

April 27, 2015

Warm-Up

Today you will need your pencil and notebook.

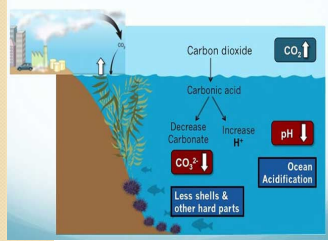
Please pick-up your weekly homework page!

- Review: What affect does extra carbon dioxide in the atmosphere have on the oceans?

Ocean Acidification

Ocean Acidification


1. How have changes in atmospheric composition contributed to ocean acidification?




The diagram shows carbon dioxide (CO₂) from the atmosphere entering the ocean. It reacts with water to form carbonic acid, which then dissociates into bicarbonate and hydrogen ions (H⁺). This process leads to a decrease in carbonate ions (CO₃²⁻) and an increase in H⁺, resulting in a lower pH (acidification). This causes marine organisms to produce fewer shells and other hard parts.

30-40% of the CO₂ released by humans into the atmosphere dissolves into the oceans causing a decrease in pH

Florida Keys



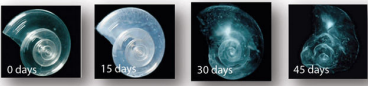
1980



2010

2. How does ocean acidification effect ocean life?

- Bleaching of coral reefs (unhealthy → death)
- Inhibit shell growth
- Possible link to reproductive disorders in some fish



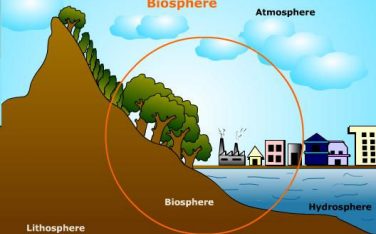
0 days, 15 days, 30 days, 45 days

Biosphere

• **Definition:**

- All organisms on the Earth as well as the environments in which they live


• **Examples:** Plants and animals



The diagram shows a cross-section of the Earth with the biosphere circled in orange. It includes the lithosphere (land), hydrosphere (water), and atmosphere (air). A house and trees are shown within the biosphere.

Ecosystem

- Root of ecology is the Greek word: *oikos* meaning “house”
- Ecosystem literally means a “system of houses”



• **Definition:**

- A community of living and nonliving things in an environment.

3 Main Scales of Ecosystems

	Scale	Examples
Small	<u>Micro</u>	puddle, tree trunk, under a rock
↓	<u>Messo</u>	Forest or a large lake
Large	<u>Biome</u>	Desert

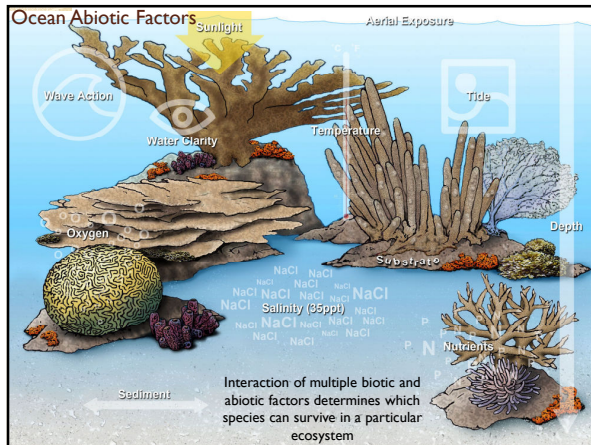
Challenge!

- How many ecosystems (all scales) can you spot and name in the following video clip?
https://www.youtube.com/watch?v=NXJEUc8_Dns

Biotic and Abiotic

Homework

- **Biotic Definition:**
 - Living things in an ecosystem
- **Examples:**
 - plants, animals, fungi, algae, and bacteria
- **Abiotic Definition:**
 - Non-living things in an ecosystem
- **Examples:**
 - sunlight, temperature, water, wind or water currents, air, soil



Activity! Ocean Abiotic Factors

- **Goal:** Learn more about abiotic factors and physical processes that impact ocean ecosystems
- **Please follow the directions on the handout and turn-in** at the end of class.