



**Unit 5
Genetics & Traits**

**Grade 8
Science**

Unit Length and Description:

5 Instructional Weeks

Students will use reasoning for animal behaviors and plant structures to affect the probability of survival and construct explanations for how environmental and genetic factors influence growth of organisms. They will also use models to describe structural changes that may result in harmful and beneficial effects of organisms and explain how natural selection may lead to increases and decreases on specific traits in populations over time. Students will end the unit by designing methods for monitoring and minimizing human impacts on the environment.

Science Standards:

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| 8-MS-LS1-4 | Construct and use argument(s) based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of survival and successful reproduction of animals and plants respectively. |
| 8-MS-LS1-5 | Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. |
| 8-MS-LS3-1 | Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. |
| 8-MS-LS4-6 | Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations of species over time. |
| 8-MS-ESS3-3 | Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |

**Enduring Understandings-
Unit Anchor Phenomenon:**

Charles Darwin's Finches on Galapagos Island were identical to mainland finches but had different beaks.

**Essential Questions-
Reflective Summaries:**

- Construct an argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of survival and successful reproduction of animals and plants on Galapagos Islands.
- Construct a scientific explanation based on evidence

for how environmental and genetic factors influence the growth of finches on Galapagos Islands.

- Describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the finches on Galapagos Islands.
- Describe how natural selection may lead to increases and decreases of specific traits in populations of finches on Galapagos Island over time.
- Apply scientific principles to design a method for monitoring and minimizing human impact on Galapagos Islands.