Anoka-Hennepin Secondary Curriculum Unit Plan

Department:	Science	Course:	Science 7 (Life Science)	Unit 5 Title:	Evolution	Grade Level(s):	7th Grade
Assessed Trimester:	Trimester 2	Pacing:	10-15 Days	Date Created:		Last Revision Date:	6.24.14

Course Understandings: *Students will understand that:*

- Patterns can be discerned in our natural world and can be used to make predictions.
- Evidence gathered from the past is used to explain the origination of an event, phenomenon, species, system, and to help predict the future.

DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

Established Goals

- **Standard:** Evolution in Living Systems
  Individual organisms with certain traits in particular environments are more likely than others to survive and have offspring.
  Benchmark:
  7.4.3.2.1: Explain how the fossil record documents the appearance, diversification and extinction of many life forms.
  7.4.3.2.2: Use internal and external anatomical structures to compare and infer relationships between living organisms as well as those in the fossil record.
  7.4.3.2.3: Recognize that variation exists in every population and describe how a variation can help or hinder an organism's ability to survive.

- **Standard:** Evolution in Living Systems
  Individual organisms with certain traits in particular environments are more likely than others to survive and have offspring.
  Benchmark:
  7.4.3.2.4: Recognize that extinction is a common event and it can occur when the environment changes and an population's ability to adapt is insufficient to allow its survival.

- **Standard:** Human Interactions with Living Systems
  Human activity can change living organisms and ecosystems.
  Benchmark:
  7.4.4.1.1: Describe examples where selective breeding has resulted in new varieties of cultivated plants and particular traits in domesticated animals.

- **Standard:** Science Literacy
  Reading Benchmark:
  Key ideas and details
  6.13.1.1: Cite specific textual evidence to support analysis of science and technical texts.
  6.13.2.2: Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions
  Craft and structure
  6.13.4.4: Determine the meaning of symbols, equations, graphical representations, tabular representations, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6–8 texts and topics*.
  6.13.5.5: Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
  Integration of knowledge and ideas
  6.13.9.9: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
  Range of reading and level of text complexity
  6.13.10.10: By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.
  Writing Benchmark:
  Text types and purposes

6.14.1.1: Write arguments focused on *discipline-specific content*.

a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
b. Support claim(s) with logical reasoning and relevant, accurate data and credible evidence that demonstrate an understanding of the topic or text, using credible sources.
c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
d. Establish and maintain a formal style.

Provide a concluding statement or section that follows from and supports the argument presented.

Transfer

Students will be able to independently use their learning to: (product, high order reasoning)

- To understand the language of science allows us to communicate effectively and efficiently. 7.4.3.2.1
- To understand the common use of the word theory vs. the scientific use of the word theory.
- To understand that extinction continues to occur. 7.4.3.2.1
- To understand natural selection is the driving force or the how of how evolution occurs and continues to occur. 7.4.3.2.3
- To understanding that information collected from the past can be used to make predictions about the future. 7.4.3.2.1

Meaning

Unit Understanding(s):	Essential Question(s):
Students will understand that: ● The scientific theory of evolution describes how living things change over time. 7.4.3.2.1 ● Extinction plays a role in the geologic time scale. 7.4.3.2.1 ● Scientific evidence can be used to infer common ancestry among organisms. 7.4.3.2.2 ● Natural selection leads to diversity of species through adaptations. 7.4.3.2.3	**Students will keep considering:** ● What did life on Earth look like at earlier times? ● Why have some animals become extinct? ● What does the fossil record reveal to a scientist? ● How will organisms look and function in the future? How do we know?

Acquisition

Knowledge - Students will:	Reasoning - Students will:
● Know that organisms become more diverse over time. 7.4.3.2.1 ● Understand that the fossil record documents events in chronological time. 7.4.3.2.1 ● Identify similarities in anatomical structures (internal and external). 7.4.3.2.2 ● Identify fossil evidence. 7.4.3.2.1 ● Identify biological evidence. 7.4.3.2.2 ● Identify genetic evidence. 7.4.3.2.3 ● Identify common ancestor. 7.4.3.2.2 ● Describe examples where selective breeding has resulted in new varieties of cultivated plants and particular traits in domesticated animals. 7.4.4.1.1	● Compare, contrast and infer relationships between living organisms and those in the fossil record using anatomical structures. 7.4.3.2.2 ● Evaluate how variation can help or hinder an organism's ability to survive. 7.4.3.2.3 ● Use fossil evidence to prove that extinction is a common event. 7.4.3.2.4 ● Evaluate an organism's ability to adapt and therefore survive. 7.4.3.2.4 **Skills - Students will:** ● Interpret a cladogram. 7.4.3.2.2

Common Misunderstandings	Essential new vocabulary
● Students believe acquired characteristics can be inherited. ● Students believe evolutionary changes are driven by need. ● Students believe the theory of evolution is a belief. ● Extinctions are rare and humans have caused the majority of them. ● Most species that lived in the past are alive today.	● Fossil ● Extinction ● Fossil Evidence ● Biological Evidence ● Genetic Evidence ● Evolution ● Common Ancestor ● Variation ● Population ● Natural Selection ● Adaptation ● Cladogram ● Theory ● Genetic Diversity ● Selective Breeding ● Anatomical Structures ● Species