



TEACHER GUIDE

VARIATION OF TRAITS GRADES 3-5

COMMON MISCONCEPTIONS

- **Offspring get all their traits from only one parent.**
Offspring inherit some traits from their mother and some traits from their father.
- **Offspring look just like their parents.**
Offspring look similar to, but not exactly like, their parents.

TRAITS OF LIVING THINGS

Traits, or characteristics of living things, can be passed on through genetics from parents and more distant relatives. Traits can also be influenced by the environment (some more than others). Traits may be physical characteristics, or could be functions. This lesson focuses on traits passed along from parents to offspring.

To help students build the knowledge they need to eventually be able to understand the underlying genetic mechanism for heredity, inheritance, and natural selection, we start teaching the basics of this topic in early elementary grades (Grade 1 NGSS Performance Expectation) that animal and plant parents and offspring are similar but not exactly the same, and that different types of plants and animals have similar features but also vary between individuals. These concepts are explored more deeply by third grade. During middle school and high school students delve into the genetic mechanisms behind the variation of traits.

At the elementary level, a point is made to focus exploration of traits on non-human animals and plants. This is largely due to the personal social implications for some students.