Mendel and Genetics-- Vocabulary Probe

1_____Heredity	a. the study of heredity
2_____Genetics	b. plants Mendel used that always produced the same trait 100% of the time
3_____True (pure) Breeding	c. passing on characteristics to offspring
4_____Alleles	d. the form of a trait that is always expressed
5_____Dominant	e. two alleles of the same type
6_____Recessive	f. two alleles that are different
7_____Homozygous	g. different versions of a gene- one from each parent
8_____Heterozygous	h. the form of a trait not expressed when the dominant is present

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9_____Genotype	i. a diagram showing how a trait is inherited in a family
10_____Phenotype	j. individuals possess two alleles for each trait and will pass only one of the two randomly to their offspring
11_____Pedigree	k. the physical appearance of a trait
12_____Law of Segregation	l. alleles of different genes separate independent of one another when gametes are formed
13_____Law of Independent Assortment	m. the types of alleles an individual has for a trait

Modes of Inheritance:

14_____Complete dominance	a. two alleles can be dominant-- for example in type AB blood
15_____Incomplete dominance	b. the dominant trait is always expressed when the phenotype is heterozygous
16_____Codominance	c. characteristics found on the X chromosome
17_____Multiple Alleles	d. trait found in both sexes equally
18_____Autosomal Inheritance	e. a trait controlled by three or more alleles like blood type
19_____Sex-linked Inheritance	f. many genes control the traits as in eye color and hair color so that you have many variations
20____Polygenic Inheritance	g. there are three possible phenotypes and the heterozygous is an intermediate form

Genetic Disorders

21_____Sickle Cell Anemia	H. a disorder that causes bleeding because blood does not clot properly
22_____Cystic Fibrosis	I. a disease that becomes apparent around ages 30-40 and causes deterioration of brain tissue and loss of muscle control and severe cognitive deficits
23_____Hemophilia	J. a recessive disorder that causes defective hemoglobin that changes the shape of blood cells causing pain and organ dysfunction
24_____Huntington's Disease	K. most common recessive disorder in Caucasians that results in lungs becoming clogged with mucus because these individuals don't make a protein necessary

DNA Structure/Replication/Meiosis Vocabulary Probe

1____meiosis	a. is produced when sperm and egg join
2____haploid	b. DNA is made of many of these subunits (monomers)
3____diploid	c. a process that produces gametes (reproductive cells)
4____nucleotides	d. a reproductive cell that has half the chromosomes of the parent cell
5____zygote	e. a cell with two full sets of chromosomes
6____fertilization	f. a source of variation that happens when pieces of homologous chromosomes are exchanged during ProphaseI
7____crossing over	g. happens when sperm and egg join

8____replication	h. the sugar component of DNA
9____deoxyribose	i. many different gene combinations in a population
10____tetrad	j. an enzyme that bonds free nucleotides in replication
11____genetic variation	k. an enzyme that splits (unzips) the DNA strand
12____complementary	l. a process that creates a copy of DNA
13____DNA helicase	m. four chromosomes (two pairs of homologous chromosomes)
14____DNA polymerase	n. when two specific nitrogen bases bond together
15____Random alignment	o. how tetrads arrange themselves side by side in Metaphase I

Protein Synthesis Vocabulary Probe

1____point mutation	a. organelle that is the location of protein synthesis
2____frameshift mutation	b. brings amino acids to the ribosome
3____ribosome	c. enzyme that is needed in transcription
4____nucleus	d. what ribosomes are made of
5____transcription	e. the site where transcription takes place
6____translation	f. carries DNA's coded message to the ribosome
7____RNA polymerase	g. process that converts mRNA's message into a protein
8____rRNA	h. process of converting (rewriting) DNA into RNA
9_____tRNA	i. insertion or deletion
10____mRNA	j. substitution

11____peptide bond	k. three base code on tRNA
12____codon	l. three base code on mRNA
13____anticodon	m. the site where translation begins
14____P site	n. the site where the tRNA leaves the ribosome
15____A site	o. the site which receives the next tRNA in translation
16____E site	p. a change in the DNA
17____ polypeptide	q. the bond between amino acids
18____mutation	r. a string of amino acids

Name _____ Class _____ Date _____

Skills Worksheet

Vocabulary Review

Complete each statement by writing the correct term or phrase from the list below in the space provided.

abiotic factors	ecology	primary succession
biodiversity	ecosystem	secondary succession
biotic factors	habitat	succession
community	pioneer species	

1. The number of species living within an ecosystem is a measure of its _____ .

2. A somewhat regular progression of species replacement is called _____ .

3. A(n) _____ consists of a community and all the physical aspects of its habitat, such as the soil, water, and weather.

4. The living organisms in a habitat are called _____ _____ .

5. The first organisms to live in a new habitat are small, fast-growing plants called _____ _____ .

6. Succession that occurs where plants have not grown before is called _____ _____ .

7. The many different species that live together in a habitat are called a(n) _____ .

8. The study of the interactions of living organisms with one another and with their environment is called _____ .

9. Succession that occurs where previous growth has occurred is called _____ _____ .

10. The physical aspects of a habitat are called _____ _____ .

11. The place where a particular population of a species lives is called its _____ .

Vocabulary Review *continued*

In the space provided, write the letter of the description that best matches the term or phrase.

_____ **12.** primary productivity

_____ **13.** producers

_____ **14.** consumers

_____ **15.** trophic level

_____ **16.** food chain

_____ **17.** herbivore

_____ **18.** carnivore

_____ **19.** omnivore

_____ **20.** detritivore

_____ **21.** decomposers

_____ **22.** food web

_____ **23.** energy pyramid

_____ **24.** biomass

_____ **25.** biogeochemical cycle

_____ **26.** ground water

_____ **27.** transpiration

_____ **28.** nitrogen fixation

a. an interconnected group of food chains

b. a pathway formed when a substance enters a living organism, stays for a time in the organism, then returns to the nonliving environment

c. the dry weight of tissue and other organic matter found in a specific ecosystem

d. organisms in an ecosystem that first capture energy

e. water retained beneath the surface of Earth

f. the rate at which organic material is produced by photosynthetic organisms

g. a diagram in which each trophic level is represented by a block with a width proportional to the amount of energy stored in the organisms at that trophic level

h. the process of combining nitrogen with hydrogen to form ammonia

i. organisms that obtain energy by consuming plants or other organisms

j. the evaporation of water from the leaves of plants

k. a level in a diagram based on the organism's source of energy

l. an organism that obtains energy from organic wastes and dead bodies

m. the path of energy through the trophic levels of an ecosystem

n. bacteria and fungi that cause decay

o. an animal that is both a herbivore and a carnivore

p. an animal that eats other animals

q. an animal that eats plants or other primary producers

Evolution Vocabulary Probe

1____natural selection	a. a group of the same organism that can interbreed
2____genetic variation	b. structures that no longer have a functional purpose
3____species	c. a process in which individuals that best fit the environment survive to reproduce at a higher rate
4____adaptation	d. differences in individuals within the same species
5____gradualism	e. similar structures in different species that indicate a common ancestor
6____punctuated equilibrium	f. changes in a species over time to fit the environment
7____homologous	g. hypothesis that evolution occurs in bursts of rapid change
8____vestigial	h. hypothesis that evolution occurs at a slow constant rate
9____divergence	i. accumulation of differences between two populations
10____directional selection	J. random change in allelic frequency not selected for
11____stabilizing selection	K. a small group of a species starts a new population
12____disruptive selection	L. change in allelic frequency towards one extreme
13____speciation	M. a new species-- unable to interbreed with members of the original group
14____genetic drift	N. emigration or immigration--genes move in or out
15____gene flow	O. describes a phenomenon (mathematically)
16____founder effect	P. a prediction of what will happen based on prior knowledge or experience
17_____theory	Q. change in allelic frequency toward both extremes
18_____law	R. change in allelic frequency toward the middle
19_____hypothesis	S. an explanation for a natural phenomenon

Biotechnology Vocabulary Probe

1____palindrome	A. a circular piece of bacterial DNA that can replicate itself
2____plasmid	B. DNA from two or more different species
3____recombinant DNA	C. unpaired bases segments that remain after DNA is cut by a restriction enzyme
4____restriction enzymes	D. a sequence of DNA bases that are the same backwards and forwards
5____sticky ends	E. seaweed powder that is used to make gels for electrophoresis
6____vector	F. a process used to separate DNA fragments by size to create a DNA fingerprint
7____agarose	G. used to transfer DNA into a host cell; plasmids, viruses, and yeast
8____gel electrophoresis	H. they cut at specific locations on DNA
9____transgenic organism	I. an undifferentiated cell; a cell whose job is not determined and could turn into any kind of cell
10____gene splicing	J. making an exact copy of an organism using its DNA
11____cloning	K. an organism that contains DNA from two or more species
12____gene therapy	L. cutting and reattaching different pieces of DNA with sticky ends
13____PCR	M. inserting normal genes into human cells to treat diseases
14____stem cell	N. a process to make many copies of a DNA sample to use in testing
15____totipotent	O. found in umbilical cords and adults; can become a restricted range of cells
16___pluripotent	P. found in early embryos; can become any type of cell
17____mulitpotent	Q. found in late embryos and fetuses; can become almost any kind of cell

Digestion/ Circulation Vocabulary Probe

1____ pancreas	a. prevents food from moving into the trachea
2_____peristalsis	b. connects the mouth to the stomach, moves food by peristalsis
3_____epiglottis	c. organ that absorbs nutrients
4_____esophagus	d. mechanically breaks down food by peristalsis and chemically breaks down proteins
5_____stomach	e. wave like contractions of smooth muscle
6____ gallbladder	f. secretes digestive enzymes
7_____liver	g. makes bile
8_____small intestine	h. organ that absorbs water
9_____large intestine	i. stores bile
10_____vein	j. helps blood clot
11_____capillary	k. fights infection
12_____artery	l. water and dissolved nutrients
13_____white blood cell	m. carries blood to heart
14_____plasma	n. carries oxygen to cells
15_____red blood cell	o. protein in red blood cells that carry oxygen
16_____platelets	p. small blood vessels that branch off from arteries to deliver nutrients to every cell
17_____hemoglobin	q. carries blood away from heart

18____vena cava	r. chamber that pumps oxygenated blood to body
19____pulmonary artery	s. chamber that pumps deoxygenated blood to lungs
20____pulmonary vein	t. chamber that receives oxygenated blood from lungs
21____aorta	u. chamber that receives deoxygenated blood from body
22____right ventricle	v. vessel that carries deoxygenated blood from body to heart
23____right atrium	w. vessel that carries oxygenated blood from the lungs to the heart
24____left atrium	x. vessel that carries oxygenated blood to the body
25____left ventricle	y. vessel that carries deoxygenated blood to lungs