

# Food Science 12

*Outcomes*

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# Food Science 12

## Specific Curriculum Outcomes

Students will be expected to

### Food Constituents (25%)

#### **FOOD CONSTITUENTS**

- 1.1 identify and describe science- and technology-based careers related to food science
- 1.2 analyze a food package ingredient listing

#### **CARBOHYDRATES**

- 1.3 explain and describe the function/properties of other starches, including carbohydrates and cellulose, pectins, and gums

#### **LIPIDS**

- 1.4 identify and describe the properties and functions of lipids

#### **PROTEINS**

- 1.5 describe the structure of proteins found in various foods, including essential amino acids

#### **WATER AND OTHER CONSTITUENTS IN FOOD**

- 1.6 summarize the functions of water in food preparation and food development
- 1.7 explain the functions and basic properties of emulsifiers, organic acids, vitamins, enzymes, antioxidants, colour, and flavour
- 1.8 design an experiment, identify specific variables, and perform it

### Preservation Factors (25%)

#### **FOOD MICROBIOLOGY AND FOOD SAFETY: FERMENTATION MICROBIOLOGY**

- 2.1 explain how the metabolism of microorganisms introduce new desirable flavours, ingredients, and physical properties to the foods

#### **FOOD MICROBIOLOGY AND FOOD SAFETY: PRESERVATION MICROBIOLOGY**

- 2.2 explain food spoilage in terms of the growth of microorganisms (appearance of off-flavours, off-odours, slime, visible growth)
- 2.3 describe the role that processing and food additives play in eliminating, inhibiting, or delaying the growth of spoilage microorganisms

**FOOD MICROBIOLOGY AND FOOD SAFETY: FOOD SAFETY MICROBIOLOGY**

- 2.4 explain simple measures that can be taken to keep foods safe
- 2.5 explain how viruses, bacteria, moulds, and parasites can cause disease

**EVOLUTION OF FOOD PRESERVATION**

- 2.6 explain practical methods of food preservation

**COOLING**

- 2.7 explain the use of chilling and cold storage of fresh foods in terms of preservation

**HEATING**

- 2.8 identify and give examples of the different types of high temperature cooking

**FERMENTATION**

- 2.9 describe the fermentation process and make a fermented product

**DRYING PROCESSING TECHNIQUES**

- 2.10 explain what water activity is, why it is important, and how it can be controlled

**Food Quality and Commodities (25%)****FOOD COMMODITIES**

- 3.1 analyze the properties of specific food commodities
- 3.2 select and use different resources and materials to collect information about their commodity
- 3.3 devise and conduct an experiment on their commodity

**FOOD QUALITY**

- 3.4 identify psychological factors used to market and develop food products
- 3.5 collect and compare sensory data

**PRODUCT DEVELOPMENT—SCHEMES AND STAGES**

- 3.6 explain how well a product is designed to meet consumer wishes

**Food Packaging (25%)****FOOD PACKAGING AND FOOD LABELS**

- 4.1 explain the functions and considerations for food packaging
- 4.2 identify and explain the information required for labels on food products made in Canada

**NEW FOOD PRODUCT**

- 4.3 design, develop, make, and present a food product identifying and anticipating major variables that may impact on the final quality of the product