Review Final

1. Any organism that would like to spread its genes to the next generation must … )hint it starts with an R)

Reproduce

1. List the steps for the scientific method

Observe

Hypothesis

Experiment

Analyze Data

Conclude

1. Describe the major steps in the carbon cycle

Consumers breathe out CO2

Producers incorporate that CO2 into their sugars

Consumers eat the sugars

1. Define mutualism. Give an example.

Both organisms benefit. Certain birds will eat the food out of the teeth of crocodiles. This gives them a meal and the crocs get a clean mouth.

1. What is a niche? What is a habitat? How are they different?

Niche – Role of an organism in its environment

Habitat – Where an organism lives

1. Define organism, population and community. What is the difference?

Organism – one unit of life

Population – group of organisms

Community – group of populations

1. Secondary succession proceeds until the colonizers are all in place. When this happens it is defined as a climax community
2. Bacteria do not have many restrictions on their growth. This is why they follow a j curve (exponential growth) curve graph. They grow very rapidly.
3. The population of black bears has met its limit. There is not enough food to support all of the bears. This creates a limit on the number of bears that can exist in New Jersey. What is this called?

Carrying capacity

1. What type of graph would this follow?

S curve – or logistic growth

1. Conservation biology is an area of science that employs biologists to save very low numbers of organisms. What term do we give to a group of organisms that may not exist in a few years?

Endangered

1. Habitat degradation is when…

Habitats are slowly destroyed removing biodiversity.

1. What is a monomer? What is a polymer? What is the difference?

Monomer – Single unit

Polymer – Many units

1. A chemical compound contains 1 or more Elements
2. What subatomic particles are in the nucleus of an atom?

Protons Neutrons

1. What are the monomers for a protein?

Amino Acids

1. On a scale of 1 – 14 a strong base would be 14 A strong acid would be 1
2. All living things are made of cells. They are the basic unit of life.
3. What are the three main points to the cell theory?
4. All cells come from existing cells
5. All cells are the basic unit of structure and function
6. All living things are made of cells
7. What is the main difference between the prokaryotic and eukaryotic cell?

Prokaryotic do not have nucleuses. Eukaryotic cells have membrane bound nucleuses.

1. What is the job of DNA?

Store genetic information

1. What is a gene?

Section of DNA that codes for a trait

1. Name one main structure that is found in plant cells but not animal cells.

Cell wall

1. The cells life > interphase > Mitosis > Telophase
2. What is the longest phase of the cell cycle?

G1

1. G1, S, G2 all make up…

Interphase

1. Chlorophyll has what job in plants? (few questions on this answer)

Captures light energy and uses it to create ATP

1. Write the equation for photosynthesis.

6CO2 + 6H20 🡪 C6H12O6+ 6O2

1. What process produces energy in the presence of oxygen?

Aerobic respiration

1. What process produces energy without the presence of oxygen?

Anaerobic respiration (fermentation)

1. What is crossing over?

Exchange of information between chromosomes during meiosis

1. What is a genotype? What is a phenotype? Explain the difference.

Genotype – Genetic makeup for a trait

Phenotype – Physical makeup for a trait

1. A tool that is great at predicting the outcomes from crossing two organisms is a Punnett Square Give an example below.
2. Define homozygous. Define heterozygous. Explain the difference.

Homozygous – Pure genotype AA

Heterozygous – Mixed genotype Aa

1. Define a human female gamete. Define a human male gamete.

Female – Egg

Male - Sperm

1. List the pairings of nitrogen bases for DNA below. List the pairings for nitrogen bases when DNA matches with RNA as well. (Don’t forget U!)

A – T

C – G

A – U (RNA)

1. The backbone of the DNA strand is made from sugars and phospates
2. The process where we create an identical copy of DNA is called…

DNA replication



1. Translation takes place in the ribosome
2. Draw mRNA and tRNA.



1. How old is earth?

4.6 Billion years old

1. Define the following words…
   1. Lysosome - Vesicle with digestive enzymes
   2. Ribosome – Protein factory
   3. Organelle – Small working subunit of a cell
   4. Cell Membrane/plasma membrane – Lipid membrane around a cell
   5. Chloroplasts – Sight of photosythe3is
2. Define the following words
   1. Mutualism – Two benefit
   2. Commensalism – One benefit one neutral
   3. Parasitism – one benefit one loses
   4. Food Web – Diagram of the trophic pyramid
   5. Producer – Creates its own food
   6. Scavenger/Detritus Feeder – Eats dead or decaying matter
   7. Autotroph – Produces its own food
3. Define the following words
   1. Haploid – half the chromosomes
   2. Meiosis – one cell to four gametes
   3. Crossing Over – exchange of information during meiosis
   4. Zygote – Organism after conception.
   5. Fertilization – combination of zygotes
   6. Heredity – genetic information being passed down