infectious causal agents are organisms which cannot reproduce within a host, so they (8) not transmissible.

Climate change and extreme weather events may negatively affect plant health and growth since they can **enhance** the spread of diseases and favour the (9) of pests.

In particular, the increased **moisture** after **floods** or heavy rains facilitates epidemics and the prevalence of (10) leaf pathogens. Water favours the spread of **soil-borne** pathogens to non-infected areas; water stress also diminishes plant vigour and lowers plant resistance to nematodes and insects. Dry and warm conditions promote the growth of insect vector populations, increasing (11) epidemics; warm winters increase the **overwintering** populations of all pests and (12) vectors. Air currents provide large-scale transportation for disease agents (e.g., spores of fungi) or insects from overwintering (13) to attacking areas.



Aflatoxins: toxic and carcinogenic by-products of fungi that colonise maize and groundnuts.

GLOSSARY



to enhance: accrescere
flood: inondazione
host: (pianta) ospite

moisture: umidità
outbreak: attacco
to overwinter: svernare

ratio: rapporto
soil-borne: trasmesso dal terreno
to spread: propagarsi

REVISION AND PRACTICE

VOCABULARY

► *These are the key words you have met in this Module.*

UNIT 1 • angiosperms – bryophytes – chlorophyll – chloroplast – evergreen – gymnosperms – monocots – perfect flowers – photosynthesis – Plant Kingdom – root system – shoot system – stomata – vascular bundle

UNIT 2 • bulb – dietary fibre – drupes – edible – food pyramid – grass family – infectious – pathogen – plant disease – pod – pome fruits – pulses – reproductive structure – sprouting – staple food – tuber vegetables

► *Now use some of them to fill in the blanks.*

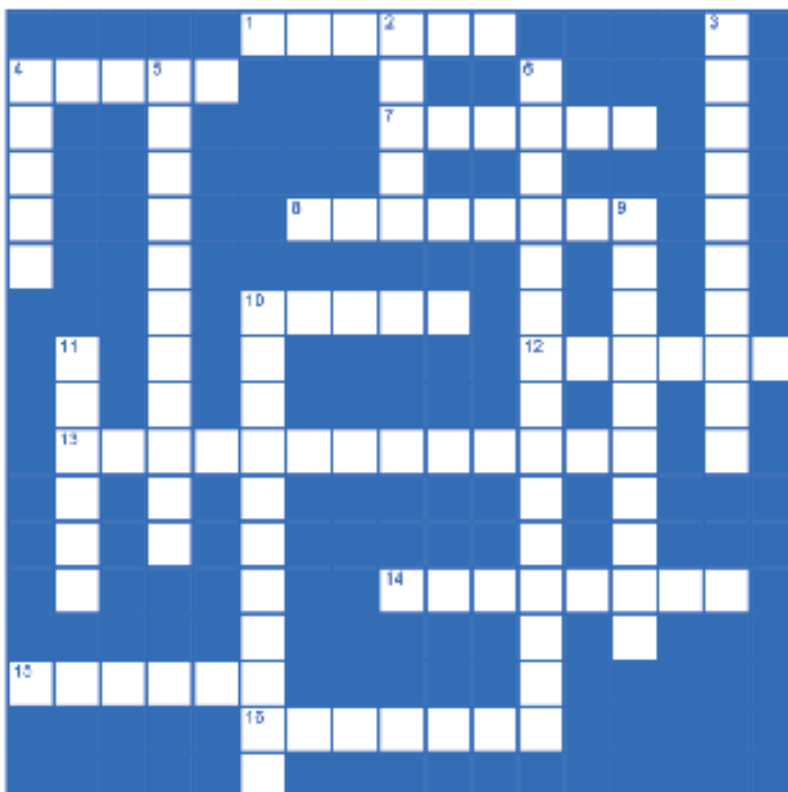
- a. The includes approximately 300,000 species.
- b. are spore-bearing plants, which include mosses, liverworts and hornworts.
- c. Any seed-bearing plants in which the ovules are enclosed in an ovary developing into the fruit are
- d. Plants are anchored in the soil by their
- e. have both male and female reproductive organs.
- f. is a carbon-fixation process.
- g. Oxygen is let out by the plant through the
- h. Cereals are annual plants belonging to the
- i. Leguminous plants, such as beans, lentils, soybeans, are also called
- j. Legumes are rich in, which helps digestion and helps reduce cholesterol level.
- k. Potatoes are the most widely grown
- l. are fruit such as peaches, plums or apricots with a single hard stone enclosing a seed.
- m. The of a plant includes flower, fruit and seed.
- n. The is a graphic representation of recommended portions of basic food groups.
- o. The green pigment of plants that traps the energy of sunlight is
- p. Trees and shrubs bearing foliage throughout the year are called
- q. are any flowering plants having single embryonic seeds and leaves with parallel veins.
- r. An elongated seed vessel of a leguminous plant, splitting open on both sides when ripe is called
- s. Adverse environmental conditions may cause plant diseases which are not

ACROSS

1. It is used to make whisky or beer.
4. Its flour is used to make bread.
7. It can be both a vegetable and a fruit.
8. They have embryo with single cotyledon.
10. The Roman goddess of the harvest.
12. Little green leaves covering the outside of a flower.
13. Taken in by the plant during photosynthesis.
14. They contain toxic substances such as solanine and chaconine.
15. It is released during respiration.
16. Its proteins are excellent substitutes for animal proteins.

DOWN

2. Language used for plant classification.
3. They are considered healthy food.
4. It is absorbed by the root system.
5. What flowering plants are.
6. He created the basis of a modern scientific classification.
9. The most commonly or regularly eaten food in a country.
10. Pigment found in the cells of leaves.
11. Their roots develop from a radicle.



GRAMMAR

1. CONNECTORS

Connectors are words which connect paragraphs, sentences or parts of them (*and, or, but, however, as, consequently, etc.*). They can express various functions, such as:

- adding information:** *and, besides, in addition, moreover, further;*
- introducing **cause:** *as, because, because of, due to, since;*
- explaining **effect:** *as a result, consequently, so, hence, therefore, thus;*
- introducing an **example** or **explanation:** *e.g., for example/instance, i.e., such as, that is;*
- underlining **contrast:** *but, despite, although/though, however, in spite of, rather than, instead, whereas;*
- explaining **purpose:** *in order to, for + -ing, so that;*
- comparing:** *as, as well as, as if, like, unlike, provided that, unless;*
- giving a **time sequence:** *as, before, after, as soon as, during, previous, next, then, until, eventually/finally, when.*

NB:

e.g. means "per esempio" and **i.e.** means "ovvero"; they are abbreviations of the Latin.

Eventually is a false friend meaning "infine".

Since means not only "da / a partire da" before a date, but also "siccome / poiché".

As means "come", but also "siccome / poiché" and "mentre / man mano che".

As and **like** mean "come".

As is usually before subject+verb, or means "in qualità di". (*As you like it* – Come preferisci; *As a teacher* – In qualità di insegnante.)

Like is followed by a noun or pronoun (*Like a rolling stone* – Come una pietra rotolante; *She speaks like him* – Parla come lui.)

► In the sentences below, underline the linking words, then translate them into Italian.

- Plants hold the soil in place, preventing erosion due to rain and wind.
- Not all trees are deciduous, e.g. evergreen trees never lose their leaves.
- Environmental conditions, such as light intensity, temperature, water availability and wind strength, affect plant growth.
- Today, although legumes are an important part of traditional diets, they are often neglected in typical Western diets.
- Most crop plants, like potatoes, tomatoes and maize, were first domesticated in South and Central America.
- Potatoes are recommended for a balanced diet. However, they also contain toxic compounds.
- Since potatoes can be propagated vegetatively, all of them are genetically identical.
- Flowers appeared during the time of the dinosaurs.
- The potato blight was cured with a solution of copper sulphate sprayed before the fungus had gained root.
- In order to safeguard the environment, there are a lot of actions you can take.
- Boil the potatoes in salted water until soft.
- To reheat rice pudding, first heat a few tbsps of water in a saucepan and then fold it into the pudding.
- Cereals are relatively easy to grow, store and transport and have a high nutritive value.

2. THE MORE... THE BETTER

Look at these examples expressing "parallel increase".

- a. The more information, the better. *Più si hanno informazioni, meglio è.*
- b. The more you study, the better! *Più studi, meglio è.*
- c. The more you eat, the fatter you get. *Più mangi, più ingrassi.*
- d. The faster the printer, the more it costs. *Più la stampante è veloce, più costa.*

Note their structure:

- in example a, there is no verb.
- in example b, there is a verb in only the first part of the expression.
- in example c, there are two verbs.
- in example d, there is a verb in only the second part of the expression.

► *Translate the sentences below into Italian.*

- a. The more you study, the better your results will be.
- b. The older potatoes are, the more toxic they will be.
- c. The more you look at it, the more difficult the problem seems to be.
- d. The sooner you do, the better.

► *Make complete sentences by matching their first and second parts.*

- | | |
|-------------------------------------|---|
| a. The better the teacher, | ☐ the higher the risk of plant diseases. |
| b. The taller the tree, | ☐ the less I understand. |
| c. The more you eat, | ☐ the longer its shadow. |
| d. The more I know about the world, | ☐ the fatter you get. |
| e. The more you have, | ☐ the emptier the head. |
| f. The fatter the wallet, | ☐ the more you want. |
| g. The worse the weather, | ☐ the more we learn. |

► *Translate into English.*

- a. Più il ristorante è famoso, più sono alti i prezzi.
- b. Più è lungo il giorno, più è breve la notte.
- c. Più è facile il lavoro, prima finisci.
- d. Più lavori, più guadagni.

COMMUNICATION

Listening

DO CALORIES AFFECT OVERWEIGHT?



Listen to the following passage and tick the statements true (T) or false (F) as appropriate, correcting the false ones.

- About one billion adults are overweight.
- Obesity is a European epidemic.
- Obesity rates have not grown in recent years.
- All diet plans are the same.
- Diets suggest avoiding carbohydrates.
- Dr George Bray studied the relationship between protein and weight.
- Twenty-five healthy adults were examined.
- Only people with high levels of protein gained weight.
- The conclusion of the study was that calories were responsible for overweight.
- A diet including fruit, vegetables, whole grains, fish, vegetable oils and nuts helps reduce obesity and obesity-related diseases.

T	F
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐



Speaking

HOW TO FEED YOUR CHILD HEALTHILY

- Using the hints below as a guideline, build up a dialogue between a child nutritionist (Student A) and a mother (Student B) on an Internet forum.

Recommended overall calorie intake for 4-8 years old:

1400 CALORIES PER DAY FOR BOYS	1200 CALORIES PER DAY FOR GIRLS
• 350-500 calories from fat • 900-1050 calories from protein and carbohydrates which must include the following: – 450 grams of fat-free milk per day – 113 grams of meats/proteins per day – 1½ cup of fruits per day – 1½ cup of vegetables per day – At least 140 grams of grains per day (for example, one slice of whole grain bread = 28 grams) – 25 grams of fibre per day Additional calories should be used as carbohydrates.	• 300-450 calories from fat • 750-900 calories from protein and carbohydrates which must include the following: – 450 grams of fat-free milk per day – 85 grams of meats/proteins per day – 1½ cup of fruits per day – 1 cup of vegetables per day – At least 113 grams of grains per day (for example, one slice of whole grain bread = 28 grams) – 25 grams of fibre per day Additional calories should be used as carbohydrates.



Tips for feeding your child:

- different diets for different children
- choose a variety of food
- serve healthy homemade unprocessed food
- parents' example is essential

STUDENT A	STUDENT B
Greet. Offer help.	Greet. Ask for suggestions about healthy meals for kids.
Suggest considering some parameters.	Introduce your child.
Suggest a diet.	Ask what food should be chosen.
Stress the importance of food variety.	Ask about processed/natural food.
Explain what the best is.	Ask about teaching healthy eating habits.
Stress the importance of parents' example.	Say thank you.

Reading

RICE: A STAPLE FOOD

► Read the following text on rice and fill in the gaps with the following words:

agriculture – ancient – countries – cultivation – fertilizing – harvesting –
predominant – soil – value – white

History of rice cultivation

Rice has been cultivated in China since (1) times and was introduced to India before the time of the Greeks. Chinese records of rice (2) go back 4,000 years. In classical Chinese the words for (3) and for rice culture are synonymous, indicating that rice was already the staple crop at the time the language was taking form.

Today, rice forms the main source of food for nearly half of the world's population. It is the (4) dietary energy source for seventeen countries in Asia and the Pacific, nine in North and South America and eight in Africa. Rice provides 20% of the world's dietary energy supply, while wheat supplies 19% and maize 5%.

Cultivation and harvesting

Methods of growing differ greatly in different localities, too, but in most Asian (5) the traditional hand methods of cultivating and harvesting rice are still practiced. The fields are prepared by **ploughing**, (6) , and **smoothing**. The **seedlings** are started in seedling beds and after 30 to 50 days transplanted by hand to the fields, which have been flooded by rain or river water.

Rice is usually harvested when the grains have a moisture content of around 25 percent.

(7) , which is carried out manually, is followed by **threshing** either immediately or within a day or two.

Importance of rice as a food

The nutritional (8) of rice depends on its **strain** – white, brown, black, red and purple – each prevalent in different parts of the world. It also depends on the nutrient quality of the (9) rice is grown in, whether and how the rice is polished or processed, the way it is enriched, and how it is prepared before consumption. Brown or red rice has a greater food value than (10) , since

the outer brown coatings contain the proteins and minerals while the white endosperm is chiefly carbohydrate.



GLOSSARY



to plough: arare
seedling: piantina
to smooth: spianare,
livellare
strain: varietà
threshing: trebbiatura

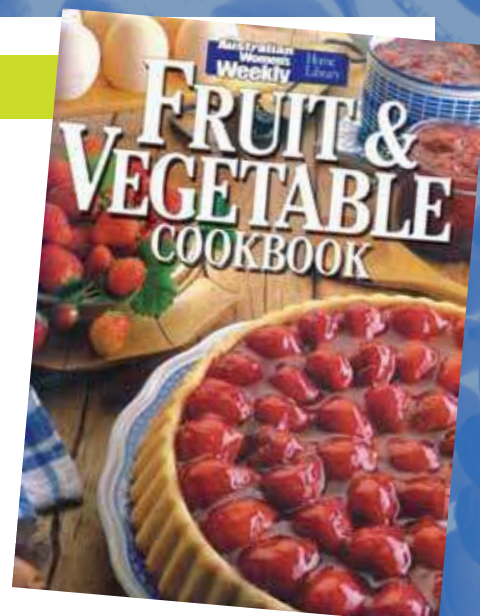
Writing

COOKING AND JOKING

► Write down a fruit/vegetable recipe, referring to the examples given in Unit 2, Activities 3 and 7.

► Fill in the table matching each English saying with its corresponding Italian and write what it means.

- Una mela al giorno toglie il medico di turno.
- Usare il bastone e la carota.
- Essere come due piselli in un baccello.
- Una mela marcia ne guasta una cesta piena.
- Rompere le uova nel paniere.
- Tale padre, tale figlio
- Ti abbiamo passato una patata bollente.
- L'erba del vicino è sempre più verde.
- Voler avere la botte piena e la moglie ubriaca.



ENGLISH SAYING	ITALIAN SAYING	MEANING
An apple never falls far from the tree.	<i>Tale padre, tale figlio.</i>	A person inevitably resembles his or her parents or family.
An apple a day keeps the doctor away.		
The grass is greener on the other side of the fence.		
To use a carrot-and-stick approach.		
To be like two peas in a pod.		
The rotten apple injures its neighbour.		
To upset the apple cart.		
You can't have your cake and eat it, too.		
That sounds like a hot potato for you.		

HISTORY

The potato famine in Ireland

The potato originated in the Andes Mountains of Peru, South America. In the early 1500s, Spanish conquerors brought it back to Europe and, about in 1590, potatoes were introduced to Ireland where farmers quickly discovered they thrived in their country's cool moist soil with very little labour and could feed a family for a year with the leftovers going to the family's animals. Ireland in the mid-1800s was an agricultural nation, populated by eight million people who were among the poorest in the Western World: this impoverished and rapidly growing rural population had become almost totally dependent on one crop.

Potatoes were therefore the staple diet of the rural population: Irish peasants were actually healthier than peasants in England or Europe where bread, far less nutritious, was the staple food.

Specifically, the Irish planted the Lumper potato variety. Since potatoes could be propagated vegetatively, all of them were clones, genetically identical to one another. But evolutionary theory suggests that populations with low genetic variation are more vulnerable to changing environmental conditions than populations with high genetic variation. That is why the genetically identical lumper potatoes were all susceptible to a rot caused by *Phytophthora infestans*, which turned non-resistant potatoes to inedible slime. No cure existed in Ireland for the dreaded 'potato blight' and, even if a cure had existed, the people on the land would not have been able to afford it. It was not until 1882, almost 40 years after the famine, that scientists discovered a cure for *Phytophthora infestans*: a solution of copper sulphate sprayed before the fungus had gained root.

Sporadic potato crop failures had already plagued Ireland in the 1700s and early 1800s. In 1844, the blight caused by a fungus had been identified in America, France and in the Isle of Wight, but the wet and mild summer of 1845 had the perfect weather conditions for this disease to spread in Ireland.

Potatoes are propagated vegetatively, so diseased potatoes used as planters sprouted diseased shoots. Not all of the potatoes were infected the first year, so farmers replanted the same potatoes during the next few years hoping for better results. The situation worsened as the spores spread.

Lasting for six years, the Irish Famine, known as "The Great Hunger," was the great turning point in Irish history. It changed the society forever, reducing the population by 2 million people (25% of the total): half of these died of starvation or diseases associated with the famine and half emigrated to North America or Great Britain.

The famine led to severe poverty and homelessness, which in turn led to unsanitary conditions and diseases such as cholera, dysentery, scurvy, typhus and lice infestations.

The horrors of the potato famine were worsened by the inadequacy of relief efforts by the British Government, which was sharply criticized for its *laissez-faire* economic policy and particularly because it allowed food to be exported to other countries while Ireland was starving. That was the consequence of the Protestant evangelical belief in divine Providence, and the ethnic prejudice (called moralism) of the educated British middle classes against the Catholic Irish, guilty of being lazy, inefficient, violent and responsible for the calamity.



Dublin, Potato Famine Memorial for the victims of the potato blight in the mid-1800s.

► Write the questions for the following answers.

- a. Potatoes were introduced to Ireland around 1590.
- b. Ireland was essentially an agricultural country.
- c. Because the Lumper variety had low genetic variation, so it was more vulnerable to the rot caused by *Phytophthora infestans*.
- d. The potato blight was cured with a solution of copper sulphate sprayed before the fungus had gained root.
- e. The population was reduced by 2 million people.
- f. The most widespread diseases were cholera, dysentery, scurvy and typhus.
- g. The relief efforts by the British Government were completely inadequate.
- h. The Irish were considered by the British middle class to be lazy, inefficient, violent and responsible for the calamity.

GLOSSARY



copper sulphate: solfato di rame
famine: carestia
guilty: colpevole
inedible: non commestibile
leftovers: avanzzi
lice (sing. louse): pidocchi
moist: umido
to plague: affliggere
planter: patata da semina
potato blight: peronospora delle patate
relief efforts: soccorsi
rot: marciume, decomposizione
scurvy: scorbuto
slime: poltiglia
to sprout shoots: germogliare
starvation: fame
to thrive: crescere vigoroso

