

## Chapter 1.1 : Earth as a System

### Branches of Science

- Earth Science

— \_\_\_\_\_  
\_\_\_\_\_.

- Biology

— \_\_\_\_\_  
— \_\_\_\_\_

- Chemistry

— \_\_\_\_\_.

- Physics

— \_\_\_\_\_.

### Past View...Branches of Earth Science

- In the past, Earth Science was viewed as having \_\_\_\_ distinct and separate branches.

- Geology

- \_\_\_\_\_  
\_\_\_\_\_.  
• Examples) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

- Astronomy

— \_\_\_\_\_  
— Examples) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

- Oceanography

— \_\_\_\_\_  
• Examples) \_\_\_\_\_, \_\_\_\_\_ (salt)  
\_\_\_\_\_

- Meteorology

- \_\_\_\_\_  
• Examples) \_\_\_\_\_, \_\_\_\_\_

### Today's view...Earth System Science

- Earth is more than \_\_\_\_\_
- Each \_\_\_\_\_ of Earth Science is \_\_\_\_\_

### What is a System?

- A \_\_\_\_\_ is a kind of \_\_\_\_\_; a part of the \_\_\_\_\_ that can be \_\_\_\_\_

— A model is \_\_\_\_\_

- Scientists often describe the natural world by using models such as \_\_\_\_\_ and \_\_\_\_\_ systems

### **Closed System**

- \_\_\_\_\_
- Example) Sun Tea
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- The jar of tea does not share \_\_\_\_\_ with its surroundings, only \_\_\_\_\_

### **Another Example**

- Deep-Sea Submersible
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

### **Open System**

- The system and its surroundings freely exchange both \_\_\_\_\_ and \_\_\_\_\_
- Example) glass of iced tea
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

### **Another Example**

- An island
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

### **Is Earth Open or Closed?**

- Scientists consider Earth to be essentially \_\_\_\_\_
  - Energy is received from the \_\_\_\_\_ and most is \_\_\_\_\_
  - Overall Earth's \_\_\_\_\_ remains relatively constant
- System is not entirely \_\_\_\_\_
  - Atmosphere loses \_\_\_\_\_ to space
  - \_\_\_\_\_ enter the atmosphere