

## Marine Biology Chapters 1, 2 and 3: Study Guide

### Chapter 1

- Vocabulary

Scuba

Sonar

Remotely operated vehicle (ROVs)

- Know what marine biology is
- Know the importance of the ocean
- Know the history of marine biology
- Know the influential scientists and explorers of the past

Aristotle

Cook

Forbes

Columbus

Edwards & Andouin

Magellan

Darwin

- Know the importance of the HMS *Beagle* and the HMS *Challenger*
- Know what a chronometer is and what it does
- Know what sonar and scuba are and how they are important in modern marine biology
- Know how modern technology has helped marine biologists
- Know the blue box *Eyes (and Ears) in the Ocean* on page 9

### Chapter 2

- Vocabulary

Continental margins

Seamounts

Abyssal plain

Continental shelf

Shelf break

Guyots

Continental slope

Deep-sea fans

Central rift valley

Continental rise

Active margins

Sulfides

Submarine canyons

Passive margins

Black smokers

Hydrothermal vent/deep-sea hot springs

- Know the difference between the two types of margins and examples of each
- Know the division of the bottom of the ocean floor and characteristics of each
- Know what the mid-ocean ridge and deep-sea trench are and what happens at each
- Know what hydrothermal vents, how they form and how they work
- Know the blue box *Hot springs and the Creation of the Hawaiian Islands* on page 35

### Chapter 3

- Vocabulary

Coriolis effect

Wavelength

Centrifugal force

Trade winds

Period

Tidal range

Westerlies

Fetch

Spring tides

Polar easterlies

Seas

Neap tides

Equatorial currents

Swells

Semi-diurnal tides

Gyres

Break

Mixed semidiurnal tide

Waves

Surf

Diurnal tides

Crest

Wave reinforcement

Tide tables

Trough

Cancel

Stratified

Height

Tides

Unstable

Overturn	Surface layer	Intermediate layer
Water mass	Mixed layer	Main thermocline
Circulation	Thermoclines	Deep and bottom layers

- Know what drives currents, waves and winds
- Know what the Coriolis effect and what it does
- Know the differences between trade winds, westerlies and polar easterlies
- Know how surface currents of water transport heat and why that is important
- Know the structure of waves and the types of waves and where they form
- Know what it is called when waves meet each other at different angles
- Know what forces create tides and how
- Know the different types of tides and how they form
- Know the difference between semi-diurnal tides, mixed diurnal tide and diurnal tides
- Know what a tide table does
- Know how density and temperature affects the stratification of the ocean water
- Know what situations result in stable and unstable water columns
- Know the blue box *Tall Ships and Surface Currents* on page 54
- Know the blue box *Waves that Kill* on page 56 and 57

#### **Hydrothermal Vents article**

- Know what hydrothermal vents are, where they are found and how they are formed
- Know what a black smoker is
- Know the difference between a focused vent and a diffuse vent

#### **Creatures of the Thermal Vents article**

- Know what a hydrothermal vent is and how it forms
- Know the types of creatures that can form around vents and how they are able to survive
- Know why hydrogen sulfide is important for the vent ecosystem