Biology Milestones Review

SB1. Obtain, evaluate, and communicate information to analyze the nature of the relationships between structures and functions in living cells.

SB1c. Construct arguments supported by evidence to relate the structure of macromolecules (carbohydrates, proteins, lipids, and nucleic acids) to their interactions in carrying out cellular processes.

1. **Complete the following table on organic molecules:**

Macromolecules	**Function**	**Monomer**
Carbohydrates		
Proteins		
Lipids		
Nucleic Acids		

2. **Describe the following nutrient tests: What is used to test for them?**

Nutrient	**What is used to test for it?**	**Positive Test**	**Example of…?**
Starch			
Lipids			
Monosaccharides			
Protein			

3. What is the <u>function</u> of enzymes in cells? (Or, what is a catalyst?)

4. Explain the importance of <u>shape</u> to enzyme function.

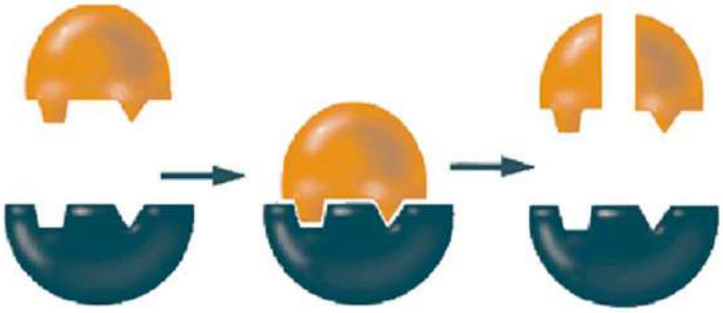
5. Explain what determines the shape of an enzyme.

6. Explain why enzymes are <u>specific</u>. (That is, one enzyme per type of reaction.)

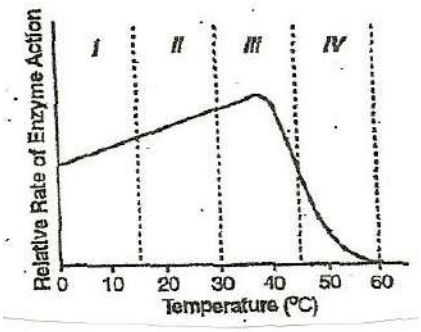
7. Explain why enzymes can be <u>reused over and over again</u>.

8. How do <u>extreme pH and temperature</u> extremes affect enzymes? (What is denature?)

9. Label the picture of the following enzymatic reaction: *Substrate, Product(s), Enzyme-substrate complex, Enzyme*

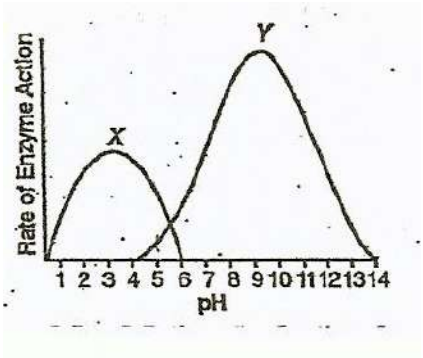


10. All (except for a few) enzymes end in what suffix?



11. At what temperature is the best for this enzyme to work?
How can you tell?

12. At which numeral (I, II, III, or IV) does this particular start to denature?
How can you tell?



13. Which enzyme (X or Y) would be used in acidic conditions?
How can you tell?

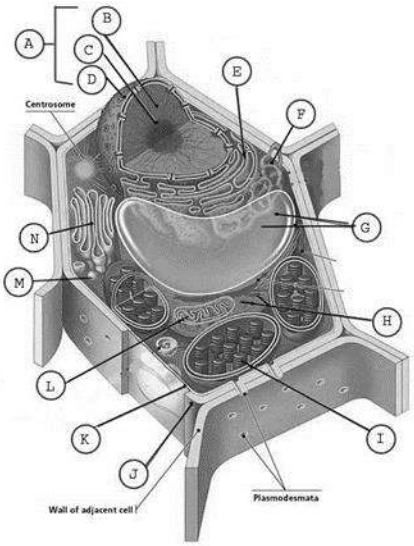
14. What pH is the best for activity for X? Y?
How can you tell?

SB1a. Construct an explanation of how cell structures and organelles (including nucleus, cytoplasm, cell membrane, cell wall, chloroplasts, lysosome, Golgi, endoplasmic reticulum, vacuoles, ribosomes, and mitochondria) interact as a system to maintain homeostasis.

15. **Fill in this chart. Also give the letter or number of the part as seen in the diagrams below.**

Cell Part and Letter	**Structure Description**	**Function**	**Letter/Number**
Nucleus			
Plasma Membrane			
Cell wall			
Mitochondria			

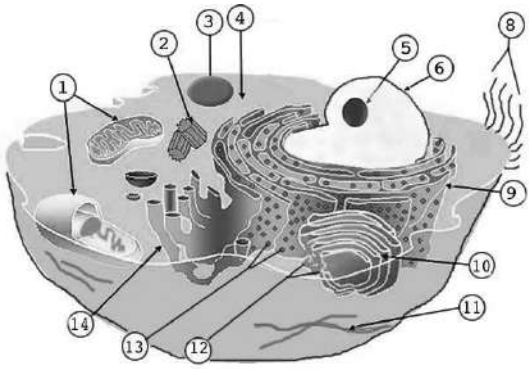
Vacuoles			
Chloroplasts			
Ribosomes			



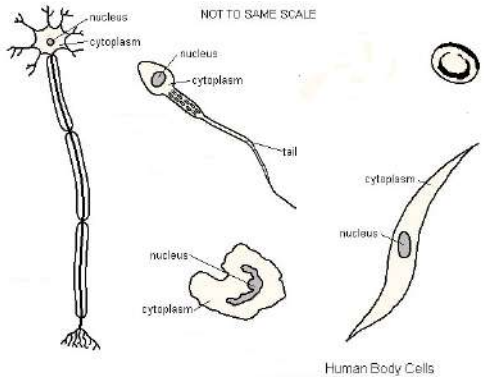
16.Which cell is the plant cell (left or right)?

17.Which structures are found **only** in the plant cell?

18.Which structures are found **only** in the animal cell?



Below are a variety of cells from the human body.



19. Which cell is adapted for movement? What structure makes this movement possible?

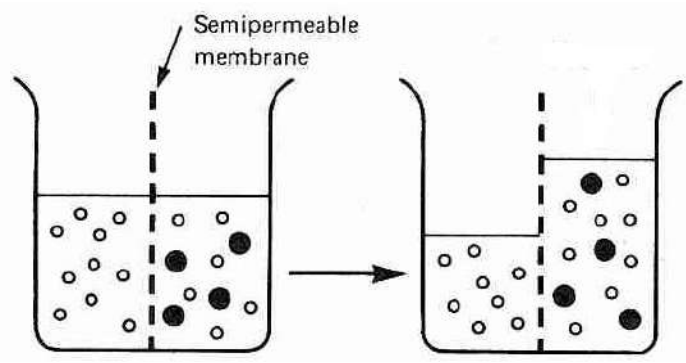
20. What organelle is very plentiful in these cells in order to provide the energy for movement?

21. What are the ways that living things get energy to live?

22. What are some of the ways that living things use energy?

23. What are some ways that cells maintain homeostasis?

SB1d. Plan and carry out investigations to determine the role of cellular transport (e.g., active, passive, and osmosis) in maintaining homeostasis.



24. Explain what has happened in the diagram to the left.

25. Why did the large dark molecules NOT move to the left?

26. How is the semipermeable membrane like a cell membrane?

27. If the dark molecule is starch, where is the starch concentration greatest (left or right)? _____

28. If the white molecule is water, where is the water concentration greatest at first? (left or right)_____

29. In osmosis, water moves from an area of _____ to an area of _____ concentration.

30. In diffusion, molecules move from an area of _____ to an area of _____ concentration.

31. Draw a cell and use arrows to show which way water will move in each of the following situations:
    a. Salt concentration inside the cell = 25% and outside the cell = 10%.

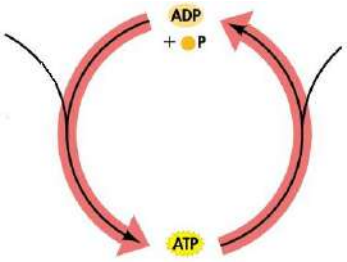
    b. Sugar concentration inside the cell = 17% and outside = 23%.

32. **Comparison of active and passive transport:**

	PASSIVE TRANPORT	**ACTIVE TRANSPORT**
Requires energy?		
Low to high concentration or high to low concentration?		
Examples		

SB1e. Ask questions to investigate and provide explanations about the roles of photosynthesis and respiration in the cycling of matter and flow of energy within the cell (e.g., single-celled alga).

Use the following diagram to show where energy is released and where energy is used. Also use arrows on the lines attached to the circles to indicate the direction of the energy.



33. How many phosphates? ATP? ADP?

34. What cellular process produces ATP?

35. What is ATP energy used for? Give examples.

36. **What are the reactants and products for each of these?**

Process	**Reactant**	**Product**	**Example?**
Photosynthesis			
Cellular Respiration (Aerobic)			
Cellular Respiration (Anaerobic)			

37. Which reaction makes the most ATP?

38. How do factors such as pH, temperature, light, and food availability affect these reactions?

39. Label the following molecules in these equations (*water, glucose, oxygen, carbon dioxide, ethyl alcohol)*

a. $6H_20 + 6CO_2 \rightarrow C_6H_{12}O_6 + O_2$

b. $C_6H_{12}O_6 + O_2 \rightarrow 6H_20 + 6CO_2$

c. $C_6H_{12}O_6 \rightarrow 2C_2H_3OH + 2CO_2$

40. Which of the above reactions is photosynthesis?
41. Which of the above reactions is fermentation (anaerobic cellular respiration)?
42. Which of the above reactions is cellular respiration (aerobic)?

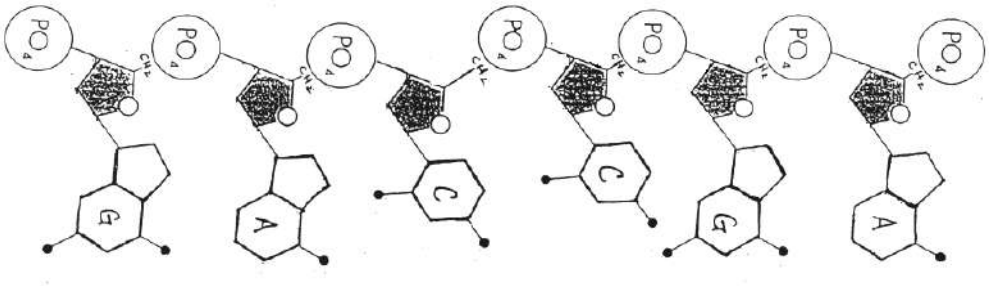
43. Which reaction(s) requires or stores energy?
44. Which reaction(s) release energy (ATP)?
45. Which reaction releases the most energy?
46. Which reaction requires chlorophyll?
47. Which reaction requires light?
48. Which organisms carry out process A?
49. Which organisms carry out process B?
50. Which organisms carry out process C?
51. Which process uses chloroplasts in eukaryotes?
52. Which process uses mitochondria in eukaryotes?
53. Compare and contrast: Alcoholic Fermentation and Lactic Acid Fermentation. (# ATP, where it occurs)

SB2. Obtain, evaluate, and communicate information to analyze how genetic information is expressed in cells.

SB2a. Construct an explanation of how the structures of DNA and RNA lead to the expression of information within the cell via the processes of replication, transcription, and translation.

54. Describe the structure of DNA below. What are the black pentagons? The nitrogen bases? What weak bonds hold the complementary bases together?

55. Write the complementary nucleotide sequence for the DNA molecule below.



56. If the strand of DNA above undergoes transcription, what will the sequence of the mRNA be?

57. After translation, what would the amino acid sequence be for this section of mRNA?

58. What is a codon?

2nd base in codon

1st base in codon	U	C	A	G	3rd base in codon
U	Phe	Ser	Tyr	Cys	U
	Phe	Ser	Tyr	Cys	C
	Leu	Ser	STOP	STOP	A
	Leu	Ser	STOP	Trp	G
C	Leu	Pro	His	Arg	U
	Leu	Pro	His	Arg	C
	Leu	Pro	Gln	Arg	A
	Leu	Pro	Gln	Arg	G
A	Ile	Thr	Asn	Ser	U
	Ile	Thr	Asn	Ser	C
	Ile	Thr	Lys	Arg	A
	Met	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

59. **Compare RNA and DNA in the following table.**

	RNA	DNA
Sugars		
Bases		
Strands		
Where In Cell		
Function		

60. What are the three types of RNA and what are their functions?
    a. *mRNA* –
    b. *tRNA* –
    c. *rRNA* –

61. Describe the process of DNA replication. What enzyme breaks apart the hydrogen bonds between bases?

    a. How many pieces of DNA are made?
    b. What does semi-conservative mean?

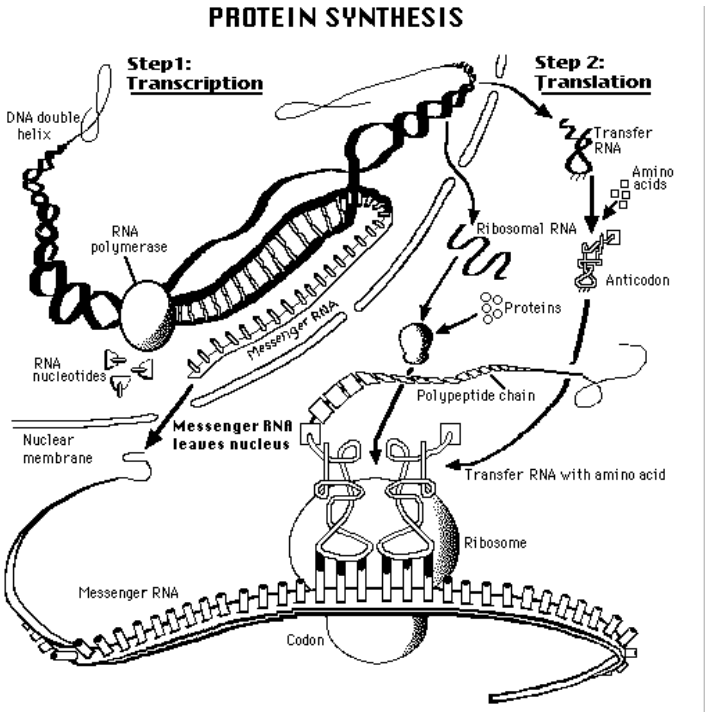
62. *Describe the process of protein synthesis*: What is transcription?

63. What is translation?

64. What happens to DNA when a mutation occurs?
    a. How does this affect the mRNA?

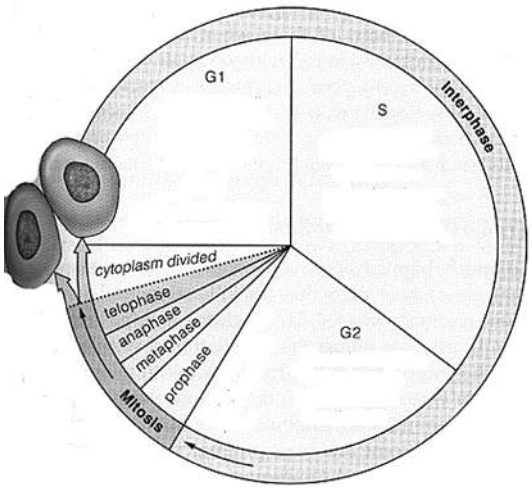
    b. How can this affect translation?

    c. How does this affect the structure and shape of the resulting protein?



SB1b. Develop and use models to explain the role of cellular reproduction (including binary fission, mitosis, and meiosis) in maintaining genetic continuity.

Look at the diagram of the cell cycle.



65. When does the replication of DNA occur?

66. What do GI and G2 represent?

67. What stage does the cell spend most of its life in?

68. What does the cell do during this time?

69. Does mitosis include cytokinesis (division of the cytoplasm)?

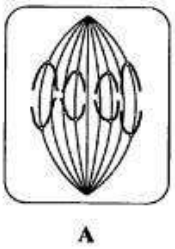
70. What is cancer? What are some causes of cancer?

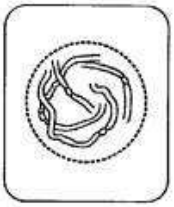
71. **Complete the following Chart of Mitosis and Meiosis.**

	MITOSIS	MEIOSIS
Type of reproduction (Asexual or sexual)		
Chromosome number of mother cell (1N=haploid or 2N=diploid)YE		
Chromosome number of daughter cells (1N=haploid or 2N=diploid)		
Number of cell divisions		

Number of cells produced		
When does replication happen?		
SOURCES OF VARIATION		
Crossing over		
Random assortment of chromosomes		
Gene mutations		
Nondisjunction		
Fertilization		

72. *Put the following stages of mitosis (cell division) in order. Then Name them.*


A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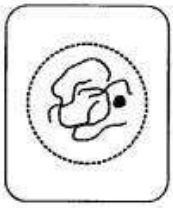
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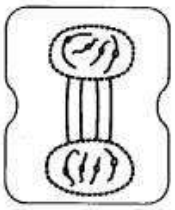
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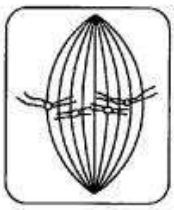

E

1st: called

2nd: called

3rd: called

4th: called

5th: called

73. How many chromosomes do humans have in their… Body cells? Sex cells?

74. What does Diploid mean?

75. What does Haploid mean?

76. When does crossing over occur during Meiosis?

77. What is the major focus of Meiosis I?

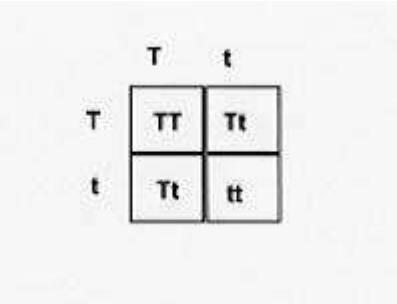
78. What is the major focus of Meiosis II?

SB3. Obtain, evaluate, and communicate information to analyze how biological traits are passed on to successive generations.

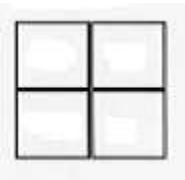
SB3a. Use Mendel's laws (segregation and independent assortment) to ask questions and define problems that explain the role of meiosis in reproductive variability.
SB3b. Use mathematical models to predict and explain patterns of inheritance.

79. What does it mean when a trait is dominant?

80. What does it mean when a trait is recessive?



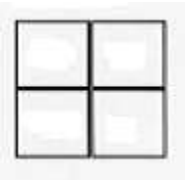
81. In the Punnett square to the left, *T = tall and t=short.* Give the parents genotypes.
82. Give the phenotype for the parents.
83. What are the genotypes and phenotypes of the offspring?
84. What is the genotypic ratio of the offspring?
85. What is the phenotypic ratio of the offspring?
86. What environmental factors might affect the expression of these genes for height? Explain.
87. What does it mean if a trait is codominant?



88. Some genes produce intermediate phenotypes. Cross a pure breeding red flower (RR) with a pure breeding white flower (WW). Give the genotypes and phenotypes of the offspring.
Genotype: *Phenotype:*

What type of inheritance is this?

89. If a woman with type A blood has a child with a man with type B blood and their first child has type O blood, give the genotypes of the woman and the man and do the cross. (Alleles are I^A, I^B, and i)



90. What are the odds that they will have a child with type O blood again?

91. What are the odds that they will have a child with homozygous type A blood?

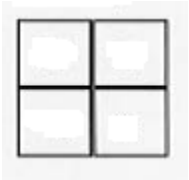
92. What are the odds that they will have a child with type AB blood?

93. A blood test is done to see if one of three men is the father of a child. The child has type O blood, the mother has type A blood. Man #1 has type AB blood, Man #2 has type A blood, Man #3 has type O blood. Are there any men that can be ruled out as the father? Why?

94. What does it mean to have multiple alleles?

95. What does polygenic traits mean? *Many genes (genotypes) control one particular phenotypic trait.*

96. Cross a female who is a carrier for hemophilia with a normal male.



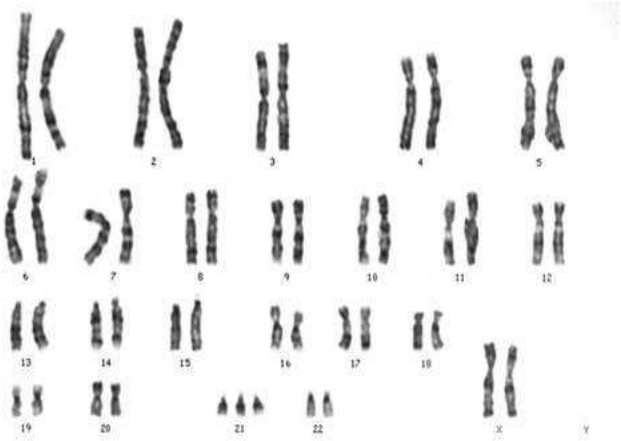
a. What are the odds that they will have a child with hemophilia? _____

b. What are the odds that they will have a daughter with hemophilia? _____

c. What are the odds that they will have a daughter who is a carrier for hemophilia? _____

d. Why are males more likely to show this type of disorder? (Who (mother/father) is likely to give them the bad gene?)

97. What is the gender of the person whose karyotype is shown to the right?



98. What is the disorder that this person has?

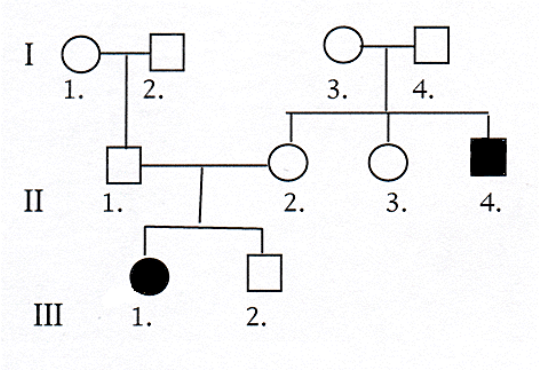
99. What is your evidence?

100. What is the inheritance pattern shown by this pedigree?

101. How do you know?

102. Using A,a, what is the genotype of person II4?

103. What is the genotype of person I3?



104. Explain each of Mendel's Laws and explain the experiments he used to determine these laws.
    a. Law of segregation

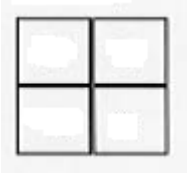
    b. Law of independent assortment

105. How does meiosis lead to segregation and independent assortment?

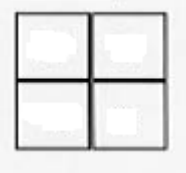
Solve the following genetics problem:

106. A brown mink crossed with a silver-blue mink produced all brown offspring. When these F_1 mink were crossed among themselves they produced 47 brown animals and 15 silver-blue animals (F_2 generation). Determine all the genotypes and phenotypes, and their relative ratios, in the F_1 and F_2 generations.

F1
Genotypes:
Phenotypes:

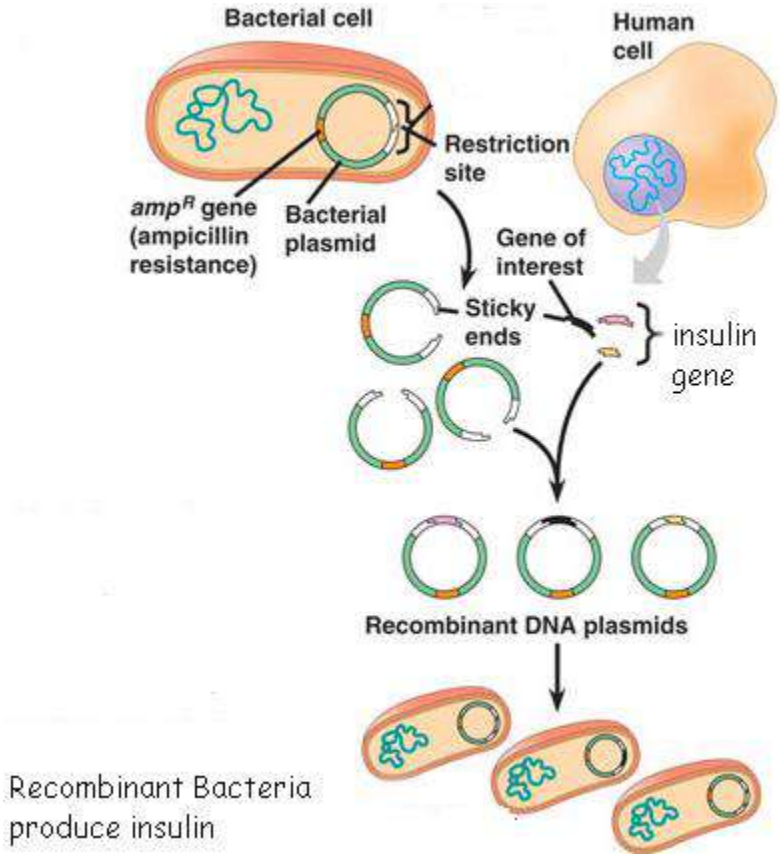


F2
Genotypes:
Phenotypes:



SB2c. Ask questions to gather and communicate information about the use and ethical considerations of biotechnology in forensics, medicine, and agriculture.

Transgenic organisms & Transformation



107. Describe the process that is shown in the diagram to the left.

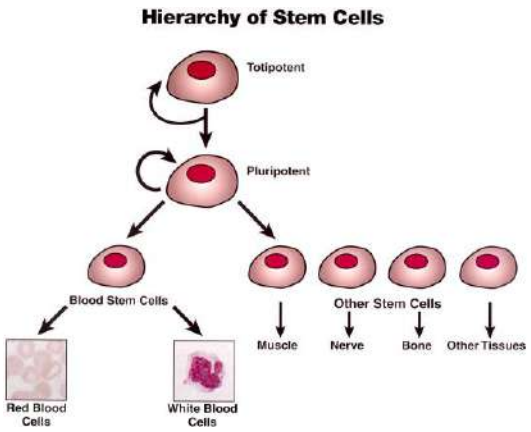
108. What is the value of this technology?

109. What are some other applications of this type of technology?

89. This process can be used to make GMO's – genetically modified organisms. What are some of the ethical issues surrounding this technology?

Stem Cells

90. The diagram to the right shows how stem cells can develop into many types of different cells. What are some of the potential benefits that could come from the growing of stem cells in a laboratory?



91. What are some of the ethical issues surrounding the collection and use of stem cells?

SB6. Obtain, evaluate, and communicate information to assess the theory of evolution.

SB6a. Construct an explanation of how new understandings of Earth's history, the emergence of new species from pre-existing species, and our understanding of genetics have influenced our understanding of biology.

SB6b. Analyze and interpret data to explain patterns in biodiversity that result from speciation.

SB6c. Construct an argument using valid and reliable sources to support the claim that evidence from comparative morphology (analogous vs. homologous structures), embryology, biochemistry (protein sequence) and genetics support the theory that all living organisms are related by way of common descent.

SB6d. Develop and use mathematical models to support explanations of how undirected genetic changes in natural selection and genetic drift have led to changes in populations of organisms.

110. In the following chart, describe the role of each of the following in developing the current theory of evolution.

	Discussion of importance to evolutionary theory
Understanding of geology (Changes in the earth)	
Malthus' ideas about population Growth	
Anatomical comparisons	
Patterns in fossil evidence	
Lamarck's ideas about inheritance Of acquired characteristics	
Biochemical comparisons (DNA and proteins)	
The role of variations	
The role of sexual reproduction	
The role of geographic isolation	
The importance of the environment	

111. What is a vestigial structure? Name a few in humans.

112. Discuss the steps in Darwin's theory of evolution by natural selection
    a. Populations of organisms have many genetic variations. Where do these come from?

    b. Organisms could reproduce exponentially but they don't. Why not? What are they restricted by?

    c. What are **adaptations**?

    d. Some adaptations have better survival value in certain environments. What does this mean?

    e. What does it mean to be "**fit**" to an environment?

    f. The next population will have a high frequency of the genes that have been selected for. Why will the frequency of selected genes increase?

    g. What is Darwin's theory of **Natural Selection**? What is **Artificial Selection**?

    h. When this process continues over millions of years, it can lead to speciation. What is **speciation**?

113. Compare and contrast **convergent** and **divergent evolution**

114. Sketch and describe the following: **Stabilizing Selection, Directional Selection and Disruptive Selection**.

115. What is **adaptive radiation**? How did the finches of the Galapagos adapt to their environment?

116. What is meant by coevolution?

117. Give an example of a flowering plant and a pollinator and then describe how coevolution works. (How does it ensure the survival of a species?)

118. Can reproductive isolation occur without geographic isolation? In other words, can 2 groups become reproductively isolated within the same geographic area? Describe an example of how this can happen.

119. Explain why reproductive isolation is critical to speciation.

120. Natural selection is one mechanism for evolutionary change. Mutation, genetic drift, and gene flow can also affect allele frequencies. Would smaller or larger populations be more likely to change due to mutation, genetic drift, and/or gene flow? Explain.

SB6e. Develop a model to explain the role natural selection plays in causing biological resistance (e.g., pesticides, antibiotic resistance, and influenza vaccines).

121. Describe how a population of bacteria can become resistant to an antibiotic (or an insect to a pesticide). How is this a direct way to observe evolution?

122. What happens when pesticides and antibiotics are used and how does it relate to evolution?

SB5. Obtain, evaluate, and communicate information to assess the interdependence of all organisms on one another and their environment.

SB5a. Plan and carry out investigations and analyze data to support explanations about factors affecting biodiversity and populations in ecosystems.

123. Give 3 examples of limiting factors for oak trees in a forest ecosystem.
_____

124. What is the major limiting factor in a desert community? _____ Is it a biotic or abiotic factor?
_____

125. Which type of growth curve (S or J) is characteristic of a population that is experiencing exponential growth?
_____

126. What is the major difference between logistic and exponential growth?

127. Define carrying capacity.

128. In the graph below, which organism is the prey? _____ Which is the predator?
_____

129. Which population increases (or falls) first and why?

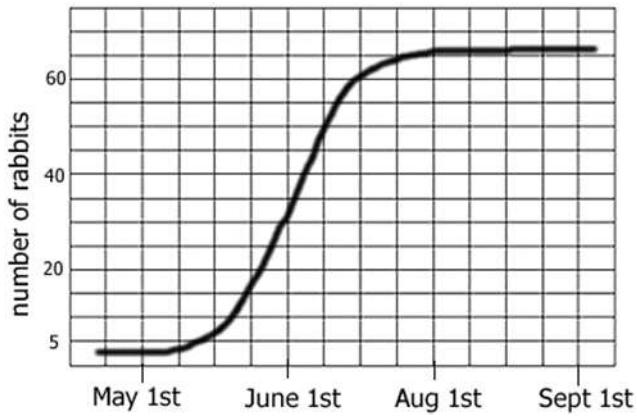
130. Which population increases (or falls) second and why?

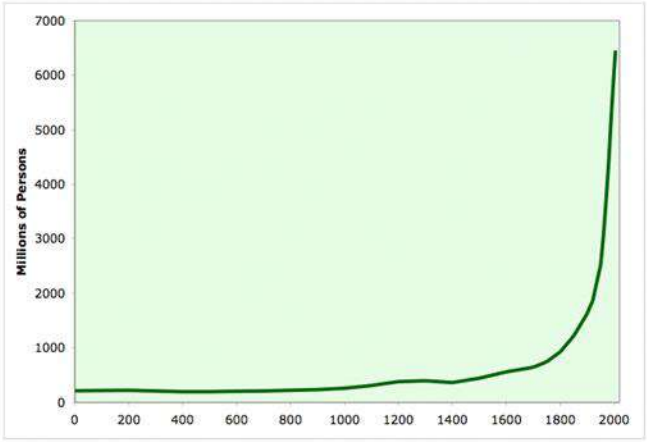
Graph 1: Rabbits Over Time

131. What kind of growth curve is shown by the graph to the right? _____

132. What is the carrying capacity for rabbits?
_____

133. During what month were rabbits in exponential growth?
_____





134. The graph to the left shows the growth of the human population from 1 A.D. to 2000 A.D. Describe what you see has happened.

135. Predict what will happen to population growth in the future and explain your reasoning.

136. What factors influence birth and death rates?

SB5b. Develop and use models to analyze the cycling of matter and flow of energy within ecosystems through the processes of photosynthesis and respiration.

- ***Arranging components of a food web according to energy flow.***
- ***Comparing the quantity of energy in the steps of an energy pyramid.***
- ***Explaining the need for cycling of major biochemical elements (C, O, N, P, and H).***

137. What word is synonymous with the word, "autotroph"? _____ What word is synonymous with "heterotroph"?_____

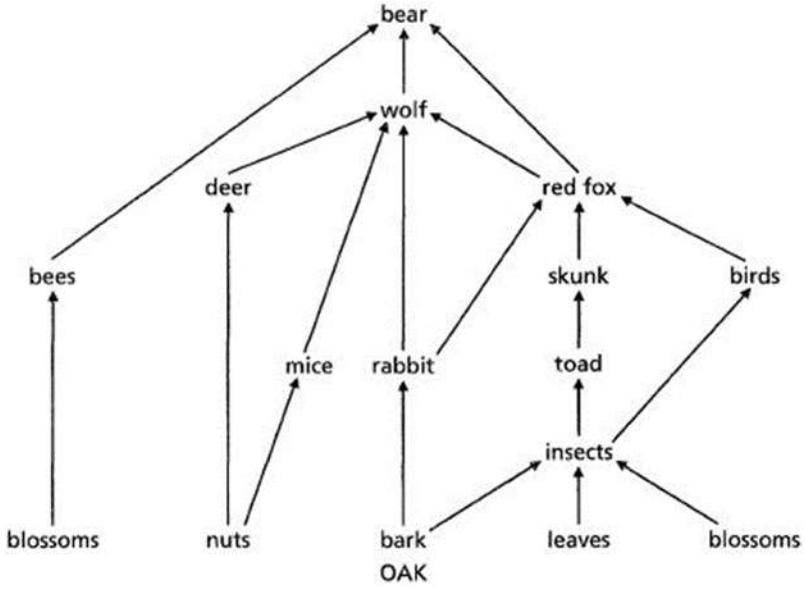
138. What are the <u>producers</u> in this food web?

139. What are the <u>primary consumers</u> (herbivores) in this food web?

140. What are the <u>secondary consumers</u> in this food web?

141. What are the <u>highest level consumers</u> in this food web?

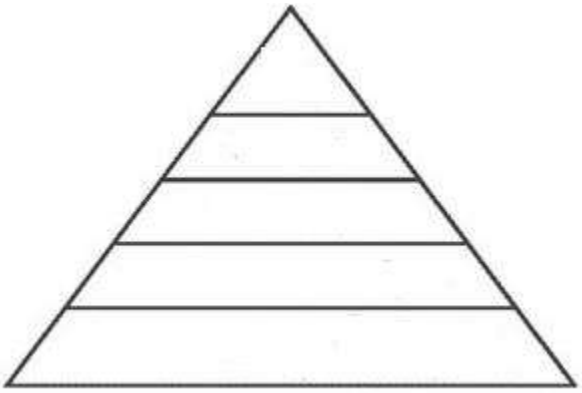
142. How does <u>energy</u> move through a food web?



143. How does <u>matter</u> move through a food web?

144. What is a <u>food chain</u>?

145. Create an energy pyramid from the food chain: Leaves→insects→birds→red fox→bear



146. Where is the most energy in this pyramid?

147. Where is the least energy in this pyramid?

148. What happens to energy as it moves through the food chain/web?

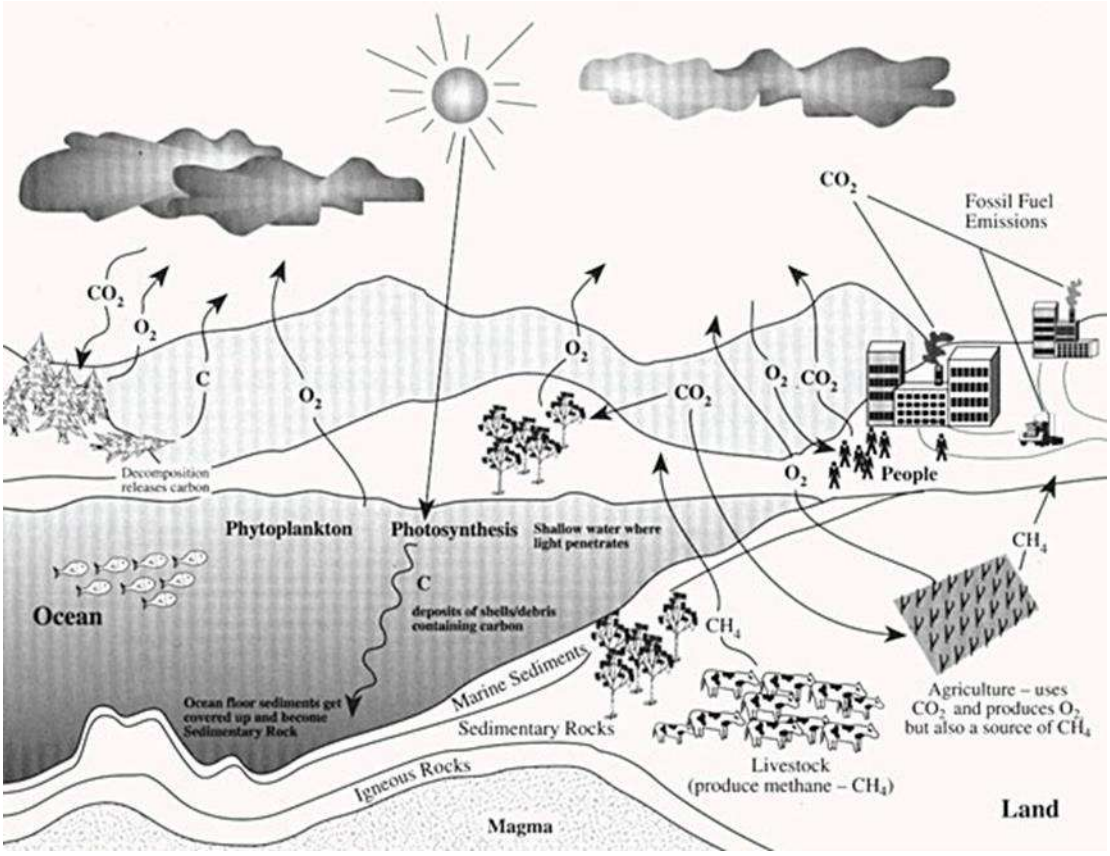
149. Assume there are 10,000 kcal of energy in the leaves. Estimate the amount of energy in each of the other levels of the energy pyramid.

150. What percent of energy is lost? _____%

151. How much is passed on? _____%

152. What is the ultimate source of energy for this food web?

153. What are the other two types of pyramids? Explain.



154. Which process(es) put carbon dioxide into the atmosphere? _

155. Which process(es) take carbon dioxide out of the atmosphere?

156. Explain the Greenhouse Effect in relationship to carbon dioxide in the atmosphere.

157. What effect might increased atmospheric carbon dioxide have on the environment?

158. How does photosynthesis and cell respiration relate to Carbon cycle?

SB5c. Construct an argument to predict the impact of environmental change on the stability of an ecosystem
SB5e. Construct explanations that predict an organism's ability to survive within changing environmental limits (e.g., temperature, pH, drought, fire).

159. What is Primary Succession?

160. What is Secondary Succession?

161. What is a Climax Community?

162. What is a pioneer species? How are they important?

163. Explain the effect each of the following may have on the environment.

Factor	**Effect on Environment**
Population Size	
Population Density	
Resource Use	
Acid Rain	
Habitat Destruction	
Introduced non-native species	
Pesticide use	
Deforestation	

164. How do *organisms, species, populations, communities, ecosystems and biomes* relate to each other?

165. What is an organism's *habitat*? What is its *niche*?

166. In the following chart, explain the symbiotic relationships.

Relationship	Definition	Example
Mutualism		
Commensalism		
Parasitism		

167. Name the terrestrial biome that is described.

a. The _____ biome is found north of the Arctic Circle, is nearly treeless, contains permafrost, and animals such as the arctic hare.
b. The _____ biome is found in a wide band south of the tundra. Its primary vegetation is coniferous trees and includes animals such as black bears and timber wolves.
c. The _____ are found in abundance in the Earth's equatorial zone. It is warm and rainy year-round and includes animals such as monkeys and parrots.
d. _____ are found in abundance throughout Europe and the eastern United States, between the taiga and the tropical biomes. The primary vegetation is deciduous trees and animals include white-tailed deer and squirrels.
e. _____ biomes occur largely in parts of Africa, and the southwestern United States and in parts of Australia, South America, and Asia. Vegetation includes small plants and cacti and animals include many reptiles.
f. _____ covers most of South America, Africa, and Australia. Temperate grasslands can be found in central United States, western Canada and across southern Asia. Animals include grazers such as antelope and predators such as lions.

168. What is a tropism?

169. Name the tropism that is described:

a. Response to the force of gravity.
b. Response to light.
c. Response to touch.

SB5d. Design a solution to reduce the impact of a human activity on the environment.

170. Global warming is caused by an increase of greenhouse gases such as carbon dioxide in the atmosphere. What is the major cause of the increase in atmospheric carbon dioxide?

_____

171. The use of DDT, a pesticide, was banned in the US because it was linked to declines in the populations of predatory birds such as eagles and falcons. The concentration of DDT as it moved up the food chain from 1st order consumers to top-level predators is an example of _____.

172. The ozone layer (O_3) high in the earth's atmosphere absorbs UV radiation in sunlight. UV radiation is mutagenic. What effect could ozone depletion have on human health?

173. What types of chemicals (common in aerosols and refrigerants) cause ozone depletion?

174. What are the effects of *bioaccumulation (biomagnifications)* of pesticides on a food web?

175. What are some examples of sustainable practices that can protect the environment?

176. How did the rise of human agriculture create a significant impact on the Earth? What kind of technology was used to feed the growing human population?

SB4. Obtain, evaluate, and communicate information to illustrate the organization of interacting systems within single-celled and multi-celled organisms.

SB4a. Construct an argument supported by scientific information to explain patterns in structures and function among clades of organisms, including the origin of eukaryotes by endosymbiosis.
Clades should include:

- archaea
- bacteria
- eukaryotes
- fungi
- plants
- animals

177. Fill in the following chart with the characteristics of the various kingdoms.

	Bacteria	**Archaea**	**Protista**	**Fungi**	**Plantae**	**Animalia**
Eukaryotic or prokaryotic						
Multicellular or single-celled						
Sexual or asexual reproduction						

Autotrophic or heterotrophic						
Aerobic or anaerobic						
Cell walls or no cell walls						

SB4b. Analyze and interpret data to develop models (i.e., cladograms and phylogenetic trees) based on patterns of common ancestry and the theory of evolution to determine relationships among major groups of organisms.

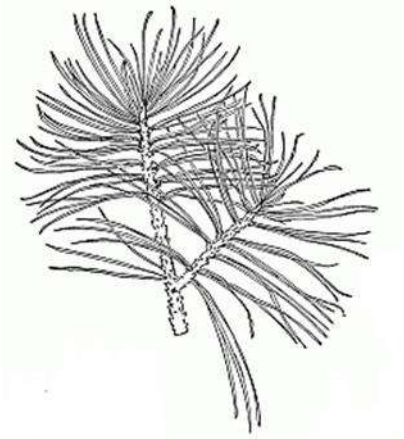
178. Why is the current classification system continually undergoing change?

179. What are the three domains proposed above the kingdom level?

180. What is the current seven-level classification system?

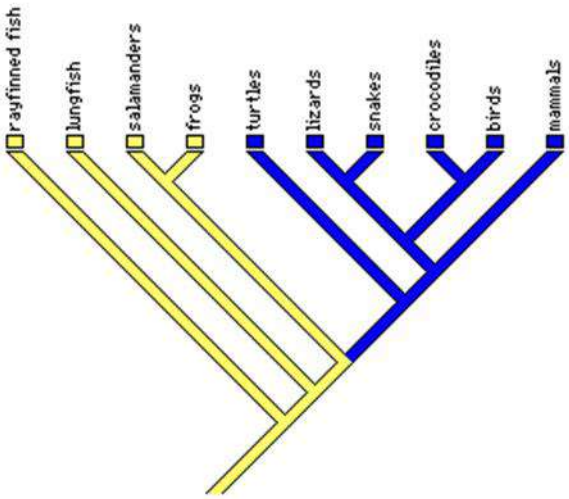
181. How do you write a "scientific name?"

182. Use the following key to identify the tree branch to the left.



1. a. leaf is needle-like….go to 2
   b. leaf is broad…… go to 5
2. a. needles are short ....go to 3
   b. needles are long…...go to 4
3. a. underside of needles green…hemlock
   b. underside of needles silver ..balsam
4. a. 3 needles in bundle….pitch pine
   b. 5 needles in bundle….white pine
5. a. edge of leaf round…go to 6
   b. edge of leaf serrated…go to 7
6. a. minty odor…… wintergreen
   b. no minty odor…..laurel

What am I?



183. To the left is a phylogenetic tree of some organisms. According to this tree, which pairs of organisms are most closely related?
_____ and _____

184. Which organism is most closely related to the ray-finned fish?

_____

185. Which organisms are the mammals most closely related to?

_____

SB4c. Construct an argument supported by empirical evidence to compare and contrast the characteristics of viruses and organisms.

186. Describe the basic structure of a virus. What is it made of?

187. Describe the differences between the lytic and lysogenic cycles of viruses.

188. Explain why viruses are considered nonliving.

189. Name 3 ways in which bacteria are useful to humans.

Famous Scientists you Should Know. Match the scientist with his or her accomplishment. (FLASHCARDS ONLINE!)

190. Gregor Mendel
191. Robert Hooke
192. James Watson & Francis Crick
193. Theodore Schwaan
194. Matthias Schleiden
195. Charles Darwin
196. Anton van Leeuwenhoek
197. Francesco Redi
198. Louis Pasteur
199. Stanley Miller & Harold Urey
200. Carolus Linnaeus
201. Jean Baptiste Lamarck
202. Rudolf Virchow
203. Alfred Russell Wallace

A. I am one of the first to see the cell structure for cell division.
B. I invented the first simple light microscopes in the 1700s.
C. I am the father of genetics by from my work with pea plants
D. I am the scientists who erroneously came up with the idea that traits are acquired from animals from their use or disuse.
E. I disproved the idea of spontaneous generation by using covered and uncovered jars of rotting meat.
F. I was first to look at plant cells underneath the microscope.
G. I was first to look at animal cells underneath the microscope.
H. Together we determined the double helix shape of DNA.
M. I developed the theory of natural selection and I am known as the father of evolution.
P. I created the system of binomial nomenclature using Latin.
Q. I worked with Darwin on my own studies of populations.
R. I supported the idea of biogenesis by my curved flask experiment. My name is a process to keep milk fresh.
S. We found that methane, ammonia, hydrogen gases from early earth charged with electricity can form amino acids.
T. I coined the term “cells” by looking at cork in the microscope.