

1-LS3-1 Heredity: Inheritance and Variation of Traits

Students who demonstrate understanding can:

- 1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.** [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.

- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.

Disciplinary Core Ideas

LS3.A: Inheritance of Traits

- Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.

LS3.B: Variation of Traits

- Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

Crosscutting Concepts

Patterns

- Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

Observable features of the student performance by the end of the grade:

1	Articulating the explanation of phenomena
a	Students articulate a statement that relates a given phenomenon to a scientific idea, including the idea that young plants and animals are like, but not exactly like, their parents (not to include animals that undergo complete metamorphoses, such as insects or frogs).
b	Students use evidence and reasoning to construct an evidence-based account of the phenomenon.
2	Evidence
a	Students describe* evidence from observations (firsthand or from media) about patterns of features in plants and animals, including: <ol style="list-style-type: none"> Key differences between different types of plants and animals (e.g., features that distinguish dogs versus those that distinguish fish, oak trees vs. bean plants). Young plants and animals of the same type have similar, but not identical features (e.g., size and shape of body parts, color and/or type of any hair, leaf shape, stem rigidity). Adult plants and animals (i.e., parents) of the same type have similar, but not identical features (e.g., size and shape of body parts, color and/or type of any hair, leaf shape, stem rigidity). Patterns of similarities and differences in features between parents and offspring.
3	Reasoning
a	Students logically connect the evidence of observed patterns in features to support the evidence-based account by describing* chains of reasoning that include: <ol style="list-style-type: none"> Young plants and animals are very similar to their parents. Young plants and animals are not exactly the same as their parents. Similarities and differences in features are evidence that young plants and animals are very much, but not exactly, like their parents. Similarities and differences in features are evidence that although individuals of the same type of animal or plant are recognizable as similar, they can also vary in many ways.