

# Oceans 11

## Specific Curriculum Outcomes

Students will be expected to

### Structure and Motion (25%)

#### **OCEANS, SEAS, GULFS, AND STRAITS**

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

#### **THE OCEAN BOTTOM: ORIGINS AND BATHYMETRY**

- analyze the basic structure of Earth's waters using evidence and information to support your findings (OSM-2)

#### **THE PROPERTIES OF SEAWATER**

- identify, collect data, and describe the unique properties of water (OSM-3)

#### **OCEAN CURRENTS**

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

#### **OCEAN CURRENTS (EXTENSION)**

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

#### **TIDES**

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

### Marine Biome (25%)

#### **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)

**HABITATS**

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

**OPEN OCEAN VERSUS COASTAL AREAS**

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

**THE FIELD TRIP**

- develop and report appropriate sampling procedures to obtain quantitative data on the abundance of marine organisms at a local coastal area and describe and apply classification systems and nomenclatures to organisms found in the marine biome (MBIO-4)

**ORGANISMS AND HABITATS**

- explain how a particular organism functions in its habitat (MBIO-5)

**Coastal Zones (compulsory, 25%)****IDENTIFYING COASTAL ZONES**

- discuss the concept of coastal zones and how these vary around the world (CZON-1)

**VARIATIONS IN COASTAL ZONE STRUCTURE AND PROPERTIES**

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

**THE IMPORTANCE OF COASTAL ZONES TO HUMANS**

- identify and explain sustainability and human use of an environment, including populations and resources, locally and globally (CZON-3)

**KEEPING OUR COASTAL ZONES**

- list and discuss human interactions with the processes involved in the coastal zone environment, and describe competing views (CZON-4)
- 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.

**Aquaculture (25%)****FARMING, FISHING, AND FOOD**

- identify, and compare aquaculture locations and species grown in Nova Scotia, in the rest of Canada, and globally (AQUA-1)

**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)

**WATER QUALITY**

- describe, measure, and analyze conditions for aquaculture operations (AQUA-3)

**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)

**MARKETING THE PRODUCT**

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

**AQUACULTURE-RELATED ISSUES**

- explain aquaculture-related issues (AQUA-6)

**Fisheries (25%)****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)

**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)

**MODELS OF FISH STOCKS**

- construct, interpret, and evaluate various ecological factors (FISH-3)

**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)

**TECHNOLOGY IN THE FISHERIES**

- compare the risks and benefits to society and the environment of applying scientific knowledge or introducing a technology to the fisheries (FISH-5)

**WHAT DOES MANAGEMENT MEAN?**

- identify, describe, and analyze multiple perspectives of the main organizations in research and decision making in fisheries management in Canada (FISH-6)