Science 9 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Ch 1.1a notes Blk: \_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

### Ch 1.1a: Introduction to Biomes

## A) Introduction to Biomes

* **Biomes** are the **largest divisions** of the **biosphere**.
* The large regions within biomes have similar **\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_** components.
* The interaction of these components determines the characteristics of biomes.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are the main **abiotic factors** that influence the distribution of biomes and the organisms within them.

* Organisms have **adaptations** for survival in the specific environmental conditions of their biome.

## B) What Is a Biome?

1. **Biosphere**

* The thin layer of air, land, and water at Earth’s surface where living things exist.
* Can be further divided into **\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**(see Figure 1.3, BC Science p.9)

2. **Biome**

* A large area of the biosphere that has **characteristic \_\_\_\_\_\_\_\_\_\_,** **\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_**.
* Can be **\_\_\_\_\_\_\_\_\_\_\_** (water-based) or **\_\_\_\_\_\_\_\_\_\_\_** (land-based).
* Biomes are classified based on many qualities, such as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

3. Every environment has **living** (biotic) and **non-living** (abiotic) components.

* **Biotic factors:** are all organisms in the environment
	+ E.g**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **Abiotic factors:** are all non-living parts of the environment
	+ E.g. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **Biotic** and **abiotic** factors interact and determine what characteristics a biome will have.

**Practice Problem:**

1. List the biotic and abiotic factors of the following pond water ecosystem.

2. Discuss in what ways the biotic and abiotic factors may interact.



|  |  |  |
| --- | --- | --- |
| **Factors** | **Biotic** | **Abiotic** |
| At least 3 Examples | 1.2.3. | 1.2.3. |
| At least 3 Interactions  | 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

## C) Biomes of the World

1. There are 8 Main Biomes:

* 1. boreal forest
	2. desert
	3. grassland
	4. permanent ice
	5. temperate deciduous forest
	6. temperate rainforest
	7. tropical rainforest
	8. tundra
1. Similar biomes can exist far apart.
2. The distribution of biomes is related to:
* the amount of annual rainfall, temperature, latitude, and geographic locations (along coast, mountains, etc.)

**Activity 1: Observing Patterns in World Biomes**

Study the map and observe the patterns you see in the distribution of biomes. Record them below.

|  |  |
| --- | --- |
| **Biomes** | **Usually Found…** |
| 1. Tropical rainforests
 |  |
| 1. Boreal forest
 |  |
| 1. Deciduous forests
 |  |
| 1. Tundra
 |  |
| 1. Grassland
 |  |
| 1. Temperate rainforests
 |  |
| 1. Deserts
 |  |
| 1. Permanent ice
 |  |

## Practice Problems

1. Identify each of the following as either a biotic or an abiotic factor.

(a) crab \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) ocean temperature \_\_\_\_\_\_\_\_\_\_\_

(c) lake water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(d) dissolved oxygen \_\_\_\_\_\_\_\_\_\_\_\_

(e) tides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(f ) seaweed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Refer to the identified patterns from the Activity 1. Provide an explanation for any two of these observed patterns based on your general knowledge.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**