

## Ecology Final Review packet

Ecology Review Name \_\_\_\_\_ Period \_\_\_\_\_

Complete this packet by following directions in each of the sections

### Basic Ecology

To really understand the big Ecology issues, you must first understand the foundational information. The first part of the review is over basic ecological concepts

### Levels of Organization

List the levels of biological organization that ecology covers. List them in order from the least to the most complex. Then define the term. Use these terms; Biosphere, population, organism, community, ecosystem,

Term	Definition
1.	
2.	
3.	
4.	
5.	

### The Earth's Life Support Systems

List and describe the 5 spheres of life

6.	
7.	
8.	
9.	
10.	

### Nature Journaling and Observing Nature

Describe how you behave to observe nature when journaling.

**What are Ecosystems?** Place the matching term in the blank provided

1	Give the term used for individuals that make up an interbreeding, reproducing group within a given area
2	Give the term used for the study of ecosystems and the interactions that occur among organisms and between organisms and their environment
3	Give the term that describes the place where the organism lives out its life.
4	Name these organisms that feed on dead organisms
5	Give the name for animals that attack, kill and feed on other animals
6	Give the term for organisms that produce their own organic matter from inorganic material; self feeders
7	Name these primary consumers that eat producers.
8	Give the term that describes the role and position a species has in its environment
9	Name the term that refers to feeding levels within a food chain
10	The combination of all the feeding relationships that exist in an ecosystem.
11	Name this process that uses chlorophyll and solar energy to transform CO <sub>2</sub> and H <sub>2</sub> O into sugar.
12	Give the term used for the relationship between 2 organism where both organisms benefit by living together
13	Name organisms that can interbreed and produce fertile offspring.
14	Give the term used to describe all the species on Earth along with all their environments. It is seen as one bit ecosystem.
15	Give the term used to describe the physical and chemical, non-living components of an ecosystem
16	Name the molecule that plants use to capture light energy for photosynthesis
17	Give the term used for organisms that must feed on complex organic material in other organisms to obtain energy and nutrients
18	Name this transition region between ecosystems sharing characteristics of both ecosystems.

- |           |                |           |             |            |                 |
|-----------|----------------|-----------|-------------|------------|-----------------|
| Mutualism | niche          | habitat   | chlorophyll | species    | biosphere       |
| consumers | Trophic levels | food web  | Predator    | ecology    | ecotone         |
| abiotic   | photosynthesis | Herbivore | autotrophs  | population | detritus feeder |

## 1<sup>st</sup> Law of Thermodynamics

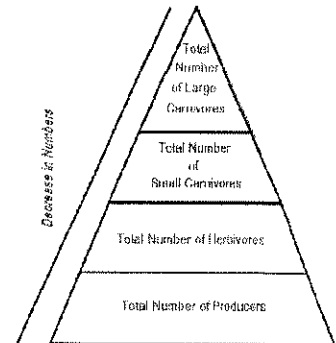
Definition

## 2<sup>nd</sup> Law of Thermodynamics

Definition

## Trophic Levels

Define trophic level



Explain why, in the diagram above, the trophic levels are arranged inside a triangle.

Define Food Chain

Define Food Web

Explain the difference between a food chain and a food web.

## Relationships

Define and give an example for the following terms

Predator	
Ex.	
Prey	
Ex.	
Mutualism	
Ex.	
Parasitism	
Ex.	
commensalism	
Ex.	

Define Competitive Exclusion (a.k.a. Intraspecific competition) and Give a practical example of this phenomenon.

Describe what happens to the sun's energy after it enters the atmosphere....

80% warms the \_\_\_\_\_  
1% generates \_\_\_\_\_  
.1% is used to fuel \_\_\_\_\_

Name and give examples of the 2 types of components that make up the biosphere

A \_\_\_\_\_

B \_\_\_\_\_

## Photosynthesis

Using the following terms and the answer sheet, place the term that best completes the paragraph in the corresponding blank on the answer sheet. There are just enough terms to fill in the blanks. You may mark this sheet but only your answer sheet will be checked.

# Word Bank

C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>

Glucose

Chlorophyll

chemical

water

consumer

chloroplasts

water

producers

water

carbon dioxide

light

Respiration

Oxygen

\*\*\*\*\*

Organisms known as   1   carry on photosynthesis to turn   2   energy into   3   energy. To do this they use   4   from the soil and   5   from the atmosphere. A special pigment known as   6   in the tiny   7   found in the cell is where photosynthesis takes place in plants. The main product of photosynthesis is called   8   whose chemical formula is   9   which is commonly referred to as sugar. A waste product of photosynthesis is   10  . When an animal or   11   eats the chemical energy, its cells carry on   12   to break down the sugar and release energy to do work for the organism. After releasing the energy for work, the animal releases   13   and   14   as waste products.

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.
13.	14.		

## Major Deserts of Arizona

List the major deserts of Arizona and the dominant plant in that ecosystem. Refer to your AZ Biome Packet for the following information

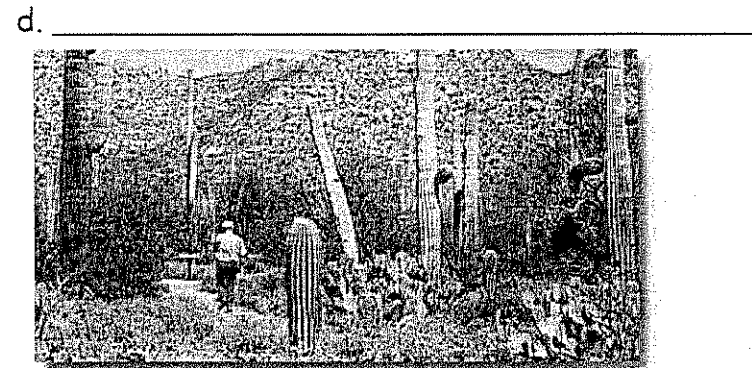
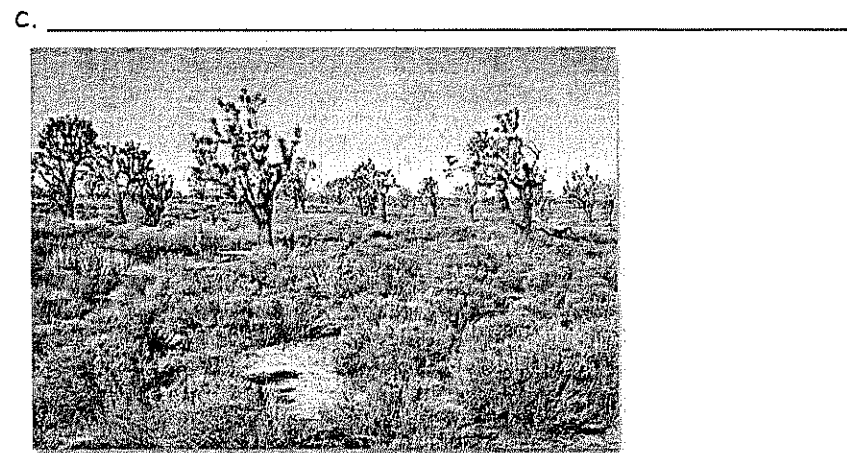
Desert	Major Vegetation

## Biome

### Define a biome

Review the characteristics of Arizona Biomes using your review guide and cards

Identify the names of the desert below

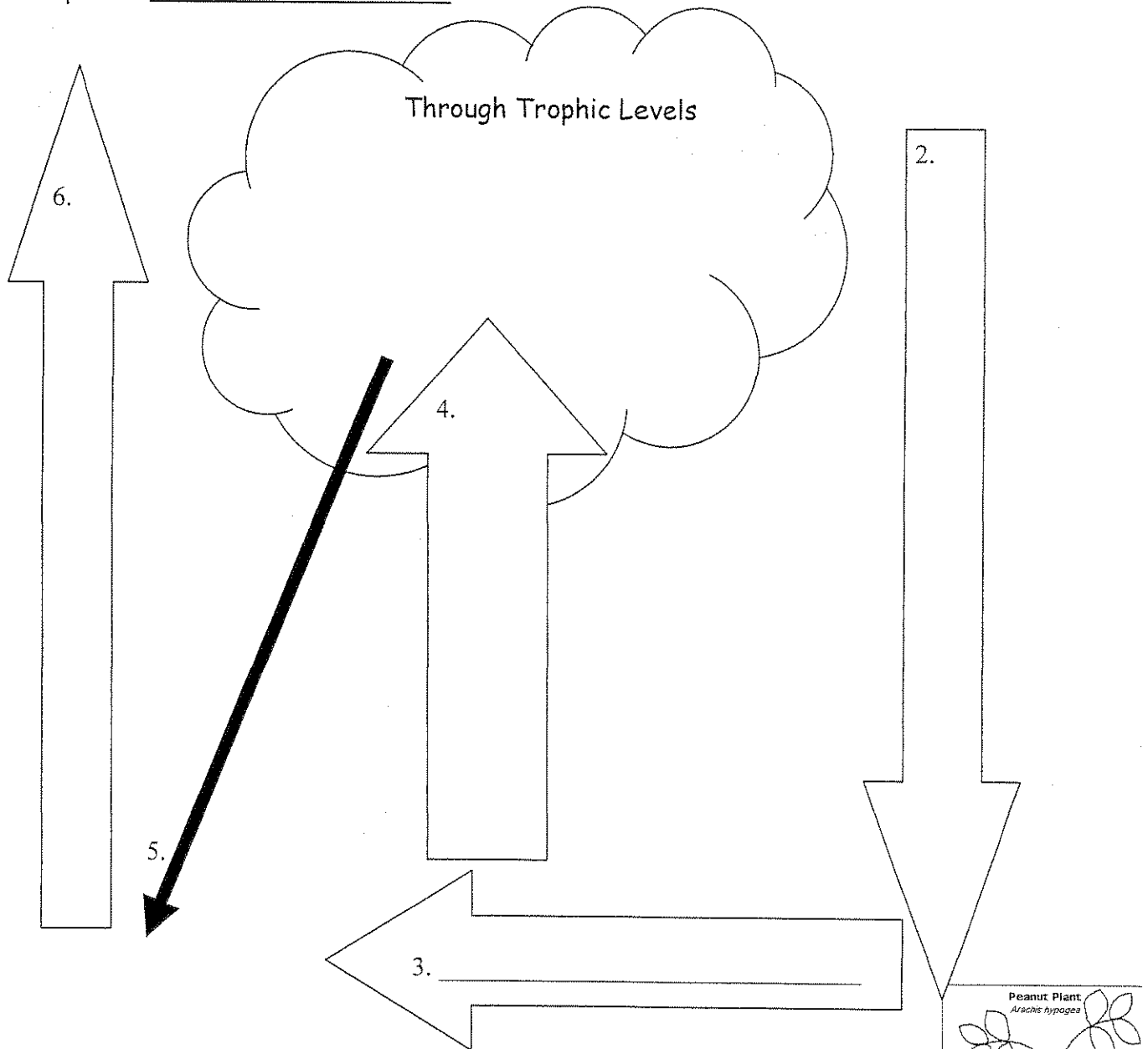


**Provide the correct answer for the Nitrogen Cycle.**

Label the arrows

# Atmosphere

1. Name the chemical formula of the most abundant, gaseous form of Nitrogen in the atmosphere. \_\_\_\_\_



Name the 2 types of bacteria in step 1.

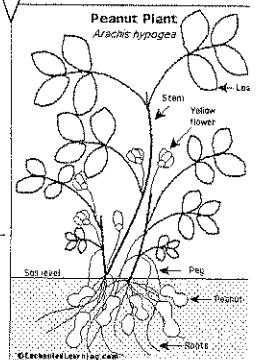
7. soil \_\_\_\_\_ 8. aquatic \_\_\_\_\_

9. Name the swelling on the root where step 1 takes place \_\_\_\_\_

10. What organic compound contains Nitrogen and is essential for living things?

\_\_\_\_\_

11. Name the plant family that converts Nitrogen. \_\_\_\_\_



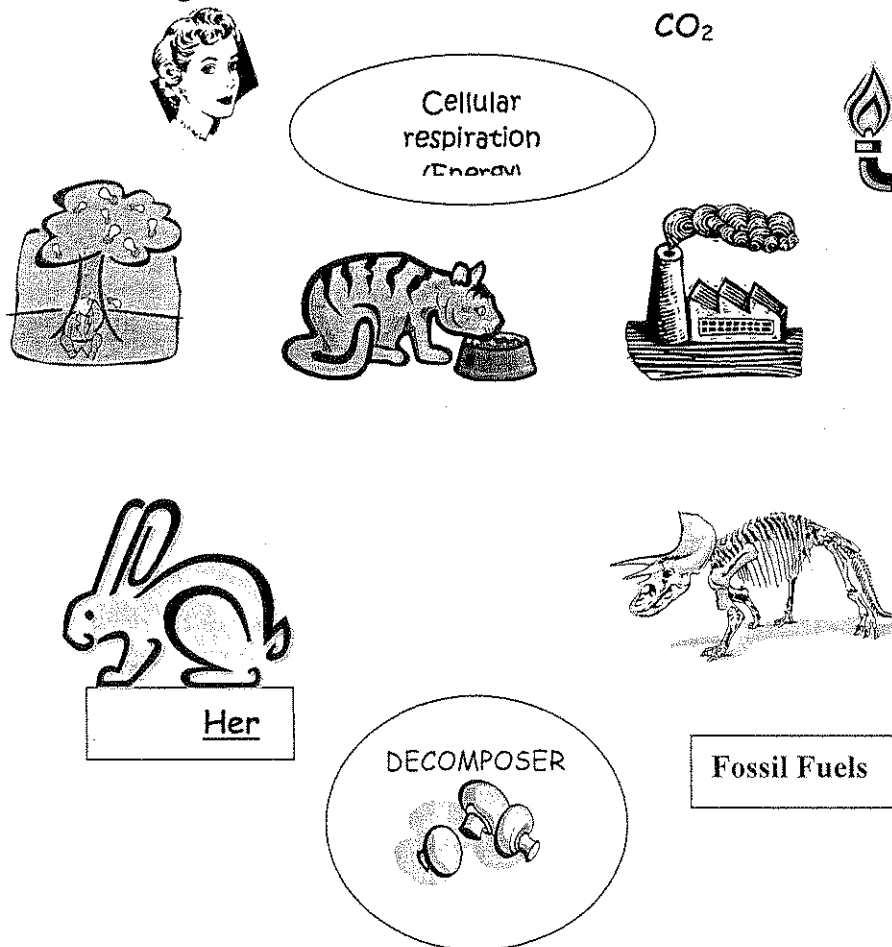
USE YOUR NOTES TO REVIEW THE FOLLOWING CYCLE TOPICS!!!

List the elements that cycle through the earth through living things and back again.  
(Hint there are at least 4 we mentioned!)

2. Give the general term for this cycling process of elements through the non-living to the living and back to the non-living.

3. Give 2 or 3 examples of organic matter.

4. **Carbon Cycle** : Draw arrows to indicate the direction the carbon cycles through the following:



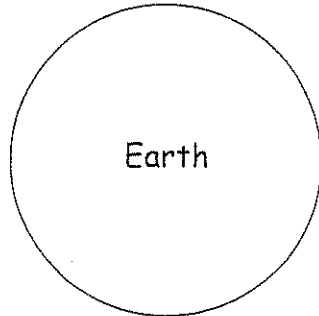
5. Lists places where Carbon is found.

6. List the only process that removes Carbon Dioxide from the atmosphere!!

7. What are the 3 processes that return Carbon to the air?

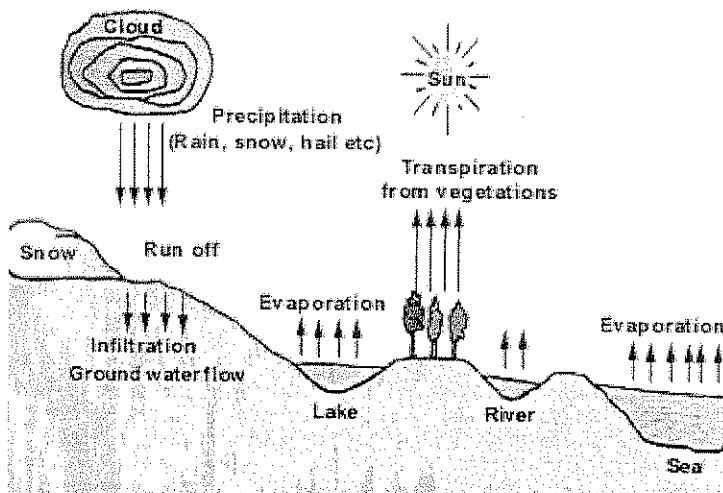


8. Where is Carbon stored for very long periods of time??
9. What processes return Carbon to the atmosphere? (at least 3)
10. Which of the above Carbon processes are caused by humans?
12. What major environmental process is caused by an excess of the process mentioned above?
13. Using the picture below, draw arrows representing the movement of energy to demonstrate the phenomenon you mentioned in question 12. Use the terms *CO<sub>2</sub>*, *heat*, *solar energy*, *temperature*, *trapped*, *combustion* in your picture.



14. List some of the consequences of global warming.

### Hydrologic Cycle – Review the parts of the water cycle!



#### Review these terms

Precipitation - rain

Evaporation - liquid to a gas

Infiltration - soaks into the ground

Run off - runs off the surface

Condensation - cloud formation

Transpiration - Water evaporating out of plants!!!!!!!!!!!!

## ENDANGERED SPECIES

Define Indicator species.

Explain how canaries were used as an indicator species in coal mines.

Why is the disappearance of frogs so important?

Define keystone species and how are they different from indicator species.

1. What is biodiversity and why is it important?

2. Give 3 reasons why its important to save biodiversity.

- a.
- b.
- c.

Define the 3 types of species extinction

3. Local	
4. Ecological	
5. Biological	

6. Find the current rate of extinction by humans vs. natural extinction on p 228 WOW ☹

7. What characteristics make some species more prone to ecological and biological extinction?

8. What is the number one reason for endangered species?

9. What are the main secondary factors to premature extinction (HINT: HIPPO)

10. What is habitat fragmentation and give 2 negative effects it has on species?

11. Why is introducing nonnative species the second biggest cause of animal and plant extinction?

12. What negative effects occur from clear-cutting forests?



Describe the 3 laws that protect endangered species.

Law	What it does
13. CITES	
14. Lacey Act	
15. Endangered Species Act	

16. Why isn't CITES as effective as it could be? ☹

16. Name an endangered species that is poached. How much \$ is it worth and why would somebody do that?

## Miscellaneous

What is the number one reason people get bitten by rattlesnakes?

