



Education resources – phase 4

A guide for teachers



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This document is designed to offer guidance to teachers to provide an overview of the CommNet project, including an overview of the toolkit and the range of resources that can be used to support a range of learning activities.

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Introduction

CommNet is a three year European Union (EU) project which aims to help people understand more about EU-funded research projects on food, fisheries, agriculture and biotechnology research.

To ensure bio-economy research is relevant and accessible to adults and children, politicians and industry, media and teachers, a variety of different activities are being undertaken. This work includes communications training and media promotions, building networks with industry and government and the development of an educational toolkit for children and young people.

The CommNet Toolkit has been developed to provide educators and learners with a collection of resources for schools about agriculture, fisheries, food safety, traditional and modern biotechnology, health and nutrition throughout Europe.

This guide is for phase 4 – pupils aged 14 to 16 years (approximately). They have been designed to be used as a set or individually – the choice is yours.



The CommNet Competence Framework

The CommNet Education Toolkit is based on a competence framework. The CommNet Competence Framework is a progressive tool that identifies three areas of knowledge:

- where does food come from;
- know about your food,
- you and your food.

These areas of knowledge have been identified through analysis of European funded FP6/7 projects. Under each of these areas are key subject themes, supporting the development of children's and young people's knowledge. These themes are underpinned by the development of knowledge and understanding related to food sustainability, food safety and biotechnology.

The nature of these subjects dictates that they are interrelated and therefore can be identified across themes. The framework is based on classroom learning skills which increase in difficulty ensuring progression across the themes.

The frameworks not only shows the areas of knowledge that we believe children and young people should demonstrate an awareness of or understand, but also how this should be differentiated for different ages and abilities.

The CommNet Education Toolkit divides the age range into the following phases:

- Phase 1: 5 to 8 years
- Phase 2: 8 to 11 years
- Phase 3: 11 to 14 years
- Phase 4: 14 to 16+ years



However, the ages within these phases may be different depending on the Member State in which you work. This therefore, only acts as a guide, showing progression in understanding from one phase to the next. The competences are progressive and cumulative from one age phase to the next.

The framework could be used in a variety of ways, such as:

- a guide for developing resources for children and young people;
- an audit tool for schools and other settings to plan lessons;
- support for curriculum development.

The CommNet Competence Framework for Children and Young People about Food, Fisheries, Agriculture and Biotechnology can be found at www.commnet.eu

The resources: Phase 4

The teaching resources and activities have been designed to develop the learning of pupils aged 11 to 16+. They can be used in a flexible way to support teaching and learning across a range of curriculum subjects.

The resources for *Where does food come from?* are divided into two main sections:

- Agriculture
- Biotechnology

In total, there are five presentations, three work sheets and two activities to use. Within each section there are a range of resources that relate to one or more of the competences. These are outlined below.



Key:

- P electronic presentation
 WS work sheet
 A activity

Phase 4 Agriculture	Resource	Competence(s)
Food production and processing	P WS	To be able to describe some new technologies that may impact on food production and processing. To be able to explain the effects of <ul style="list-style-type: none"> • food processing • food and drink fortification • cooking on the nutritional value of food and drinks.
Food production – farm to fork	P	To gain an overview of food production, from farm to fork, in Europe. To gain an overview of food production in the rest of the world.
Sustainable food production and processing	P WS	To be able to define factors contributing to sustainable food production and processing. To recognise how agriculture, farming and fishing impacts on the environment. To be aware of some the different initiatives being taken in farming and fishing in the EU to help protect and enhance the environment.

Phase 4 Biotechnology	Resource	Competences
Food technology and biotechnology	P A A WS	<p>To understand that food and drinks can be reformulated to improve their taste and/or nutrient profile.</p> <p>To be able to define modern biotechnologies and understand how they are used in food and drink production.</p> <p>To consider the possible future developments in biotechnology for food production.</p>
Nanotechnology	P	To explain the scientific principles of different modern biotechnologies e.g. genetically modified organisms, nanotechnology.



Learning activities

A range of downloadable resources have been developed for use in the classroom. They can be used to support the development of the competence framework and/or specific areas of your curriculum. This might include science, global citizenship, food and nutrition and geography. Here are some examples.

Competence(s)	Activity	Resources
To be able to describe some new technologies that may impact on food production and processing.	Show the pupils the presentation Food Production and Processing. Look at some examples of functional and/or fortified foods. Discuss the benefits and challenges for the consumer. Complete the worksheet Food Processing.	Presentation Phase 4 Food production and processing Worksheet Phase 4 Food processing
To gain an overview of food production, farm to fork in Europe. To gain an overview of food production in the rest of the world.	Challenge the pupils to think of as many different foods that are grown, reared and caught in EU member states. Ask them to identify the different factors that affect what is grown and/or reared in different countries.	Presentation Phase 4 Food production farm to fork
To be able to define factors contributing to sustainable food production and processing.	Ask the pupils to define sustainable agriculture and what they think can be done to improve sustainability in food production. Show the presentation Sustainable food production (and processing). Carry out activity 1 and/or 2.	Presentation Phase 4 Sustainable food production (and processing) Activity Phase 3/4 Sustainable food
To define biotechnology. To understand areas of <ul style="list-style-type: none"> • traditional biotechnology; • modern biotechnology; • future uses of biotechnology. 	Show the presentation What is biotechnology?/Food technology and biotechnology and introduce the pupils to traditional and modern biotechnology. Look at some examples of food ingredients that are produced through traditional biotechnology methods. Create a timeline to trace the milestones in food development through biotechnology.	Presentation Phase 4 What is biotechnology? (Food technology and biotechnology)

<p>To understand the basic scientific principles of biotechnology.</p>	<p>Introduce the pupils to modern biotechnology and genetically modified foods.</p> <p>Organise a class debate/discussion on the use of genetically modified food.</p>	<p>Activity Phase 4 Biotechnology discussion</p>
<p>To define nanotechnology.</p>	<p>Introduce the pupils to the concept of nanotechnology.</p>	<p>Presentation Phase 4 Nanotechnology</p>