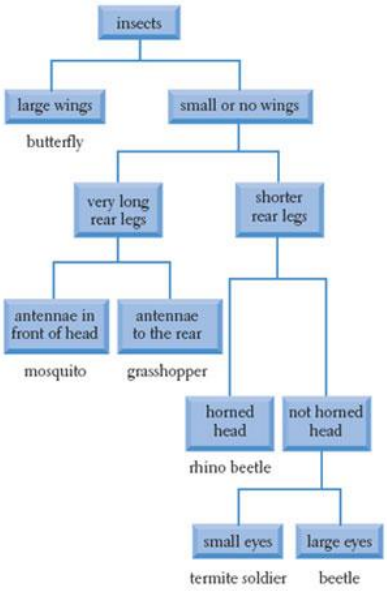
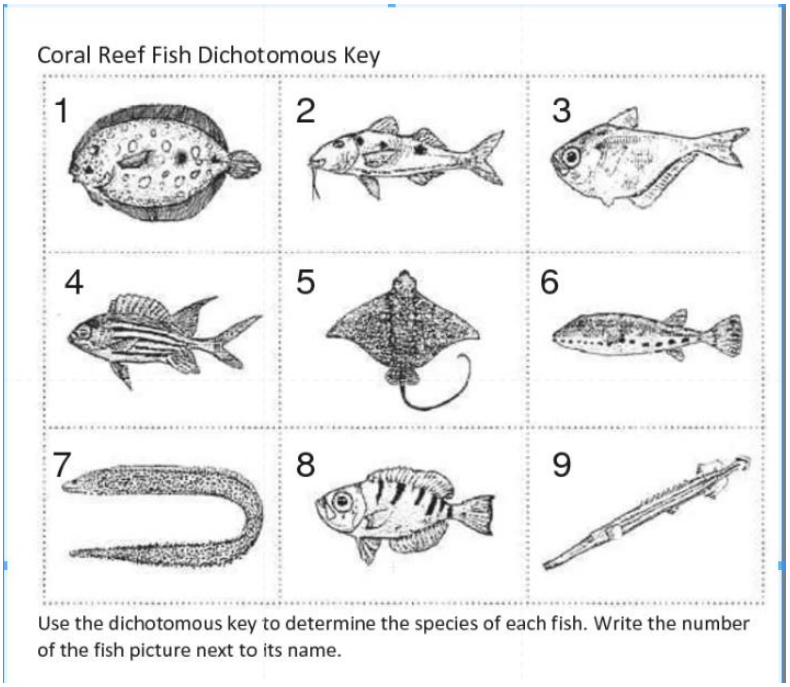
Life Science Cumulative Review

L1 - Classification and Kingdoms

Taxonomic/Dichotomous keys:

Use the taxonomic key to identify an organism that has the following characteristics: small or no wings, shorter rear legs, not a horned head and small eyes





Step 1	a. If fish shape is long and skinny then go to step 2 b. If fish shape is not long and skinny, then go to step 3
Step 2	a. if fish has pointed fins, it is a trumpet fish = _____ b. If fish has smooth fins, it is a spotted moray eel = _____
Step 3	a. If fish has both eyes on top of the head, then go to step 4 b. If fish has one eye on each side of the head, then go to step 5
Step 4	a. If fish has long whip-like tail, it is a spotted eagle ray = ____ b. If fish has short, blunt tail, it is a peacock flounder = _____
Step 5	a. If fish has spots, then go to step 6 b. If fish does not have spots, then go to step 7
Step 6	a. If fish has chin "whiskers," it is a spotted goat fish = _____ b. If fish does not have chin "whiskers," it is a band-tail puffer = _____
Step 7	a. If fish has stripes, then go to step 8 b. If fish does not have stripes, it is a glassy sweeper = _____
Step 8	a. If fish has a v-shaped tail, it is a squirrel fish = _____ b. If fish has a blunt tail, it is a glass-eye snapper = _____

Activities we did related to this topic:

Levels of Classification (broad to specific):

K

P

C

O

F

G

S

Six Kingdoms of Living Things:

	Archaebacteria	Eubacteria	Protists	Fungi	Plants	Animals
Cell Type						
Ability to make food						
Number of Cells						
Examples:						

L2 - Cells and Cell Processes

Characteristics of Living Things:

C

C

R

R

E

G

Basic Needs of Living Things:

F

W

S

H

Cell Theory:

-
-
-

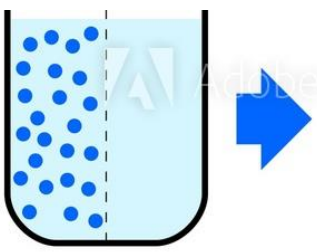
Cell Processes:

I. Cell transport:

a. passive transport -

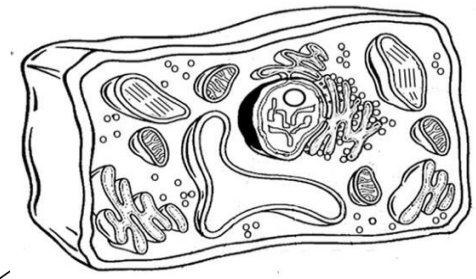
i. diffusion -

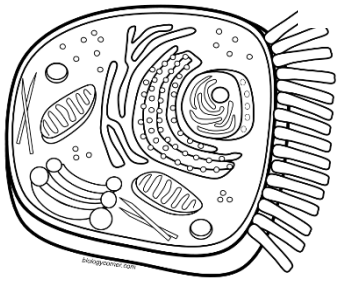
ii. osmosis -



Activities we did related to this topic:

2. Cell organelles:





Activities we did related to this topic:

Label the following organelles in the animal and plant cell diagrams. List their functions below:

1. cell membrane
2. cell wall
3. nucleus
4. cytoplasm
5. vacuole
6. chloroplasts
7. mitochondria
8. ribosomes
9. endoplasmic reticulum
10. Golgi Body

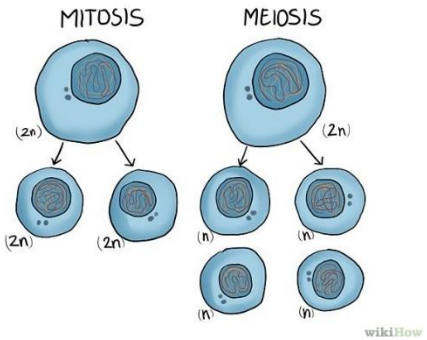
3. Cell Energy::

Photosynthesis happens in the	
Respiration happens in the	

4. Cell Reproduction:

Sexual reproduction uses _____ and results in cells that are _____.

Asexual reproduction uses _____ and results in cells that are _____.



Human Body Systems:

1. Levels of Organization:

2. How do the following body systems work together?

a. Respiratory & Circulatory

b. Digestive & Excretory

c. Digestive & Circulatory

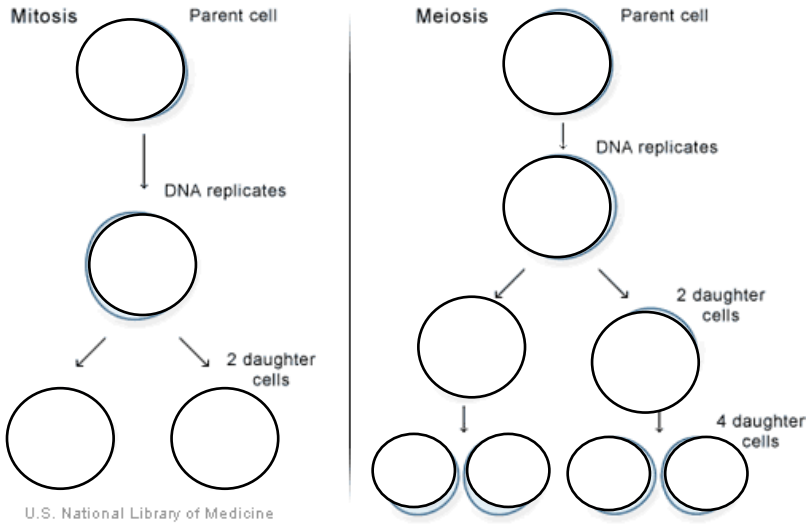
d. Muscular & Skeletal:

Activities we did related to this topic:

L3 – Inheritance of Traits

Define the following terms:

1. Purebred
2. Alleles
3. Hybrid
4. Dominant
5. Recessive
6. Punnett square
7. Genotype
8. Phenotype
9. Homozygous
10. Heterozygous
11. Selective breeding

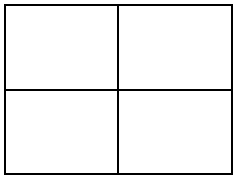


Complete the following Punnett squares. Use the following symbols:

T= tall Y = yellow R = round

t = short y = green r = wrinkled

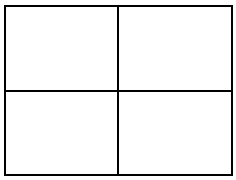
1. Cross a homozygous round seed with a homozygous wrinkled seed. Determine the probability of each genotype(s) and phenotype(s).



Genotype(s):

Phenotype(s):

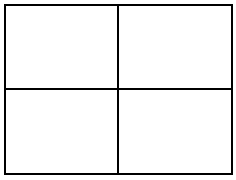
2. Cross a hybrid tall plant with a purebred short plant. . Determine the probability of each genotype(s) and phenotype(s).



Genotype(s):

Phenotype(s):

3. Cross a hybrid yellow-seeded plant with another hybrid yellow-seeded plant. . Determine the probability of each genotype(s) and phenotype(s).

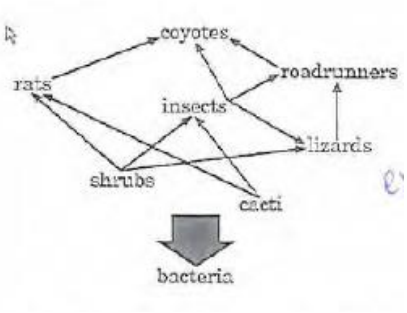


Genotype(s):

Phenotype(s):

L4 - Interactions of Living Things

Food Chains, Food Webs & Energy Pyramids:



1. Draw a food chain from this food web.

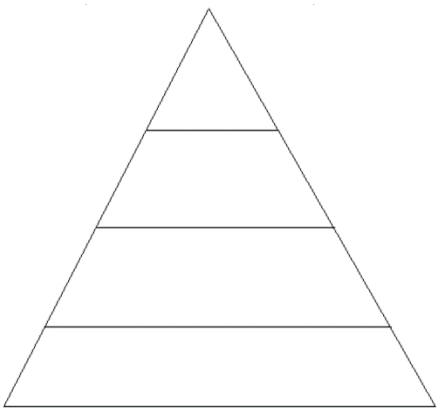
2. In which biome is this food web *most likely* to be found?
a. forest b. desert c. grassland d. urban

3. What is the function of bacteria in this foo web?
a. decomposers b. producers c. primary consumers d.. secondary consumers

4. If these organisms were arranged in a food pyramid, which organism would have the least amount of total energy available?

a. coyote b. insect c. lizard d. shrub

5. Draw the energy pyramid for #1 (your food chain):



6. Which population would increase *most* if the insects were eliminated?

a. decomposers b. producers c. primary consumers d.. secondary consumers

7. Which of the following populations begins the flow of energy through the food web?

a. coyote b. insect c. lizard d. shrub

Review these terms!

Activities we did related to this topic:

producer	organism that makes it own food
consumer	organism that obtains energy by feeding on others
decomposer	breaks down dead organisms and returns nutrients back to the soil
herbivore	animal that eats only plants
carnivore	animal that eats only other animals
omnivore	animal that eats both plants and animals
food web	overlapping food chains in an ecosystem
food chain	series of events in which one organism eats another
competition	struggle between organisms for the limited resources in a habitat
prey	animal that a predator feeds on
predator	carnivore that hunts and kills other animals for food
symbiosis	relationship between two organisms in which at least one of the organisms benefit
commensalism	relationship between two organisms in which one species benefits and the other is not helped or harmed
mutualism	type of symbiosis in which both partners benefit from living together
parasitism	relationship between which one organism live on or inside another and harms it
parasite	that lives on or in a host and causes harm to the host
host	organism that provides a source of energy or a suitable environment for a virus or another organism to live
biotic factors	living parts of an ecosystem
abiotic factors	nonliving parts of an ecosystem
ecosystem	all living and non living things that interact in an area
community	all the different populations that live together in an area
population	all the members of one species in a particular area
habitat	place where an organism lives and that provides the things organism needs
niche	organism's particular role in an ecosystem or how it makes its living
extinction	disappearance of all members of a species from earth
limiting factor	environmental factor that prevents a population from increasing
natural selection	process by which individuals that are better adapted to their environment are more likely to survive and reproduce

Earth's Biomes

Biome	Characteristics
	Found in regions close to the equator. Receive a lot of rain and warm temperatures throughout the year with constant sunlight. Many diverse animals & tall trees form a canopy.
	Receives less than 25 cm of rain per year. Very dry and warm climate. Animals & plants store water to adapt to the lack of rain. Animals are active at night & plants have a hick & waxy covering.
	Sometimes called a prairie, the temperature ere is comfortable because it is located in the middle latitudes. Receives 25-75 cm of rain per year, not enough for trees to grow. Typically populated by grasses & home of the largest animals such as bison, antelopes, giraffes & rhinoceros.
	Lots of trees that shed their leaves & grow nw ones each year are found here. Receives 50 cm of rain per year, enough to support the growth of trees & plants. Temperatures vary during the year with all the seasons. Many birds, opossums, bears, and porcupines are found here & may migrate or hibernate in the winter. Found in the eastern part of the United States.
	Here in northern Canada you will find many trees that have needle like leaves & produce seeds in cones such as pine, fir & spruce trees. Winters are very cold with much snow & summers are warm enough to melt the snow and bring much rain. Trees have a waxy covering, a necessary adaptation to keep water from evaporating since much of the year the water is frozen. Many herbivores live her such as deer, elk, moose & beavers that attract large predators such as wolves, bears & lynxes.
	Most animals here have gills to take in oxygen & fins to swim. Consists of still (ponds & lakes) and running (streams & rivers) water. Algae outnumbers plants because they can float & don't need to be rooted.
	Largest of all biomes because it covers 70% of the earth's surface. Many animals that are adapted to live in saltwater live here.
	Extremely cold & dry biome located in the arctic regions. Receives little precipitation like the desert but here most of the soil is permanently frozen. No trees grow here because of the permafrost not allowing for roots to grow. The top layer of soil thaws for grass to grow. Herbivores graze on the grass or lichen & have thick fur to withstand the freezing climate.
	This is a very productive, very diverse and wet biome. It is the place where a river meets the ocean, producing a salt/fresh water mix. Large amounts of nutrients carried by the river and lots of sunlight make it a good habitat. Producers include mash grass and algae. Consumers include crabs, worms, clams, oysters and fish. Used as a breeding ground by many ocean animals.

L5 - Changes Through Time

Evolution means _____ over _____.

Natural Selection is also called "_____ of the _____" which means that the organisms that are best suited for their environment will survive and _____.

Four Factors that affect Natural Selection:

1. _____ - all species are capable of producing far more offspring than can survive.

2. _____ - the struggle between organisms for the limited resources in a habitat (ex: food, shelter)

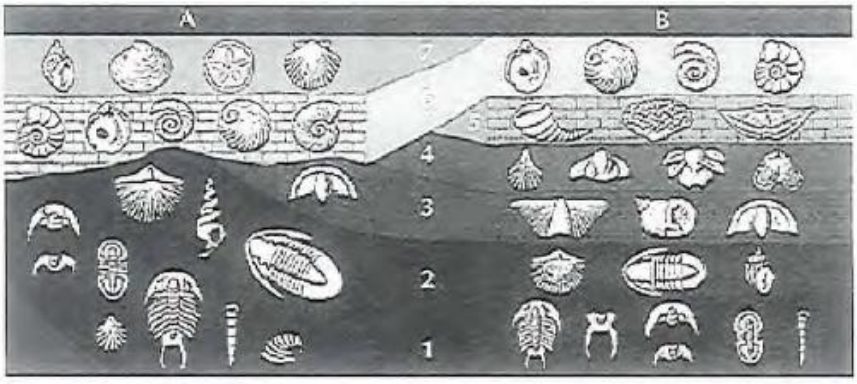
3. _____ - the variety of traits in a populations will allow some individuals to be better at competing for resources of avoiding predation (ex: speed, coloration, hair length, beak size, shape, etc.)

4. _____ - organisms better able to compete due to variations in the population, will be the one most likely to reproduce and thus pass on genes for the traits that helped them compete better. After many generations, this can lead to more members of a population having a helpful trait.

What did Darwin notice about the beaks of the finches on the Galapagos Islands?

What were Kettlewell's findings with the peppered moths of Manchester?

Which rock layer contains the oldest fossils? The youngest?



Activities we did related to this topic: