Name:

## **Evolution Review**

\*\*\* Please ensure to complete you visual dictionary\*\*\*

\*\*\*\*As this was a LARGE unit, ensure you check over the unit outline to make sure you cover all sections that will be on the test\*\*\*\*

Learning outcome

B1: Describe the influences that Lamarck, Lyell, Malthus, & Darwin brought to the development of the theory of evolution.

1. How do Darwin's and Lamarck's ideas of evolution compare?



- 2. How did Lyell and Malthus contribute to Darwin's theory of evolution?
- 3. What were Darwin's 4 key ideas in his theory of Evolution?
  - a. Note key information about each idea

4. What does descent with modification mean?

5. What provides evidence for evolution?

- B2. I can describe the basic structure of DNA
  - 1. What is the structure and function of DNA
    - a. Include sugar, phosphate, nitrogenous bases, complementary base paring and indicate a nucleotide.

2. How and why does DNA replicate? Include all enzymes involved (a diagram may help)

- B3. I can explain the role of DNA in Evolution
  - 1. What is a gene? A genome?
  - 2. What is an allele?
  - 3. What is the difference between phenotype and genotype? Give an example
  - 4. Compare haploid and diploid cells
  - 5. What are two sources of genetic variation?
  - 6. What is a gene pool?
  - 7. What is relative frequency? How can we use this to define evolution?
  - 8. Who was Gregor Mendel?
  - 9. Using a Punnett square, explain how probability and genetics are related. Include terms like heterozygous and homozygous.

- 10. What is incomplete dominance?
- 11. What is codominance
- 12. What is the difference between dominant and recessive genes?
- 13. Are an organisms genes the only influence in how an organism will develop?
- 14. Why is the study of genetics so important to how organisms evolve?

B4: I can describe the five agents of evolutionary change

- 1. What is Natural Selection?
- 2. What does it mean to be a "fit" individual in a population?
- 3. Does natural selection act upon the individual? Explain
- 4. What is the difference between Directional, Disruptive and Stabilizing selection? What results from each?

- 5. What is Sexual Selection?
- 6. Choose either the "Peppered Moth" or "Weirderoos" activity and explain how they demonstrated Natural Selection in action.

- 7. Why does Non-random mating lead to evolutionary change?
- 8. How can mutation lead to evolutionary change?
- 9. How does genetic drift occur? Why only in small populations? How does this lead to evolution?

- 10. How does gene flow lead to evolution?
- B5. Speciation: how new species evolve
  - 1. What is speciation?

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- 2. What is a niche? What happens when two species occupy the same niche?
- 3. How does speciation occur? Name three types of isolation.

4. Explain how Darwin's finches are an example of speciation.

- 5. What are the three main steps of speciation?
- 6. What is Adaptive Radiation?
- 7. What is Divergent Evolution? Proof?

8. What is Convergent Evolution? Proof?

- B6. I can compare the gradual change model with the punctuated equilibrium model of evolution.
  - 1. Compare and contrast the Gradual and Punctuated Equilibrium models. (Diagram may help)

2. Why do species go extinct?

3. How can mass extinctions cause bursts of evolution?