Name: _____ Date: _____ Block: ____

:et 1.2

Ecosystems

Read pages 34 - 50 of BC Science 10 and complete the following.
*Starred questions are thinking questions... the answers are not found directly in the textbook.

PART A. INTRODUCTION TO ECOSYSTEMS (p.34 - 35)

1. It is important to understand the _____ of ancient forests in order to help us manage our forest ecosystems in the _____.

2. Historical ecology researchers study the effects of human activities such as _____ _____, _____ _____ and _____ _____. They also sow that natural events such as _____ and _____ can affect forests over time.

3. Since there are many gaps in historical records, researchers often work with First Nations to better understand what happened to forests. For example, researchers working with the Tl'azt'en First Nation near Fort St. John have incorporated their detailed knowledge of _____, _____, and _____ _____.

PART B: PARTS OF AN ECOSYSTEM (P.36)

1. Biomes can be sub-divided into _____.
2. Ecosystems can be large areas such as _____ of the South Okanagan Valley or small areas such as the _____ on Vancouver Island.
3. A _____ is the place where an organism lives. For example, the habitat of a sculpin is _____. The habitat of a red-backed salamander is in _____.

PART C: ABIOTIC PARTS OF ECOSYSTEMS (P.37-38)

1. *Recall that "abiotic" means (circle one) LIVING / NON-LIVING.
2. Both plants and animals rely on the gas called _____. Fish get oxygen from the _____.
3. Water is also very important to all living things. The cells of living things contain between _____% and _____% water.

4. Other nutrients such as _____ and _____ are also important for both plants and animals.
5. The chemical reaction that captures light (solar energy) is called _____.
   - There is more light available for photosynthesis in the forest _____ than in lower layers of the forest.
   - There is more light available near the _____ of lakes and oceans than there is in deeper water.
6. Soil is very important in terrestrial ecosystems. What kinds of organisms are found in it?

7. Why are earthworm tunnels important for soil?

PART D: BIOTIC PARTS OF ECOSYSTEMS (P.39)

1. What is a species?

2. What is a population?

3. What is a community?

4. *Classify each of the following as either a species, a population, or a community.

Example	Species, Population, or Community?
All the grey squirrels in Lynn Canyon Park	
All the bacteria, plants, and animals in Lynn Canyon Park	
Humans (scientific name: *homo sapiens)*	
Red maple trees (scientific name: *Acer rubrum)*	
All the people at Carson Graham Secondary	
All the people, bacteria, insects, birds, mice, grass, trees, flowers, shrubs, etc. at Carson Graham Secondary	
Wolves (scientific name: *Canis lupus*	
All the wolves in Garibaldi Park	

PART E: SYMBIOTIC RELATIONSHIPS (P.40 - 43)

1. What is symbiosis?

2. **Commensalism** is when one species _____ and the other species is _____ _____.

3. Describe the commensalism between barnacles and whales.

4. In commensalism between Spanish moss and trees, the _____ benefits and the _____ is neither helped nor harmed. The Spanish moss wraps its stems around trees to get higher up where more _____, _____, and _____ are available.

5. **Mutualism** is a symbiotic relationship in which _____.

6. One example of mutualism is the relationship between flowering plants and _____. In this relationship, both the pollinator and the flowering plant benefit.

7. Another example of mutualism is the relationship between two types of _____ and an underground _____ in the boreal forests of B.C. In this relationship, the squirrels get food from the fungus, and the fungus gets its _____ spread around by the squirrels.

8. Another example of mutualism is the relationship between an ant and bush called the bullhorn acacia. The ant sips _____ from the acacia, and the acacia gets protection as the ant aggressively fights off other _____.

9. Another example of mutualism is lichens. Each lichen as an _____ and a _____ that benefit from each other. The alga produces _____ and _____ for the fungus through photosynthesis. The fungus provides _____ _____, _____, _____, and protection from dehydration for the alga.

10. Define **parasitism**.

11. What does a parasite obtain from a host's blood or tissue?

12. How many different species of parasites can infect humans?

13. Where do hookworms live?

14. Where do hookworms go once they get inside a dog?

15. Give an example of a parasite in B.C.

16. Give an example of a large parasite.

17. Read the internet connect on page 43. Describe and give an example of brood parasitism.

PART F: NICHES (p.44)

1. Define niche.

2. What does an organisms niche include?

3. Describe, in detail, the niche of a great blue heron.

PART G: COMPETITION (p.45)

1. When does competition occur?

2. Describe how the spotted knapweed avoids competition.

3. What is another reason that knapweed is so successful?

PART H: PREDATION (P.46 - 47)

1. What is predation?

2. What are some examples of adaptations that predators have?

3. What are some adaptations of prey animals?

4. What is camouflage?

5. What is mimicry?

6. What happens to the population size of a prey species when the predator population is high?

PART I: BIODIVERSITY (P.48)

1. Define biodiversity.

2. What are some ways in which forests are important? (at least 6)

3. What are two ways in which wetlands are important?

4. In B.C., what is the greatest threat to ecosystems?