OpenSciEd Massachusetts Standards Guidance
8th Grade: Natural Selection & Common Ancestry

This document is to provide guidance to Massachusetts 8th grade teachers who are implementing OpenSciEd. This guidance assumes the OpenSciEd curriculum is being implemented across grades 6-8, following the MA coherent sequence by grade level *(download)*. The following guidance identifies the MA standards addressed in the *Natural Selection and Common Ancestry* unit, and the most effective use of the OpenSciEd materials for 8th grade teachers.

Scope and Sequence Recommendation

It is recommended to **implement the *Natural Selection & Common Ancestry* OpenSciEd unit in 8th grade after the *Genetics* and before the *Weather, Climate & Water Cycling* unit**. This unit leverages ideas developed in *Genetics* about mutations, sexual reproduction, and inheritance. Additional guidance on how to abbreviate and extend is included below. Refer to the MA coherent sequence by grade level *(download)* for the complete scope and sequence recommendation.

8th Grade Standards in *Natural Selection & Common Ancestry*

Standards in unit	Lessons building towards standards
8.MS-LS4-4. Use a model to describe the process of natural selection, in which genetic variations of some traits in a population increase some individuals' likelihood of surviving and reproducing in a changing environment. Provide evidence that natural selection occurs over many generations.	Lessons 7-13

Recommendations for Addressing Standards in *Natural Selection & Common Ancestry*

Include, and teach all included 6th and 7th grade standards with *Natural Selection & Common Ancestry* as planned in the unit. Students use a phenomenon from the fossil record to drive their questions about animal survival and natural selection, and explore animal behaviors along with traits that increase the likelihood of survival. **Excluding these standards would require substantial redesign of the unit, which is not recommended.**

Additional Standards in *Natural Selection & Common Ancestry*

Standards in unit	Lessons building towards standards
6.MS-LS4-1 Analyze and interpret evidence from the fossil record to describe organisms and their environment, extinctions, and changes to life forms throughout the history of Earth.	Lessons 3, 5-6, and 12-14
6.MS-LS4-2. Construct an argument using anatomical structures to support evolutionary relationships among and between fossil organisms and modern organisms.	Lessons 5-6, 8, and 14

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7.MS-LS1-4 **[Partial].** Construct an explanation based on evidence for how characteristic animal behaviors and specialized plant structures increase the probability of successful reproduction of animals and plants. • **Why partial?** *Natural Selection & Common Ancestry* does not address plants, plant structures, or plant reproduction. • The *Genetics* unit introduces ideas about plants and plant structures in detail. No changes or extensions are recommended for this unit to address the standard.	Lessons 2, 7 and 11