

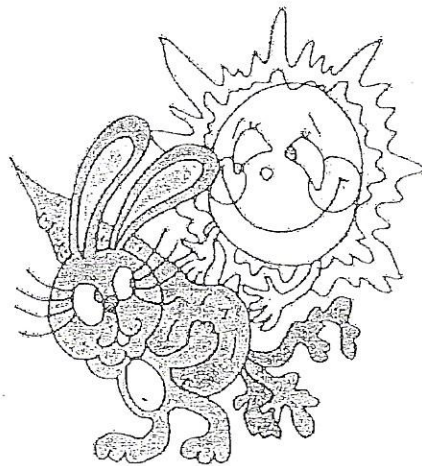
Name: \_\_\_\_\_

## Producers and Consumers

A producer is a living thing that makes its own food from sunlight, air, and soil. Green plants are producers who make food in their leaves.

A consumer is a living thing that cannot make its own food. Consumers get their energy by eating food. All animals are consumers.

A decomposer is a living thing that gets energy by breaking down dead plants and animals. Fungi and bacteria are the most common decomposers.



Tell whether each living thing below is a producer, consumer, or decomposer.

a. apple tree - \_\_\_\_\_

b. hawk - \_\_\_\_\_

c. mushroom - \_\_\_\_\_

d. carrot - \_\_\_\_\_

e. dragonfly - \_\_\_\_\_

f. bamboo - \_\_\_\_\_

g. cougar - \_\_\_\_\_

h. bacteria - \_\_\_\_\_

i. daffodil - \_\_\_\_\_

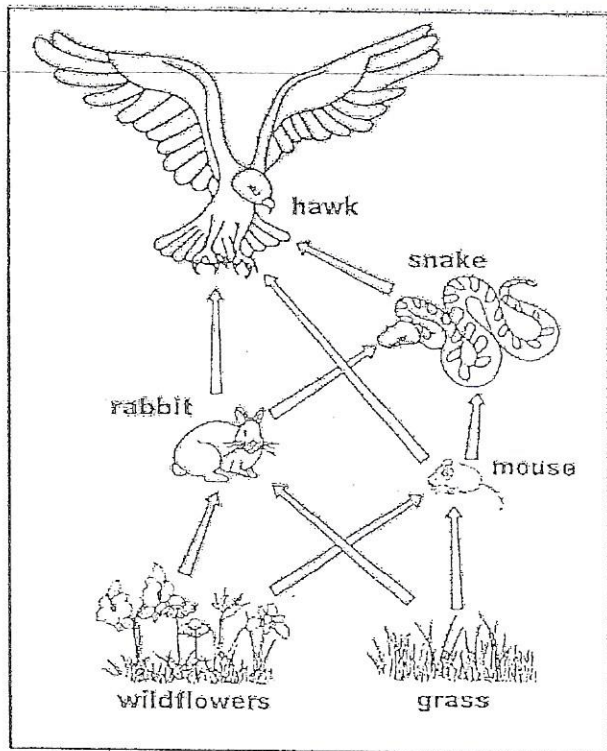
j. pigeon - \_\_\_\_\_

k. snake - \_\_\_\_\_

l. catfish - \_\_\_\_\_

Name: \_\_\_\_\_

## Food Web



A food web shows how energy is passed on from one living thing to the next. It shows the feeding habits of different animals that live together in an ecosystem.

In the food web pictured on the left, energy is passed from the grass to the mouse to the snake to the hawk.

Producers are living things that make their own food with sun and air. The producers are pictured at the bottom of the food web.

Consumers are living things that eat other living things.

Use the food web in the picture above to answer the questions.

1. Name the living things in the food web that are producers. \_\_\_\_\_  
\_\_\_\_\_
2. Name the living things in the food web that are consumers. \_\_\_\_\_  
\_\_\_\_\_
3. Which living things does the snake eat? \_\_\_\_\_
4. Which living things does the hawk eat? \_\_\_\_\_
5. What is eaten by the rabbit? \_\_\_\_\_

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

ID: A

## Ecology Quiz

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_ 1. Which of the following organisms is a producer?
  - a. Tiger
  - b. Fish
  - c. Tree
  - d. Human
- \_\_\_\_ 2. Which of the following organisms is a consumer?
  - a. Lion
  - b. Hawk
  - c. Fish
  - d. All of the above
- \_\_\_\_ 3. Which of these organisms is most likely a herbivore?
  - a. Cow
  - b. Shark
  - c. Lion
  - d. Tiger
- \_\_\_\_ 4. Which of these organisms is most likely a carnivore?
  - a. Human
  - b. Rabbit
  - c. Lion
  - d. Deer
- \_\_\_\_ 5. Which of these organisms is most likely an omnivore?
  - a. Cow
  - b. Bear
  - c. Rabbit
  - d. Tiger
- \_\_\_\_ 6. A decomposer...
  - a. is an animals habitat.
  - b. recycles dead plants and animals.
  - c. has no role in a habitat.
  - d. can perform photosynthesis.
- \_\_\_\_ 7. Which of the following organisms is a decomposer?
  - a. Earthworm
  - b. Bacteria
  - c. Fungus (mushroom)
  - d. All of the above

Name: \_\_\_\_\_

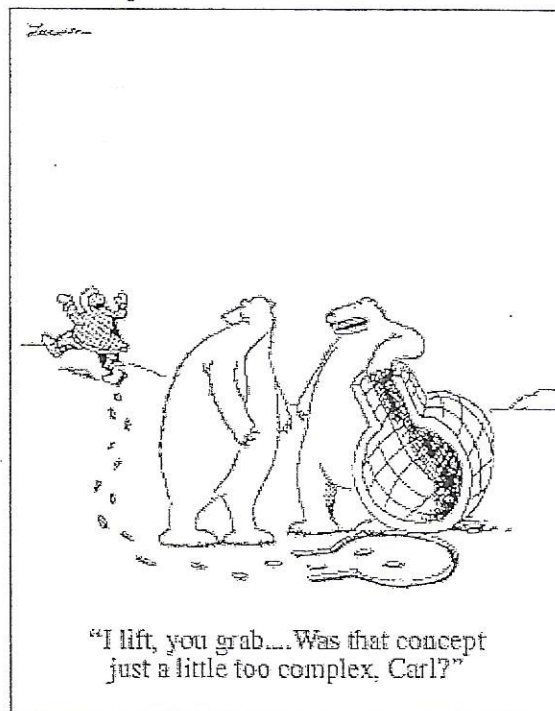
ID: A

- \_\_\_\_ 8. Which ecological term includes everything represented in the illustration below?



- a. ecosystem
- b. community
- c. population
- d. species

- \_\_\_\_ 9. Which ecological term best describes the polar bears in the cartoon below?



- a. herbivores
- b. parasites
- c. carnivores
- d. producers



# Ecology & Conservation Biology-a.notebook

1

## Agenda ~~4/27/2020~~

Excellent job on our short topic #10 metamorphosis

\*Add the new topic 11 "Ecology" to your table of contents.

(The study of the environment)

\*Flip your binder open to where you left off, and add in the handout with some new vocabulary and concepts for this topic.

\*Read pages 8-11 for ecology introduction in new textbook

\*Land Biomes Brainpop with quiz

\*Discuss and color world biome map

**Earth is one big ecosystem!**



2

1) **Ecology**- The study of the environment.

2) **Biome** - large areas on Earth that have similar climates and environments.

NOTICE HOW LIFE HAS EVOLVED DIFFERENTLY IN EACH BIOME

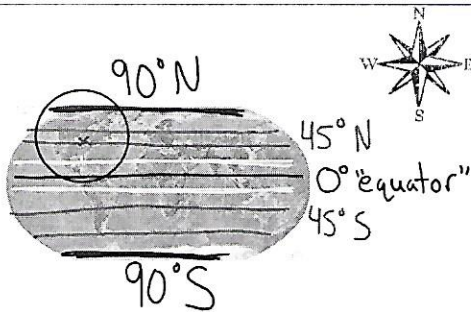
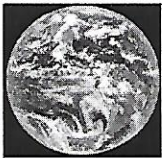
3) **Climate**- the average weather conditions for an area including temperature and precipitation.

(forms of water such as rain, snow, hail and sleet).

→ All are H<sub>2</sub>O

\*Climate is determined by latitude and altitude (elevation)

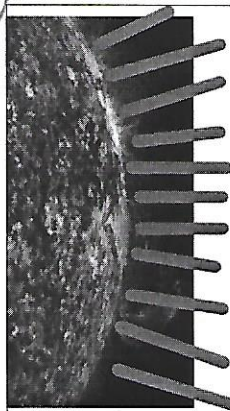
3



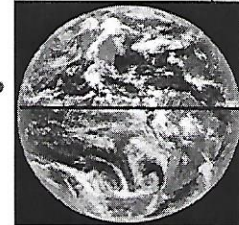
Climate is effected by latitude and elevation!

Altitude

4



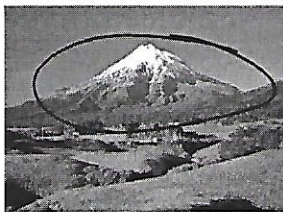
90° North (cold)



Equator 0°  
(hot)  
year round

90° South (cold)

5



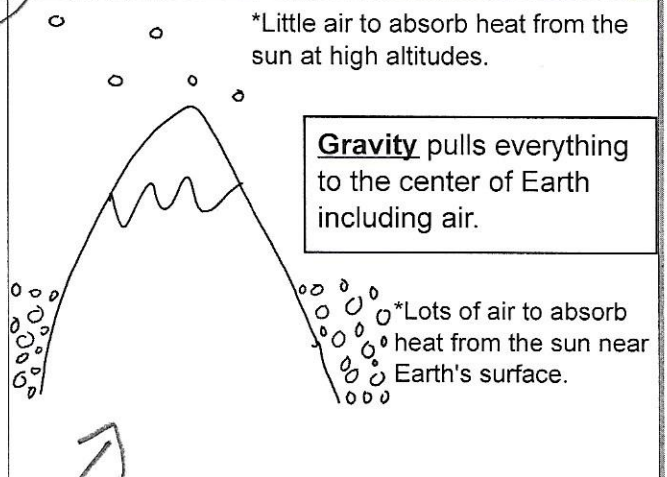
As elevation increases, temperature decreases.

altitude

6

\*Little air to absorb heat from the sun at high altitudes.

**Gravity** pulls everything to the center of Earth including air.



Here is why...

# Ecology & Conservation Biology-a.notebook

1

Agenda ~~ecology~~ Ecology- the study of the environment

We began our ecology unit by studying all six land biomes of earth. The biome map is the first grade of the 4th quarter.

1) Biotic Factors - living parts of the environment such as plants, animals, fungus and bacteria.

2) Abiotic Factors - nonliving parts of the environment such as soil, water, sunlight, air, etc..

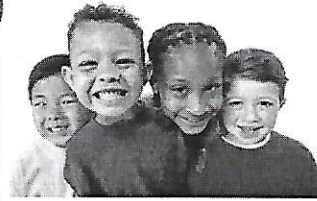
\*Ecosystem picture (Identify biotic and abiotic factors)

\*Ecosystem Brainpop with quiz

Tomorrow we will be building "food chains" which always begin with a plant and you must include 5 organisms total.

River Monsters: Tiger Fish in Congo River in Africa

2

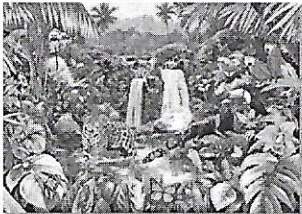


Diversity – the state of being different, or varied

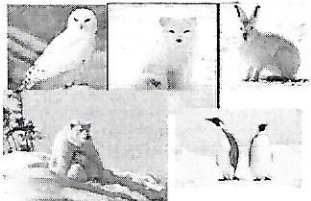
3



## Rainforest Biome



## Tundra Biome



Biodiversity- all the living things in an area

Which biome has more **biodiversity**, explain?

The rainforest has more biodiversity, because it has more species of plants and animals.

4

Levels of organization within an environment (largest to smallest)

3. Ecosystem • (Biotic + Abiotic Factors)

4. Community • (All Biotic Factors)

5. Population • (All members of one species)

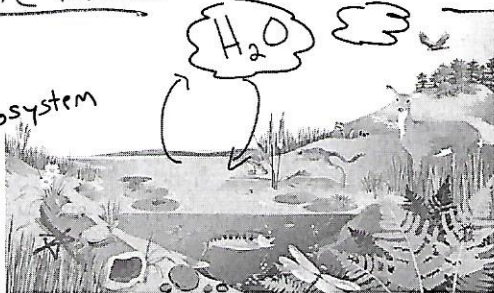
6. Organism • (One member of a species)

5

## Biotic Factors

## Abiotic Factors

Pond Ecosystem

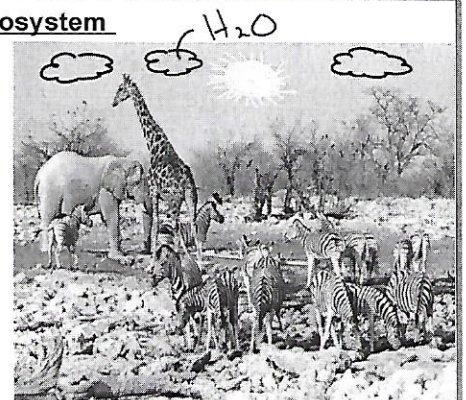


6

## Grasslands Ecosystem

What is a biotic factor of the ecosystem?

What is an abiotic factor of the ecosystem?





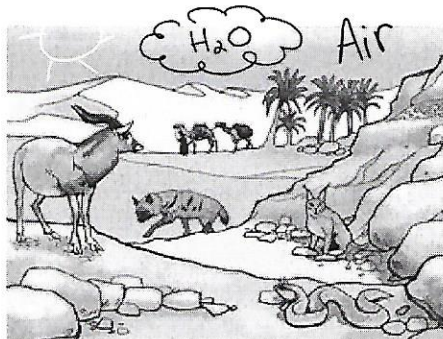
# Ecology & Conservation Biology-a.notebook

7

## Desert Ecosystem (biotic and abiotic factors)

Name a biotic factor of the ecosystem?

Give an abiotic factor of the ecosystem?



8

## Agenda

Review vocabulary from yesterday. What are the biotic factors and abiotic factors of an ecosystem?

New vocabulary: producer, consumer and decomposer

Producer, consumer and decomposer worksheet for a grade.

Food chains: (hint, they will always start with a producer)

Food chains show how energy is passed in an ecosystem

Example: Grass → Cow → Human

9

1) Producer- organisms that can produce their own energy through the process of photosynthesis



Fern



Grape vine



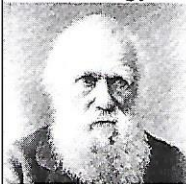
Banana tree



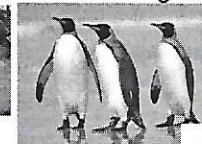
Orange tree

10

2) Consumer-organisms that cannot produce their own energy and therefore must eat other organisms



Charles Darwin



11

3) Decomposer- use soil, dead or decaying organisms to absorb nutrients and then recycle the matter.



Mushrooms  
(fungus)



Earthworm



Microscopic bacteria  
(Prokaryotic cells)

12

biotic

Place each biotic factor in the correct category.

Is each organism a producer, consumer or decomposer?

List of organisms:

- 1) deer
- 2) tiger
- 3) apple tree
- 4) mushroom
- 5) earth worm
- 6) human
- 7) turtle
- 8) shark

12

13

Food chains always begin with a producer!



The energy to begin all food chains comes from the sun!



When creating a food chain, the arrow points to what is receiving the ENERGY!

Example) Grass → Deer → Human

Make a food chain for the following organisms.

Wolf, Grass, Rabbit

Grass → Rabbit → wolf

14

Creating and labeling a "food chain"

Grass — Rabbit — Wolf

↑                      ↑                      ↑

producer    primary consumer    Secondary consumer

"herbivore"    "carnivore"

eats only plants    eats only meat

15

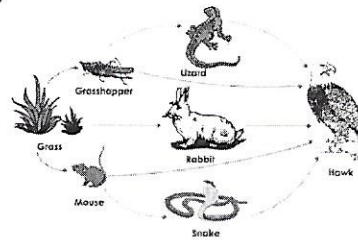
Omnivores eat both plants and animals



Example: bears

16

Food Web



A Food Web in a Grassland Ecosystem With Five Possible Food Chains

Ecosystem

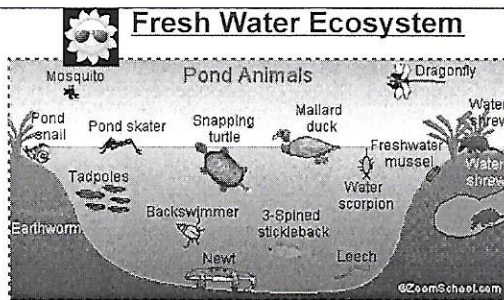
-balance  
-Stability

17

Can you complete?

What is a biotic factor of the ecosystem?

What is an abiotic factor of the ecosystem?



Name one organism for each:

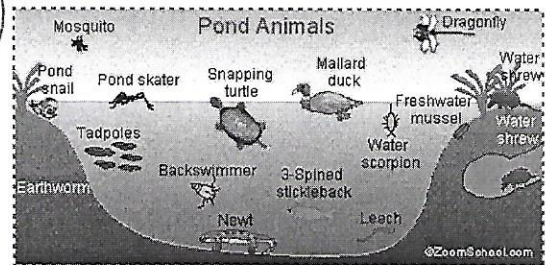
Producer-

Consumer-

Decomposer-

18

Can you complete?



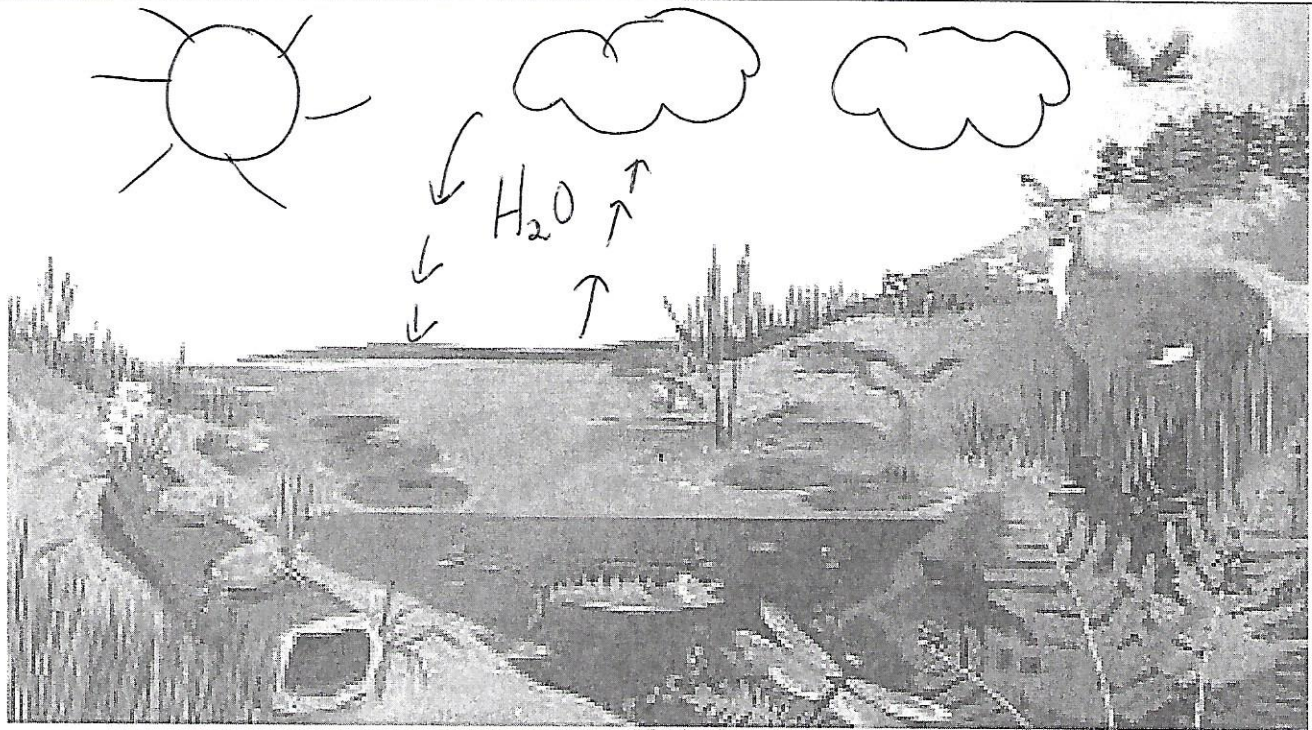
Create a possible food chain for this ecosystem.

3



Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Biotic factors** (living) and **abiotic factors** (nonliving) of an **ecosystem**.



List five biotic factors from the ecosystem.

---

---

---

---

---

List five abiotic factors from the ecosystem.

---

---

---

---

---

**1. What nonliving things might you find in an ecosystem?**

- a. Mammals, insects, and birds
- b. Plants, fungi, and lichen
- c. Rocks, air, light, and soil
- d. Bacteria and other microbes

**2. How are populations different from communities?**

- a. Populations consist of one species; communities consist of many species.
- b. Populations can contain plants and fungi; communities consist of animals only.
- c. Populations consist of many species; communities consist of one species.
- d. Populations consist of animals only; communities can contain plants and fungi.

**3. What is a moose's habitat?**

- a. The forests of North America
- b. The number of moose in a given area
- c. The plants and fungi that moose eat
- d. Its antlers

**4. Which of the following is an example of an animal adapting to its environment?**

- a. A bald eagle that cannot see well
- b. A fish that eats fish food
- c. A deer that drinks water
- d. A desert owl hunting at night to avoid heat

**5. What can you infer about the kangaroo rat from the fact that it thrives in the desert?**

- a. It must be very large.
- b. It must eat cacti.
- c. It must live in a very small community.
- d. It must be able to survive on very little water.

**6. Lakes and oceans are examples of aquatic ecosystems. What does "aquatic" mean?**

- a. Saltwater
- b. Water-based
- c. Freshwater
- d. Filled with fish

**7. Which of the following is an example of a living thing interacting with a nonliving thing?**

- a. A flower that's pollinated by a bee
- b. A plant and a fungus growing together as lichen
- c. A prairie dog that lives beneath the soil
- d. A beaver that cuts down trees with its teeth

**8. Which of the following words best describes the desert ecosystem?**

- a. Moist
- b. Arid
- c. Frigid
- d. Temperate

**9.**



**Why can't you find scorpions in the Arctic? Choose the best answer.**

- a. Because they can't walk on ice.
- b. Because they only like to catch warm-blooded prey.
- c. Because their stingers don't work at cold temperatures.
- d. Because their bodies are not adapted to life in the Arctic.

**10. What can you conclude about polar bears from the fact that they live in the Arctic?**

- a. They would not be able to thrive in the desert
- b. They are not biologically related to other bear species
- c. They eat mostly scorpions and kangaroo rats
- d. They must be able to survive with very little water