CHAPTER 3 Ecosystems: What Are They & How Do They Work?

Core Case Study: Tropical Rainforests Are Disappearing

Rainforests only cover ____% of the Earth, but contain up to _____ of the world's _____.

What is the tropical rainforest land being used for when it is cut down?

What are the 3 harmful effects of disrupting these ecosystems?

1.

2.

3.

3-1: What Is Ecology?

Prokaryotic Cell vs. Eukaryotic Cell

Ecology is the study of-

Ecology Levels of Organization from simplest to broadest

LEVEL	DESCRIPTION	PICTURE
1. Organism		
2. Population		
3. Community		
4. Ecosystem		
5. Biosphere		

Science Focus: Have You Thanked the Insects Today?

Give examples of why insects are an important part of the earth's natural capital.

3-2: What Keeps Us and Other Organisms Alive?

Earth's life support system has 4 components:

1. Atmosphere	Troposphere- Greenhouse gases-
2. Stratosphere	
3. Hydrosphere	
4. Geosphere	

Terrestrial biomes have distinct _____.

Examples of biomes found across 39th parallel in US:

Aquatic life zones include _____.

Three factors that sustain life on Earth:

1.

2.

3.

Explain what happens to solar energy as it reaches the Earth.

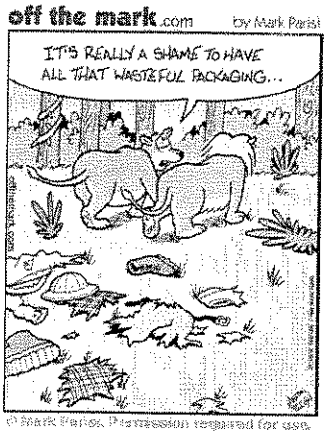
What is the natural greenhouse effect? Why is the greenhouse effect good to a certain point?

3-3: What Are The Major Components of an Ecosystem?

Biotic Factors vs. Abiotic Factors

Explain the term "range of tolerance" in relation to trout. Use Figure 3-10 for help.

How do limiting factors regulate population growth? Give an example.



Draw a food chain using Figure 3-9.

Trophic levels-

Producer	
Primary Consumer	
Secondary Consumer	
Tertiary Consumer	
Omnivore	
Decomposer	
Detritivore	

Aerobic Respiration vs. Anaerobic Respiration

Science Focus: May of the World's Most Important Species Are Invisible To Us
What are micro-organisms and why are they so important?

3-4: What Happens to Energy in an Ecosystem?

Food Chain vs. Food Web

What is biomass and what happens to biomass as you move up a food chain?

What is ecological efficiency and what happens to it as you move up a food chain?

**This is difficult- make sure you really understand the next two terms:

Gross Primary Productivity vs. Net Primary Productivity

Which terrestrial ecosystem has the highest NPP? Why do you think that is?

Which aquatic ecosystem has the highest NPP? Why do you think that is?

3-5: What Happens to Matter in an Ecosystem?

What is the importance of biogeochemical cycles?

Summarize each cycle below (This is a really important concept!)

1. Water Cycle	
2. Carbon Cycle	
3. Nitrogen Cycle	
4. Phosphorus Cycle	
5. Sulfur Cycle	