

Food Science 12

Foundational Outcomes

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EECD has made suggestions for prioritizing outcomes to assist teachers as they support student learning. Teachers will need to make their professional decisions based on the needs of their students.

The Foundational Outcomes identified in this document represent outcomes determined to be relevant for future learning in the discipline. Decisions about foundational outcomes were made in consultation with teachers, science specialists and post-secondary institution expectations. The foundational outcomes are meant to guide teachers in making decisions about creating learning experiences that will prepare and engage their learners in a responsive way. However, a teacher's professional judgment remains the most crucial factor for responding effectively to the needs of learners.

It might be relevant for teachers to review or to seek out learning outcomes from an earlier curriculum or grade level in order to support learners moving forward with current curriculum. Sometimes, however, current curricular learnings do not directly rely on learning from the previous year and current curriculum can be engaged in without additional review.

The learning environment (face-to-face, blended, online) will continue to be an important factor that will impact the types of learning experiences with which learners are able to engage. While learning science in a hands-on, experimental way is preferred, should laboratory experiments not be possible due to public health concerns, teachers are encouraged to offer online experiment simulations, to record scientific phenomena to discuss, notice, observe and unpack with learners, to support simple, safe experiments that could be done at home, to provide authentic data that can be analysed etc...

Integrated, project-based learning and inquiry-based learning (especially in areas that connect STSE) allow for learner choice and flexible pacing which is particularly effective for students to not only learn new concepts but also for demonstrating their learning.

It is suggested that the focus for science in grades 9-12 be on using the foundational outcomes to focus on foundational understandings for future learning, encouraging cross-cutting scientific themes and application of learning. Weighting for course modules should be reflective of the amount of time spent exploring the outcomes in the module.

Unit 1: Food Constituents

Subtopic: FOOD CONSTITUENTS

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

Subtopic: CARBOHYDRATES

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

Subtopic: LIPIDS

- 1.4 identify and describe the properties and functions of lipids

Subtopic: PROTEINS

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

Subtopic: 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

Unit 2: Preservation Factors

Subtopic: 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)

Subtopic: FOOD MICROBIOLOGY AND FOOD SAFETY: FOOD SAFETY MICROBIOLOGY

- 2.4 explain simple measures that can be taken to keep foods safe

Subtopic: COOLING

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

Subtopic: HEATING

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

Subtopic: FERMENTATION

- 2.9 describe the fermentation process and make a fermented product

Subtopic: DRYING PROCESSING TECHNIQUES

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

Unit 3: Food Quality and Commodities

Subtopic: FOOD COMMODITIES

- 3.1 analyze the properties of specific food commodities

Subtopic: FOOD QUALITY

- 3.5 collect and compare sensory data

Unit 4: Food Packaging

Subtopic: 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