

Oceans 11

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: Structure and Motion

Subtopic: OCEANS, SEAS, GULFS, AND STRAITS

- identify oceans and related water areas in the world and describe related science and technology-based careers (OSM-1)

Subtopic: OCEAN CURRENTS

- identify, explain, and show how ocean currents' Coriolis effect, and thermohaline currents are related (OSM-4)

- identify and describe wave motion found in the marine environment and in everyday situations (OSM-5)

Subtopic: TIDES

- identify and describe tide theory and types of tides (OSM-6)

Unit: Marine Biome

Subtopic: LIFE IN THE OCEANS

- explain the marine biome and describe the biodiversity of ocean life and determine interconnections that exist within the marine biome (MBIO-1)

Subtopic: HABITATS

- compare representative marine organisms and communities (MBIO-2)

Subtopic: OPEN OCEAN VERSUS COASTAL AREAS

- compare characteristics of the open ocean and coastal zones referencing terms and impact on local ecosystems (MBIO-3)

Unit: Coastal Zones

Subtopic: VARIATIONS IN COASTAL ZONE STRUCTURE AND PROPERTIES

- describe and explain the causes and characteristics of major types of coastal zones (CZON-2)

Subtopic: KEEPING OUR COASTAL ZONES

- discuss the purpose and process of integrated coastal zone management and analyze a coastal zone management structure and the interrelationships found in a local area (CZON-5)

Choose one of either Aquaculture or Fisheries.

Unit: Aquaculture

Subtopic: WHAT SPECIES? WHERE? WHY?

- describe and identify groups of organisms raised through aquaculture and their geographic locations, referring to anatomy and physiology of a major species and ecology of cultured species (AQUA-2)

Subtopic: SITE ACCEPTANCE BY THE COMMUNITY

- analyze site planning from various perspectives and report on both the risks and benefits to society and the environment (AQUA-4)

Subtopic: MARKETING THE PRODUCT

- identify, analyze, and evaluate various aquaculture business opportunities (AQUA-5)

Unit: Fisheries

Subtopic: FISHERIES ARE A UNIQUE RESOURCE

- explain the importance of a sustainable fishery as a resource to global and local food supply and employment with reference to terminology (FISH-1)

Subtopic: LIFE CYCLE

- describe, identify, and analyze the external and internal anatomy of a major finfish or shellfish species that is part of the commercial fishery (FISH-2)

Subtopic: FISH POPULATION AND MANAGEMENT

- compile and organize fish population data and explain the dynamic interrelationships among the physical environment, the biological environment, and the health and distribution of a fish stock (FISH-4)