

Name: _____ Period: _____ Date: _____

Hydrosphere Unit Study Guide

Below is a list of terms and concepts that we have learned throughout the hydrosphere unit. Look over your science journal, worksheets, labs, and textbook to review for the test.

Please Note: Terms and concepts are organized by chapter and section. However, not all terms/concepts are mentioned in book and must be found using worksheets or labs we have completed.

The test will be on: _____

Section 14.1: “The Vast World Ocean”

- Amount of Earth covered by water
- Four oceans: What are they? Largest? Smallest? Locations of each?
- How do scientists study the ocean floor?
- How does sonar work?

Section 14.2: “Ocean Floor Features”

- Major regions of the ocean floor (Continental margin and ocean basin)
- Where are these regions located? Describe each.
 - Continental shelf
 - Continental slope
 - Continental rise
 - Abyssal plain
 - Ocean trench
 - Seamount
- What is an active margin? What is a passive margin? What features will you find at each?
- What energy resources do we obtain from the ocean floor?

“Properties of Water” (not in book)

- Is water a covalent or ionic compound?
- Draw a diagram of a water molecule.
- What makes water a polar molecule?
- What are some of the interesting properties of water that result from its polarity?
- Describe how surface tension is related to the property of cohesion.
- Why is water able to flow upwards through a coffee filter?
- Why is water able to dissolve NaCl? Draw a diagram if you need to.

Section 15.1: “The Composition of Seawater”

- What is salinity? How is it expressed (what units)?
- What processes cause seawater salinity to increase? Decrease?
- What are the two main properties that influence the density of water?
- Ocean temperature layers: surface zone, thermocline, deep zone
- Why is the Dead Sea so salty, and why is it easier to float in this water?

Section 15.2: “The Diversity of Ocean Life”

- Different categories of ocean life: benthos, plankton, nekton
- What are the two types of plankton?
- Different biological zones: intertidal zone, neritic/oceanic zones, benthic environment
- What types of organisms make up the bottom of the food chain in the oceans? Where in the oceans can these organisms be found, and WHY?
- What type of ecosystem can be considered the “rain forest of the sea”?
- Where in the deep ocean do we find tremendous biodiversity completely isolated from the sun? Describe some of the extreme conditions organisms must withstand to live here.
- What happens to the pH of ocean water when it absorbs more CO₂ from the atmosphere? (*HINT* → *Think about what happened in the core.*)

Section 16.1: “Ocean Circulation”

- Surface currents: What controls how they move?
- Ocean gyres
 - Why do currents tend to circulate in gyres?
 - Name the five main gyres.
 - How do they move depending on the hemisphere?
- Coriolis effect: What is it? What effect does it have on winds and ocean currents?
- Surface currents and climate
 - What determines whether a surface current is considered a warm or cold current?
 - How do surface currents affect the climates of different areas?
 - What is the Gulf Stream?
- Deep ocean currents: effects of density and sinking water at the poles
- What is the global conveyor belt?
- Upwelling
 - Causes and results
 - How does upwelling affect living organisms of the ocean?

Section 16.2 “Waves and Tides”

- Parts of a wave
- Out at sea, do waves transport water? What do they transport?
- How do waves change as they approach the shore, and why?
- What are waves on the surface of the earth caused by?
- What is a tsunami? What causes a tsunami to occur?
- How are tsunamis different from wind-driven waves?

Extra textbook review questions:

- p. 417: #1 – 6
- p. 443: #1 – 8, #13 – 18
- p. 471: #1 – 6, #11 – 18