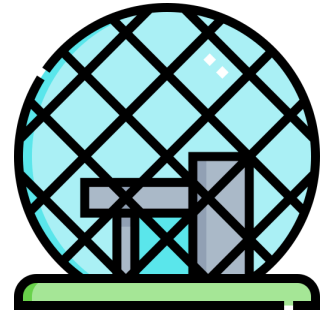




Name: _____ Date: _____


CASE STUDY

Can we make a working model of our living planet? (p. 76)



1. Why was Biosphere 2 Built? _____
2. What is Biosphere 1? _____
3. How many species are in biosphere 2? _____
4. What was the first problem encountered in biosphere 2? _____
5. What happened to biosphere 2's ocean? _____

3.1 Introduction to Global Systems

6. What does the biosphere include? _____
7.  Ecology is the scientific study of _____ among organisms, populations, and communities.
8. The root word of ecology is "oikos" which means _____.
9. Human economies depend on healthy _____ systems.

Levels of Organization

10. A group of individuals that belong to the same species is called a _____
11. Different populations that live together is called a _____
12. All the organisms that live together with their physical environment is an _____

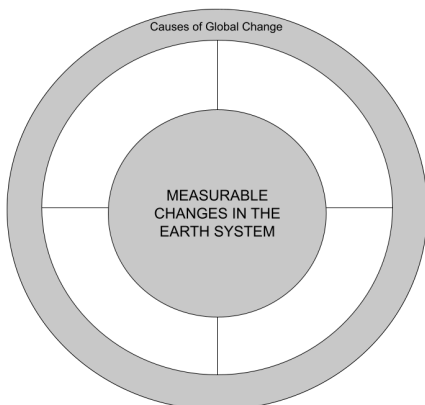
Gathering Ecological Data

13. What is the first step in asking ecological questions? _____
14. Experiments are designed to test _____
15. Ecologists may monitor conditions, or they may _____ artificial environments.
16. Useful models make _____.
17. A _____ factor is any living part of the environment.
18. Nonliving parts of the environment are called _____ factors.
19. Where do bullfrogs hang out? _____
20. Decomposing pine needles make the soil _____

Modeling Global Systems

21. The _____ contains all the gasses that surround the earth.
22. The _____ consists of all the Earth's water.
23. The _____ includes the rocks and solid continents

24. Complete the model of Earth's systems (fig 3-4)



25. Describe the ecological approach(es) used in Biosphere 2.



Name: _____ Date: _____

3.2 Climate, Weather, and Life



1. 🔍 Climate is defined by _____ and averages of temperature and precipitation over many years.
2. Weather consists of _____ changes that can vary daily.
3. The main force that shapes climate is _____
4. What are the three greenhouse gasses?

5. If greenhouse gasses increase in concentration, the atmosphere will _____
6. Without the greenhouse effect, the earth would be _____ cooler.
7. What are the three climate zones of the earth? _____
8. Which area receives the most direct sunlight? _____
9. What creates winds and ocean currents? _____
10. Earth's rotation causes winds to blow from _____ in temperate zones.
11. 🔍 Ocean currents are shaped by patterns of _____
12. What ocean current travels along the east coast of North America? _____
13. What causes El Nino? _____
14. What geographical feature affects regional climates of Montana and Washington? _____
15. Name one nonhuman cause of climate change: _____
16. What is the most likely cause of the extinction of the dinosaurs? _____
17. Five mass extinctions in Earth's history were likely caused by _____
18. What are the factors that result in different climates in different parts of the world? List at least 5!



Name: _____ Date: _____

3.3 Biomes and Aquatic Ecosystems

1. _____ factors include climate and soil type.
2. What type of graph shows average temperature and precipitation? _____
3. On this graph (Fig 3-15) , the red line indicates _____
the blue bars represent _____

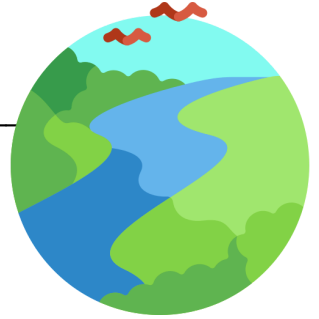


Fig 3-16 Biomes

5. What biome dominates the northern part of South America? _____
6. In **tropical rain forests**, the dense leafy covering is called the _____
7. In **tropical dry forests**, a period of rain is followed by a prolonged period of _____
8. How do plants in tropical dry forests protect themselves from water loss? _____
9. How do plants in **tropical grasslands** protect themselves from grazing herbivores? _____
10. A **desert** receives less than _____ centimeters of precipitation annually.
Cactus spines are modified _____.
11. Much of the area of **temperate grasslands** in the central United States is used for _____.
12. In **temperate woodlands**, areas that have more shrub than forest are called _____
13. In **temperate forests**, soils are rich in _____
14. What type of trees drop their leaves in the fall and go dormant? _____
15. In the **Northwestern Coniferous forest**, what often covers the trunks of trees and forest floor? _____
16. What types of trees grow in the **boreal forest**? _____
17. The **tundra** is characterized by _____
18. Which pole of the earth has the continent of Antarctica? _____
What animal lives on this continent? _____
19. What percentage of the earth's land have humans altered? _____

Marine Ecosystems

20. What is the photic zone? _____
21. Food chains in aquatic ecosystems are based on what organism? _____
22. What types of organisms attach themselves permanently to rocks in intertidal zones? _____
23. What are two types of coastal communities? _____
24. What percentage of the world's ocean is "open ocean?" _____%
25. The permanently dark part of the ocean is known as the _____ zone.

Freshwater Ecosystems

26. Where do rivers, creeks and streams originate from? _____
27. Where do fish live when a lake freezes over? _____
28. What is an important environmental function of a wetland? _____
29. What is formed where a river meets the sea? _____
30. What type of swamps are tropical estuaries that have salt tolerant trees? _____