Subject: Science Grade: 7 Unit #: 4 Title: Evolution

UNIT OVERVIEW

<table>
<tr><th colspan="3">STAGE ONE: Identify Desired Results</th></tr>
<tr><td rowspan="6">Established Goals/ Standards

3.1a The processes of sexual reproduction and mutation have given rise to a variety of traits within a species.
3.1b Changes in environmental conditions can affect the survival of individual organisms with a particular trait. Small differences between parents and offspring can accumulate in successive generations so that descendants are very different from their ancestors. Individual organisms with certain traits are more likely to survive and have offspring than individuals without those traits.
3.2a In all environments, organisms with similar needs may compete with one another for resources.
3.2b Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to permit its survival. Extinction of species is common. Fossils are evidence that a great variety of species existed in the past.
3.2c Many thousands of layers of sedimentary</td><td colspan="2">Long-Term Transfer Goal</td></tr>
<tr><td colspan="2">At the end of this unit, students will use what they have learned to independently…

Students will understand why organisms with certain traits are more likely to survive in a given environment demonstrated by creating a map outlining the migration and evolution of humans in conjunction with the “Out of Africa” theory.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Enduring Understandings
Students will understand that…

Environmental changes can cause evolution/extinction.

Organisms with the “most fit” trait will be more likely to survive in a given environment.</td><td>Essential Questions
Students will consider such questions as…

How do differences drive change?

Race: Are we really so different?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>What knowledge will students learn as part of this unit?
● Identify and correctly use key terms- ancestor, species, evolve, variation, mutation, extinction, adaptation, natural selection
● The idea of race stems from human beings adapting to different environments.
● Adaptation occurred through the process of natural selection and genetic variation.
● Competition and genetic variation lead to adaptation.
● Genes and traits are passed on from one generation to the next by sexual reproduction.
● Changes in environmental conditions can affect the survival of individual organisms with a particular trait.</td><td>What skills will students learn as part of this unit?
● Make observations about human variation and from these observations generate questions leading to an investigation of the origin of these variations.
● Read non-fictional text for information while employing reading strategies.
● Explain the biological origin of the idea of race and generate an annotated Human migration map representing this idea.</td></tr>
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rock provide evidence for the long history of Earth and for the long history of changing life forms whose remains are found in the rocks. Recently deposited rock layers are more likely to contain fossils resembling existing species.		

STAGE TWO: Determine Acceptable Evidence	
	Assessment Evidence
Criteria to assess understanding: *(This is used to build the scoring tool.)* ● Students will be able to explain how environmental change can cause evolution and how organisms with the "most fit" trait will be more likely to survive in a given environment through a rubric driven map project in which they outline the migration and evolution of humans. ● Sexual reproduction and mutations result in variation in offspring ● Organisms compete for resources ● Changes in the	Performance Task focused on Transfer: Create a map outlining the migration and evolution of humans in conjunction with the "Out of Africa Theory". This map will be assessed using a pre-determined rubric.
	Other Assessment Evidence: Summary responses: claim with evidence (5 week assessment rubric)

environment can cause a species to become extinct ● Fossils are used as evidence for species that have existed in the past	

T, M, A *(Code for Transfer, Meaning Making and Acquisition)*	**STAGE THREE: Plan Learning Experiences**	
A, M A, M M M, T M T T	Learning Events: <u>Lesson 1</u>: Variation reading and link to a variety of traits within a species. Model of evolution activity (beaks/claws) *Introduce new essential question, "How do differences drive change?" <u>Lesson 2</u>: Short activity, natural selection readings (evidence based claim), video (revise claims). Come back together and solidify what natural selection is, summary response with diagram *post exemplar on project board <u>Lesson 3</u>: Evolution by natural selection with 4 pieces of evidence stations <u>Lesson 4</u>: Woolly Mammoth extinction with chalk talk <u>Lesson 5</u>: Review poster activity with rubric in which they pick an example, describe it and draw it *Post exemplar on project board <u>Lesson 6</u>: Test <u>Remaining lessons</u>: Performance task (potential race guided project with human evolution)	Evidence of learning: *(formative assessment)* Bellwork/Bridge Ticket out the door Graphic organizers Stop and think questions Reflect questions Assessment rubrics Whole group/small group discussions Summary Closure