

Fall Study Guide

Review Lab Safety Rules and Procedures

*Make sure you review all the safety rules and procedures we covered at the beginning of the school year.

CHAPTER 1: INTRO TO BIOLOGY

List the 7 characteristics all living things

1.	2.	3.	4.	5	6.	7.
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Steps in the scientific method...

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

List the four unifying themes in biology

1. _____
2. _____
3. _____
4. _____

Hypothesis vs. Theory

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Experiment

Control Group:

Independent Variable:

Dependent Variable:

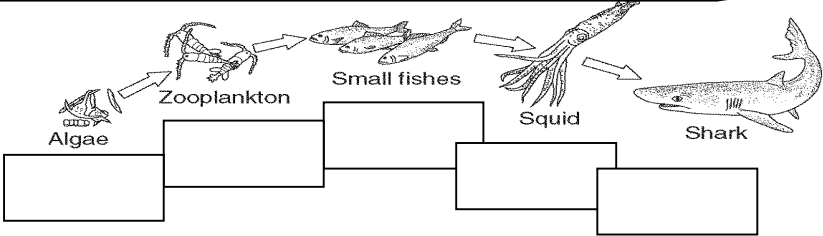
Chapters 13-16: Ecology

List the levels of organization in the biosphere:

Smallest to Largest:

List 2 biotic and 2 abiotic factor in an ecosystem:

LABEL the trophic levels. What do the arrows in the food chain represent?



Create an energy pyramid from the above food chain. Which level can support the most organisms?

If there were a toxin in the environment, which organism would contain the most?

Who has the greatest biomass?

What percent of the energy is available to the next trophic level?

What happens to the rest of the energy?

List ways these elements cycle:

CO₂: _____

H₂O: _____

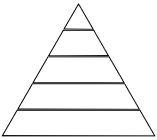
N₂: _____

P: _____

Movement of Populations

Immigrant:

Emigration:



What organism is involved in fixing nitrogen during the Nitrogen Cycle?

What is Ecology?

Describe primary succession:

CAUSES?

What are pioneer species? List two.

Describe secondary succession:

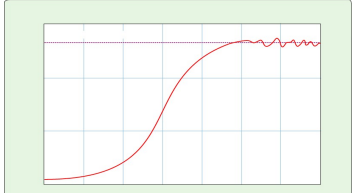
CAUSES?

What is a climax community?

How does overpopulation affect the environment?
(Exceeding carrying capacity!)

What is carrying capacity?

Label carrying capacity-



What is a limiting factor?

List 3 density dependent limiting factors:

List 3 density independent limiting factors:

What is the greenhouse effect?

What would happen if we didn't have the greenhouse effect?

What is an Umbrella Species?

What organisms benefit from it?

What is the EPA?

What is biomagnification?

What organisms are most affected by biomagnification?

	What causes it?	What does it do to the environment?
Global warming		

	<u>Gravitropism</u>	<u>Phototropism</u>	<u>Thigmotropism</u>
What it causes plants to do			
Why this is helpful			

Vertabrates have a _____

What is an organism's niche?

List an organism and give an example of its niche.

<u>Behavior</u>	<u>What is it? Give an example.</u>
Innate Instincts	
Classical Conditioning	
Operant Conditioning	
Learned	Imprinting:
	Habituation:

Photosynthesis vs. Chemosynthesis

How does mimicry and camouflage enable animals to survive?

❖ Heterotroph/Consumers: _____
❖ Autotroph/Producers: _____

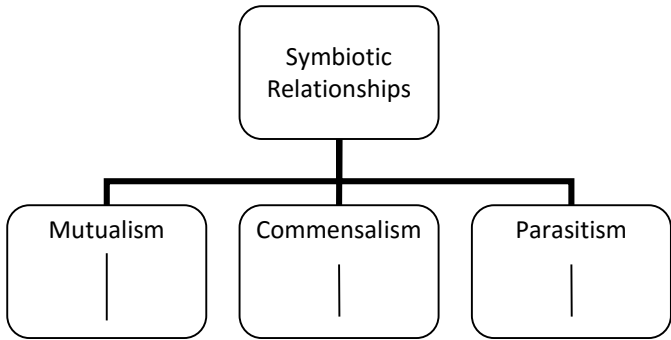
Describe the following zones in oceans.

Abyssal
Bathyal
Neritic
Intertidal

Label the zones:

Herbivores eat _____
Carnivores eat _____
Omnivores eat _____
Decomposers _____
Detritivores _____

Difference between Endotherms & Ectotherms.

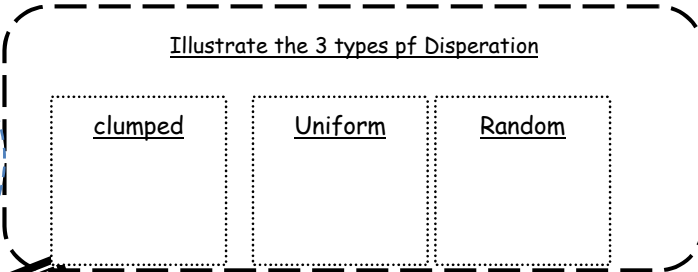


	Definition	Examples
Intraspecific Competition		
Interspecific Competition		

What is predation?

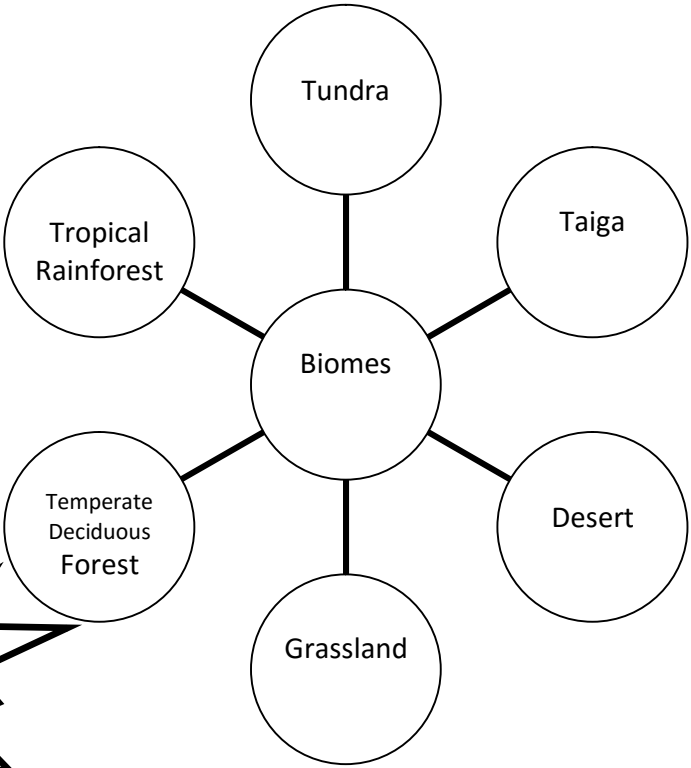
For each Biome, describe their temperature, precipitation, and provide examples of plants.

What is Homeostasis?
Give an example.



What makes Estuaries different from all other environments?

What is a keystone species?
Examples:



What are Xerophytes?

Renewable Resources	Nonrenewable Resources
1.	1.
2.	2.
3.	3.

What is a hormone? _____

What does the hormone auxin do? _____

What do gibberellins cause? _____

What are Herbicides? _____

List 4 types of Social Behaviors.

- 1.
- 2.
- 3.
- 4.

What is Migration?

What is Circadian Rhythm?

CHAPTER 2: MACROMOLECULES (ORGANIC MOLECULES)

Macromolecules	Major functions	Monomer	Examples
Carbohydrates			
Lipids			
Proteins			
Nucleic Acids			

What group of macromolecules do enzymes belong to?

What is a chemical reaction?

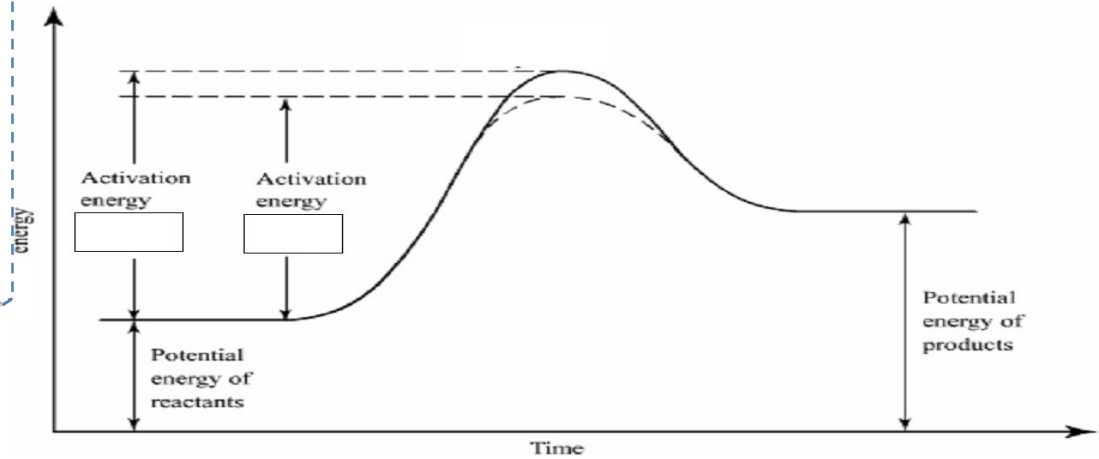
What are reactants?

What are products in a chemical reaction?

Make a sketch that explains what is meant by the sayings that “enzymes are specific” and fit like a “lock and key.” Label your sketch with the following words: active site, substrate/reactants, enzyme, products.

Characteristics of Enzymes

1. What will happen to the rate of reaction if you....
Heat up the enzyme? _____
Cool down the enzyme? _____
Change the pH? _____
2. If you add more enzymes (increases the concentration) to a solution of substrate, what will happen to the reaction rate
3. What do enzymes do? How do enzymes affect activation energy? Look at the graph below.



Chapter 3: Cell Theory & Cell Structure

<u>Organelle</u>	<u>Function</u>	<u>Eukaryote</u>	<u>Prokaryote</u>
Golgi Body			
Ribosome			
Nucleus			
Lysosome			
Cell Membrane			
Mitochondria			
Vacuoles			
ER (smooth and rough)			
Cell Wall			
Chloroplast			
Vacuoles			

What are the 3 part of the "cell theory?"

1- _____

2- _____

3- _____

Hooke	Leeuwenhoek	Scheiden	Shwann	Virchow

Describe the structure and composition of the cell membrane. (make a sketch)

List three differences between plant cells and animal cells.

Only example of prokaryote cell:

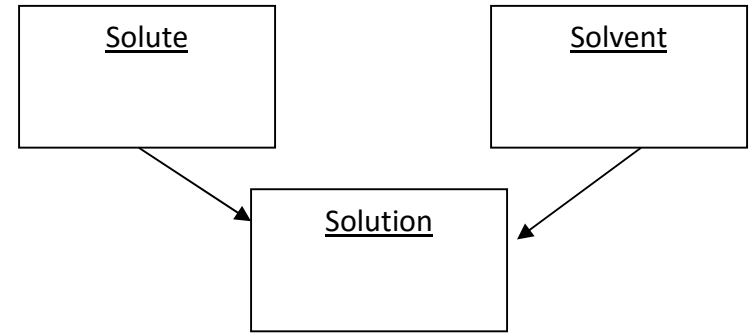
Examples of eukaryotes cells:

How are prokaryotic cells different from eukaryotic cells (List 3 ways)?

Which have been around longer?

CHAPTER 3: CELL TRANSPORT

What is *Osmosis*? What is *Diffusion*?



Describe each type of solution.
What happens to the cell?

Hypotonic	Isotonic	Hypertonic

Venn Diagram
Put the following in the venn diagram:

- Need energy
- High to low
- Low to high
- Does not need energy
- Molecules pass through cell membrane

What is endocytosis and exocytosis?

