

# Evolution Expectation Sheet Review Questions

## Natural Selection:

1. Can individuals evolve? \_\_\_\_\_ What is genetic variation? \_\_\_\_\_
2. Why does natural selection need inherited genetic variation to occur?  
\_\_\_\_\_

## Evolutionary Evidence:

	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101
Human	THR	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU
Chimpanzee	THR	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU
Gonila	THR	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU
Rhesus monkey	GLN	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU
Horse	ALA	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU
Kangaroo	LYS	LEU	SER	GLU	LEU	HIS	CYS	ASP	LYS	LEU	HIS	VAL	ASP	PRO	GLU

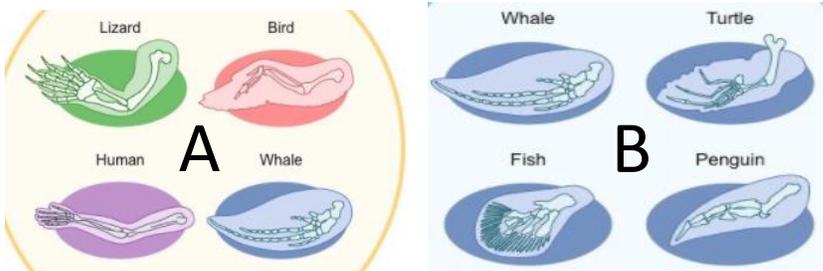
  

	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116
Human	ASN	PHE	ARG	LEU	LEU	GLY	ASN	VAL	LEU	VAL	CYS	VAL	LEU	ALA	HIS
Chimpanzee	ASN	PHE	ARG	LEU	LEU	GLY	ASN	VAL	LEU	VAL	CYS	VAL	LEU	ALA	HIS
Gonila	ASN	PHE	LYS	LEU	LEU	GLY	ASN	VAL	LEU	VAL	CYS	VAL	LEU	ALA	HIS
Rhesus monkey	ASN	PHE	LYS	LEU	LEU	GLY	ASN	VAL	LEU	VAL	CYS	VAL	LEU	ALA	HIS
Horse	ASN	PHE	ARG	LEU	LEU	GLY	ASN	VAL	LEU	ALA	LEU	VAL	VAL	ALA	ARG
Kangaroo	ASN	PHE	LYS	LEU	LEU	GLY	ASN	ILE	ILE	VAL	ILE	VAL	CYS	LEU	ALA

1. How many amino acid differences in gorillas compared to humans? \_\_\_\_\_
2. How many amino acid differences in chimpanzees compared to humans? \_\_\_\_\_
3. According to this figure which species is closer related to humans, Chimps or Gorillas? \_\_\_\_\_
4. Genome Mapping helps scientist compare \_\_\_\_\_

	A. <i>bilificus</i>	G. <i>spontificus</i>	Q. <i>rondificus</i>	U. <i>rusticus</i>	N. <i>randomis</i>
A. <i>bilificus</i>					
G. <i>spontificus</i>	53				
Q. <i>rondificus</i>	34	56			
U. <i>rusticus</i>	46	17	11		
N. <i>randomis</i>	34	23	42	5	

5. Study the table to the left. Which 2 organisms are the most closely related? \_\_\_\_\_  
\_\_\_\_\_
6. How do you know? \_\_\_\_\_



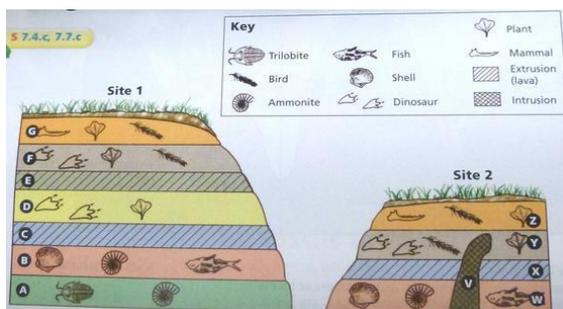
7. Figure A: The structures are considered (Circle One)

**HOMOLOGOUS / ANALOGOUS**

8. Figure B: The structures are considered (circle one)

**HOMOLOGOUS / ANALOGOUS**

9. Which body parts have the same function but different structures? \_\_\_\_\_
10. Which parts have the same structure but different functions? \_\_\_\_\_
11. Which of the above show common ancestry? \_\_\_\_\_



12. Where are the oldest fossils found? \_\_\_\_\_
13. Do fossils contain DNA? \_\_\_\_\_
14. What is fossil "stasis"? \_\_\_\_\_

15. What does the study of embryology and the similarity of vertebrate embryos tell us about them?

\_\_\_\_\_

**Genetic Variation:**

1. Which mechanism, genetic drift or gene flow, increases genetic diversity? \_\_\_\_\_
2. Which mechanism, genetic drift or gene flow, decreases population size? \_\_\_\_\_
3. Which mechanism, genetic drift or gene flow, involves two populations? \_\_\_\_\_
4. Which mechanism - genetic drift, gene flow or both - is random? \_\_\_\_\_

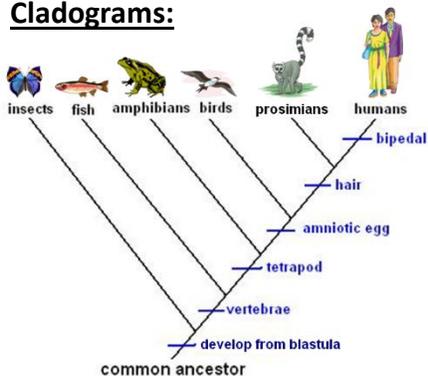
**Reproductive Success:**

1. What reproductive strategy do mammals share? \_\_\_\_\_
2. What reproductive strategy do marsupials share? \_\_\_\_\_
3. Why is delayed implantation beneficial? \_\_\_\_\_
4. What is reproductive isolation? \_\_\_\_\_
5. How does mimicry protect organisms? \_\_\_\_\_

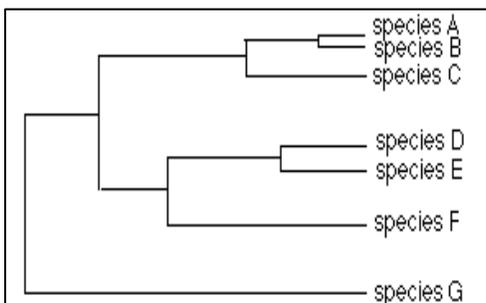
**Biogeography:**

1. What is speciation? \_\_\_\_\_
2. How does biogeography lead to speciation? \_\_\_\_\_

**Cladograms:**



1. Which organisms have amniotic eggs? \_\_\_\_\_
2. If a frog was discovered that laid amniotic eggs, would this cladogram be valid (correct)? \_\_\_\_\_
3. What derived characteristics do amphibians and birds have in common? \_\_\_\_\_



4. In the dendrogram, is species D more closely related to species F or species C? \_\_\_\_\_
5. Which species is G most closely related to? \_\_\_\_\_