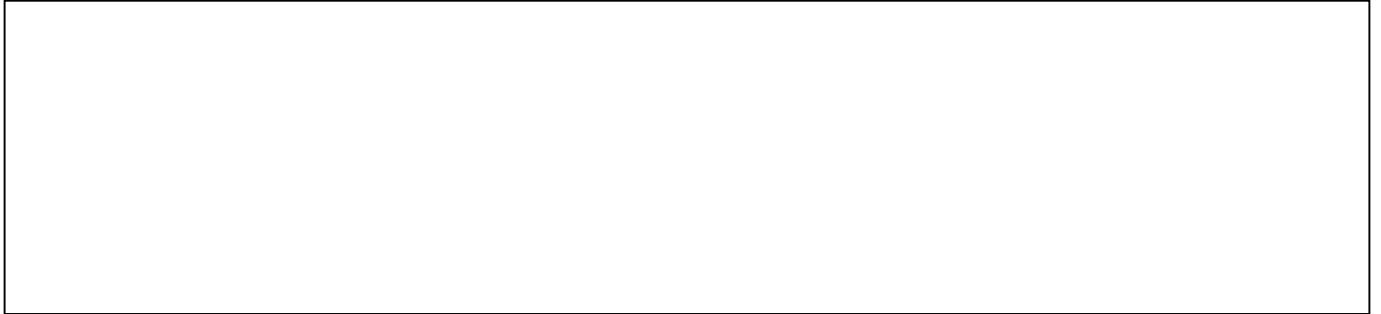


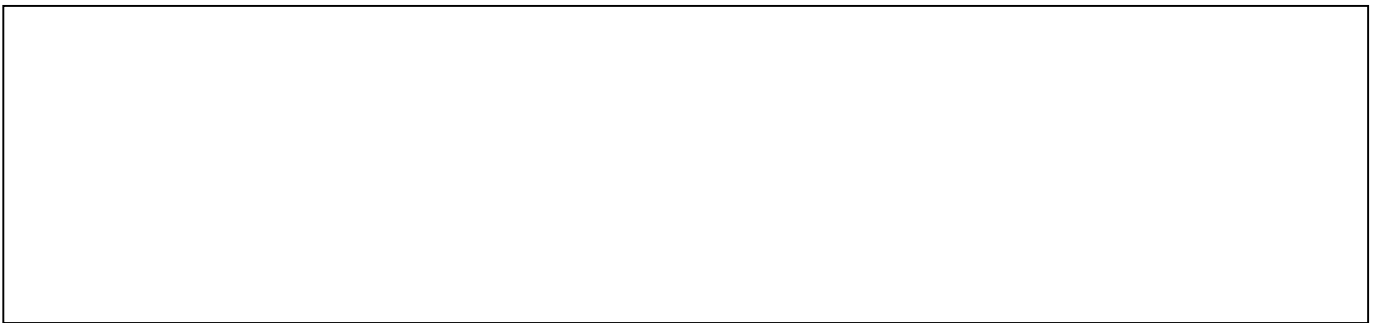
# CHAPTER 3: ECOSYSTEMS – WHAT ARE THEY AND HOW DO THEY WORK?

## 3-1 What Keeps Us and Other Organisms Alive?

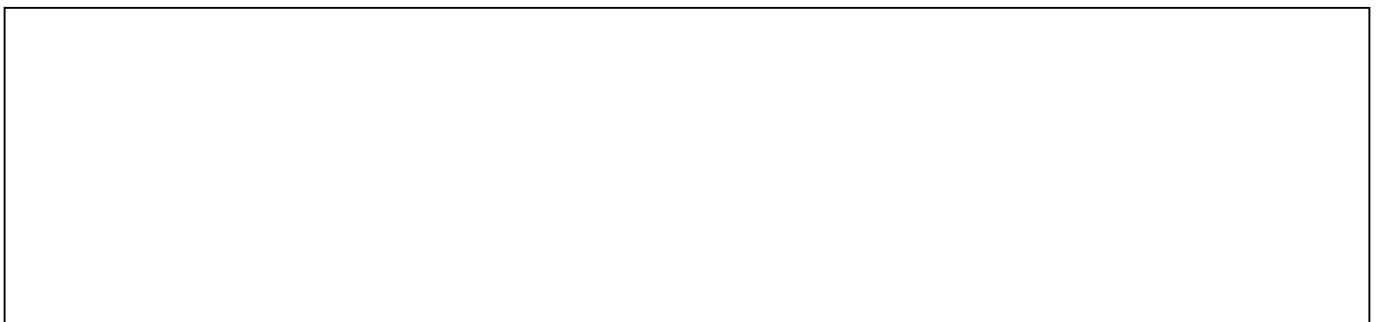
- Earth's Life Support Systems – Four Major Components



- Three Factors Sustain the Earth's Life



- Sun, Earth, Life, and Climate

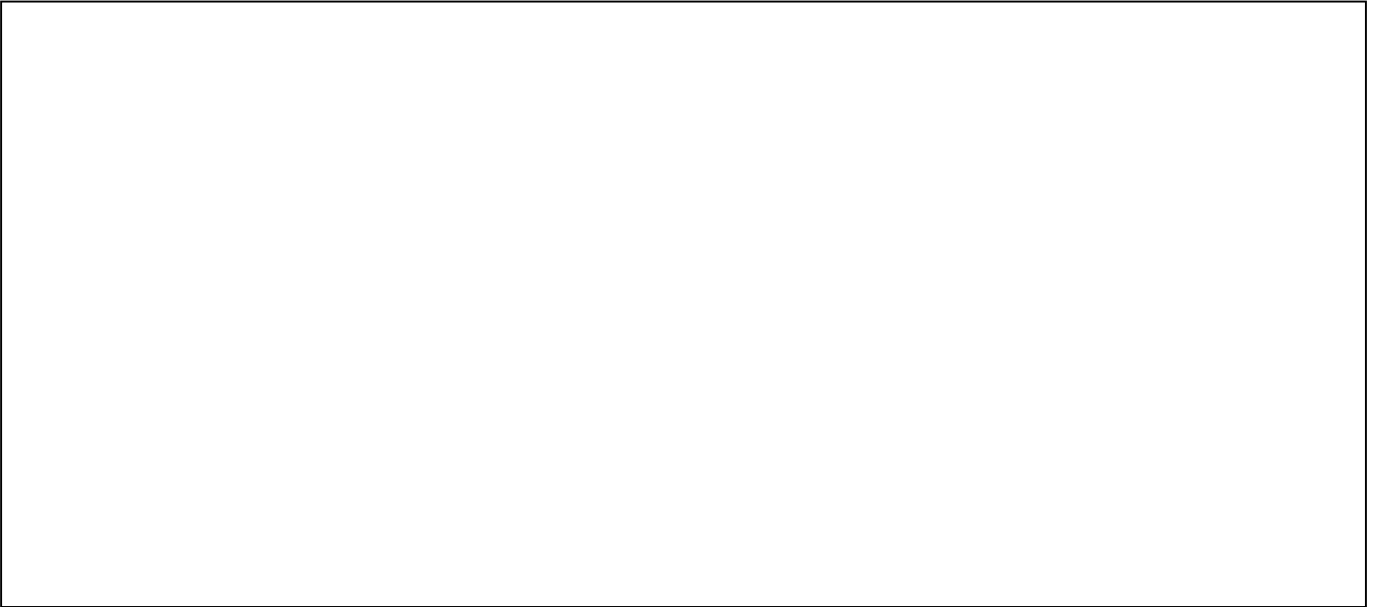


### 3-2 What Are the Major Components of an Ecosystem?

- Ecologists Study Interactions in Nature




- Ecosystems Have Living and Nonliving Components



**Diagrams:**

### 3-3 What Happens To Energy in an Ecosystem?

- Energy Flows Through Ecosystems in Food Chains and Food Webs



- Usable Energy Decreases with Each Link...



- Some Ecosystems Produce Plant Matter Faster Than Others Do



**Diagrams:**

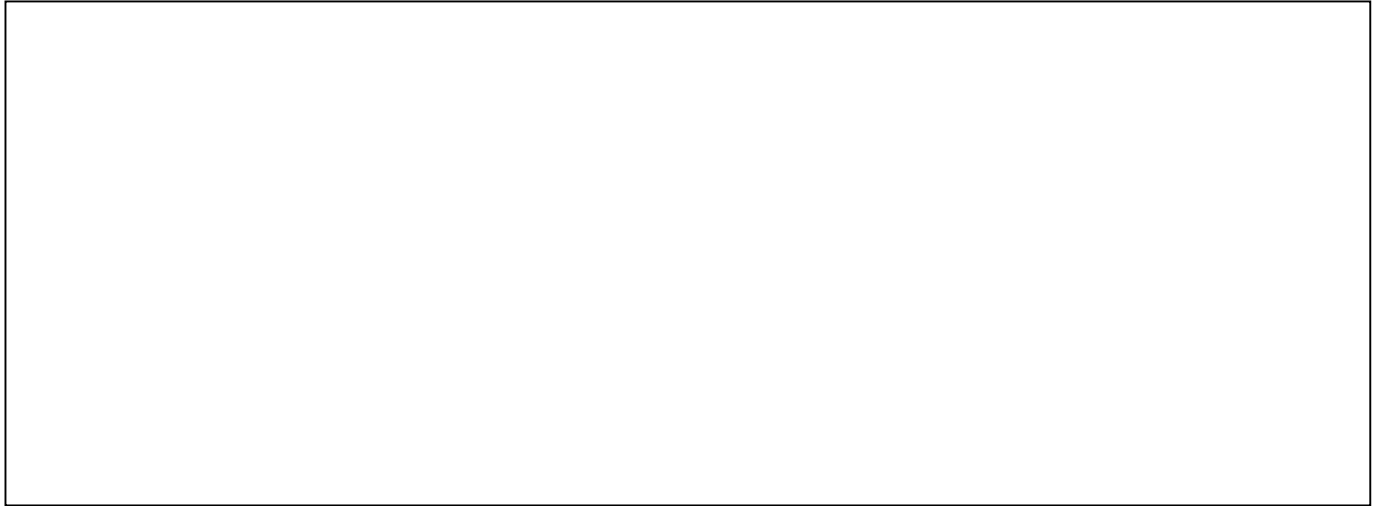
### 3-4 What Happens to Matter in an Ecosystem?

- Nutrients Cycle within and among Ecosystems

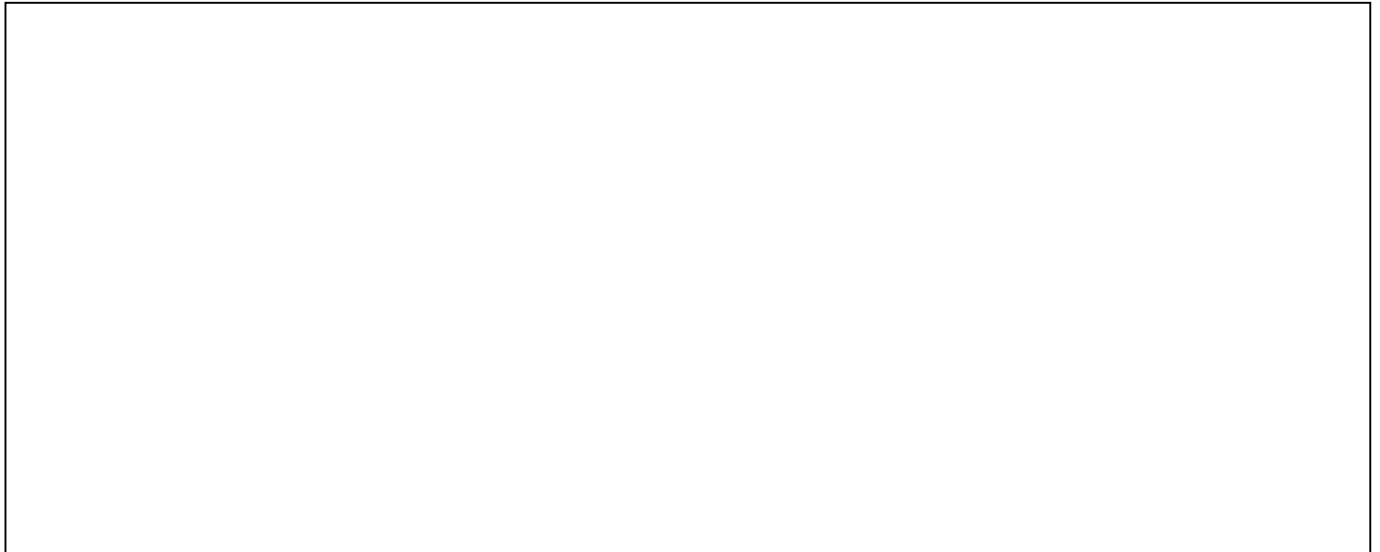
- The Water Cycle

- The Carbon Cycle

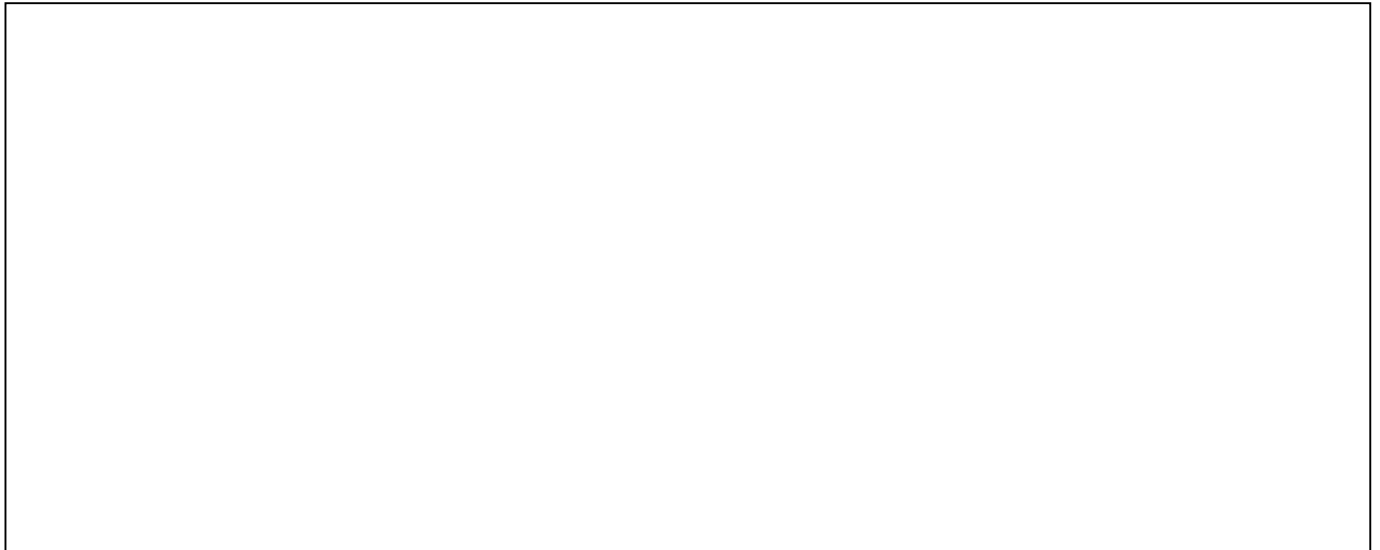
● The Nitrogen Cycle



● The Phosphorus Cycle



● The Sulfur Cycle



### 3-5 How Do Scientists Study Ecosystems?

- Some Study Nature Directly

- Some Study Ecosystems in the Laboratory

- Some Use Models to Simulate Ecosystems

- We Need to Learn More..