

Chapter 1

Name: _____

Date: _____

Block: _____

Sheet 1.1

Biomes

Read pages 4 - 32 of BC Science 10 and complete the following.

*Starred questions are thinking questions... the answers are not found directly in the textbook.

PART A. BIODIVERSITY (p.4 - 5)

1. The "Eden Project" is a bunch of greenhouses in Great Britain. About how many plants are in it?
2. What is the purpose of the Edenproject?
3. *Why do you think it is called the Edenproject
4. What term is used to describe the great variety of living things found on Earth?
5. What is one thing that funds (i.e. money) generated by the Edenproject are used for?
6. Another thing that money from the Edenproject is used for is mine reclamation. Define mine reclamation
7. *Many towns in Northern BChave mining as their sole industry.
 - A) What are some benefits of living in a mining town?
 - B) What are some disadvantages to living in a mining town?
8. A) When was the famous "Blue Marble" photograph of the Earth from space taken? B) What is this image thought to have influenced?

PART B: THE BIOSPHERE (p.6 - 9)

1. What is the biosphere?
2. How many living species do scientists estimate are on Earth?
3. Would you describe the biosphere as thin or thick?
4. What are the living parts of a an environment called?

5. What are the non-living parts of an environment called?
6. State whether each of the following is a biotic factor or an abiotic factor.

Factor	Biotic or Abiotic?
Rainfall (i.e. precipitation)	
Animals living there	
Air temperature	
Plants living there	
Bacteria living there	

7. What are large areas on the Earth that have similar components called?
8. See the "Did You Know" on the sidebar on page 9. What percent of life on Earth is plant life?
9. See fig. 1.3 on page 9. Biomes are made up of many _____. Ecosystems contain many different _____.

PART C: INTRODUCTION TO BIOMES (p.10 - 13)

1. "Terrestrial" is a word that means life (circle one) ON LAND / IN THE WATER.
2. Scientists may classify biomes in different ways. For example, some scientists classify them according to _____ and _____. Other scientists according to the type of _____ that grow there.
3. Look at the legend on the world map on page 10-11, and name 8 biomes found on Earth.

i) _____	v) _____
ii) _____	vi) _____
iii) _____	vii) _____
iv) _____	viii) _____
4. *Find BC on the world map. What type of of biome do we live in?
5. Find Iranon the world map. What type of biome is Iranin?
6. *Find South Koreaon the world map. What type of biome is South Koreain?

PART D. FACTORS AFFECTING BIOMES (p.12 - 15)

1. What two abiotic factors are most important in influencing the characteristics of biomes?
2. *Look at the graph on fig. 1.6.
 - a) Which biome has the highest annual rainfall (precipitation)? _____
 - b) Which biome has the lowest annual rainfall (precipitation)? _____
 - c) Which biome has the highest annual average temperature? _____
 - d) Which biome has the lowest annual average temperature? _____
3. What is latitude?
4. The equator is the imaginary line that divides the world into the northern and southern _____.
5. *The equator receives 12 hours of sunlight year-round, do you think there are different seasons at the equator? Explain.
6. Why are temperatures lower when an area is further from the equator?
7. a) Is there more or less rainfall at the equator than there is at the poles? _____
b) Why?
8. There little rainfall at the poles because little _____ can be picked up and carried by cold air.
9. What is elevation?
10. What happens to the atmosphere at higher elevations?
11. What is the "leeward" side of a mountain?
12. Is there more precipitatin on the windward or the leeward side of a mountain?
13. Look at figure 1.8.
 - a) What biome might be found at the bottom of a mountain? _____
 - b) What biome might be found at the top of a mountain? _____
14. Oceancurrents make B.C.'s climate _____ and _____ than other temperate biomes.

PART E: CLIMATOGRAPHS (p.16 - 17)

1. Define climate.
2. Define climatograph.
3. A climatograph includes average monthly _____ and average monthly _____ for an area.
4. On a climatograph, the horizontal axis shows the _____ of the year. The two vertical axes show the average _____ and the average _____.
5. Compare the two climatographs for Tofino, B.C. and Osoyoos, B.C.
 - a) Tofino has relatively (circle one) HIGH / LOW precipitation.
 - b) Osoyoos has a relatively (circle one) HIGH / LOW precipitation.
 - c) In Tofino, the average monthly temperature (circle one) DOES / DOES NOT fluctuate very much.
 - d) In Osoyoos, the average monthly temperature (circle one) DOES / DOES NOT fluctuate very much.

PART F: ADAPTATIONS (P.18 - 19)

1. Define adaptation.
2. Define structural adaptation.
3. *Think about an eagle's body. Describe one of it's structural adaptations and how it helps the eagle to survive.
4. Define physiological adaptation.
5. Define behavioral adaptation.
6. *Think about what deer do when they smell a wolf. Describe this behavioral adaptation and how it helps the deer to survive.

7. *State whether each of the following is a structural adaptation or a behavioral adaptation.

Feature	Structural or behavioral?
a) The striped coat of a zebra (that helps confuse lions during a chase)	
b) The chest-thumping that male gorillas do (to scare away other male gorillas)	
c) The camouflaged shell of a rock crab (that helps it to blend in with its surroundings)	

PART 6: A SURVEY OF THE BIOMES (p.20 - 28)

i) The TUNDRA biome

- 1) Located in the upper _____ hemisphere
- 2) There is (circle one) LOTS OF / VERY LITTLE precipitation in the tundra
- 3) Has a permanently frozen layer of soil called _____.
- 4) The terrain of the tundra is relatively _____.
- 5) Because the soil doesn't drain well, there are many _____ and _____ during the summer melt.
- 6) Explain why there are no trees in the tundra.
- 7) Short plants such as _____, _____ and _____ grow in the tundra.
- 8) Explain why animals of the tundra generally have compact (i.e. small) bodies.
- 9) Many animals of the tundra _____ (i.e. travel) to warmer climates during the winter.

ii) The BOREAL FOREST biome (p.21)

- 1) Located in northern latitudes across _____, Russia, Finland, and Scandinavia
- 2) Much of the precipitation falls as _____
- 3) Temperatures are below _____ for half the year
- 4) The summer growing season is _____
- 5) Trees are mainly coniferous (cone-bearing) and have (circle one) LEAVES / NEEDLES which allow the snow to slide off easily
- 6) Examples of trees found here are black and white _____ and balsam _____
- 7) Animals found in the boreal forest include birds, small mammals like chipmunks that can _____ into the ground to stay warm, and large mammals like moose that have _____ insulating coats. There are also many _____ in the summer.

iii) The TEMPERATE DECIDUOUS forest (p.22)

*Note: "temperate" means "mild"... not overly hot and not overly cold

- 1) Located mainly in eastern _____, the eastern _____, eastern _____ and western _____.
- 2) There are large _____ changes between summer and winter in the temperate deciduous forest.
- 3) There is a long, warm _____ season in the summer
- 4) Trees found in the temperate deciduous forest include _____, _____ and _____ trees in the canopy layer.
- 5) There are also many shorter trees, shrubs, berries, ferns, and mosses below the canopy.
- 6) Deciduous trees have (circle one) LEAVES / NEEDLES.
- 7) Deciduous trees shed their leaves in the winter to prevent _____ loss and to prevent the branches from breaking under heavy _____.
- 8) Some examples of animals found in the temperate deciduous forest include _____, _____, _____, _____, _____ and _____.
- 9) During the winter, some mammals of the temperate deciduous may _____, and others may _____ to warmer temperatures.

iv) The TEMPERATE RAINFOREST Biome(p.23)

- 1) Found along the coast of _____ in South America and along the northwest coast of North America (including the coast of _____)
- 2) Rainfall is (circle one) LOW / HIGH
- 3) Temperatures are (circle one) LOW / MEDIUM / HIGH
- 4) Trees can grow very _____. Examples of trees found here are Sitka _____ and Douglas _____.
- 5) Animals found in a temperate rainforest live mainly on the forest _____.

v) GRASSLAND (p.24 -25)

- 1) Temperate grasslands are also called _____, and are found in North America (including Canada) and Russia
- 2) Tropical grasslands are also called _____ and are found in Africa.
- 3) Rainfall in grasslands is relatively (circle one) LOW / HIGH
- 4) The land is mainly _____.

v) GRASSLAND, CONTINUED

- 5) Precipitation occurs in late spring or early summer and there is an extended _____ period after that.
- 6) Trees are scarce because of limited _____.
- 7) Grassland plants are well-adapted for drought as their _____ are deep.
- 8) There are many large _____ mammals in grasslands because there is plentiful grass.
- 9) Name 6 types of animals found in tropical grasslands (i.e. savannah)

- 10) Name 5 types of animals found in temperate grasslands. (i.e. prairies)

- 11) Animals such as _____, _____, _____ and _____ are common to both grassland types.

vi) TROPICAL RAINFOREST (p.26)

- 1) Tropical rainforests are located in a band about 4800 km wide around the _____
- 2) Tropical rainforests cover much of _____, _____, _____, _____, and _____.
- 3) Rainfall is very (circle one) LOW / HIGH
- 4) Give 2 reasons why the soil is poor in a tropical rainforest.

- 5) Tropical rainforests have the largest number of different _____ species. There is much competition for sunlight, and many plants climb _____ trunks to get more light.
- 6) Most animals in a tropical rainforest are adapted to living in the _____.
- 7) Name four animals that live in a tropical rainforest.

vii) DESERT (p.27)

- 1) There are deserts on _____ continent.
- 2) Describe the stems of cacti.

- 3) Describe the roots of cacti.

- 4) Reptiles are common in hot deserts. Why do reptiles have thick skin and scales?

DESERT, CONTINUED

5) Animals in a hot desert are active mainly at _____.

6) Name two animals found in a hot desert.

7) Name five animals found in a cold desert.

8) What do many animals of a cold desert do at night?

viii) POLAR ICE (p.28)

1) What are average arctic winter temperatures? _____

2) Polar ice has very strong _____ and little soil.

3) Name two types of plants found in the Arctic.

4) Name five types of animals found in the Arctic.

5) What do walruses do to reduce heat loss?