Grades 6–8

3.1.6-8.D Life Science: Growth, Development, and Reproduction of Organisms

Students who demonstrate understanding can *use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.*

Clarifying Statement: Examples of behaviors that affect the probability of animal reproduction could include nest building to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring pollen or seeds, and creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen, and hard shells on nuts that squirrels bury.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Engaging in Argument From Evidence Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s). • Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.	**Growth and Development of Organisms** • Animals engage in characteristic behaviors that increase the odds of reproduction. • Plants reproduce in a variety of ways, sometimes depending on animal behavior and specialized features for reproduction.	**Cause and Effect** • Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.

Pennsylvania Context: Examples of Pennsylvania context include different regions of Pennsylvania that have local native species.

PA Career Ready Skills: Explain to others one's own strengths, needs, and preferences specific to a context.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.02.02.01.a: Identify and summarize the components within AFNR systems (e.g., Animal Systems: health, nutrition, genetics, etc.; Natural Resources Systems: soil, water, etc.).
Science, Environmental Literacy and Sustainability (NAAEE)	5-8 Strand 2.1.B. Earth's living systems: Learners identify basic similarities and differences among a wide variety of living organisms. They explain ways that living organisms, including humans, affect the environment in which they live, and how their environment affects them.

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: ELA	CC.3.5.6-8.A: Cite specific textual evidence to support analysis of science and technical texts. CC.1.4.7.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction. CC.3.6.6-8.A: Write arguments focused on discipline-specific content.
PA Core Standards and Practices: Math	CC.2.4.6.B.1: Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions. CC.2.4.7.B.3: Investigate chance processes and develop, use, and evaluate probability models. CC.2.4.7.B.1: Draw inferences about populations based on random sampling concepts. CC.2.4.8.B.1: Analyze and/or interpret bivariate data displayed in multiple representations. CC.2.4.8.B.2: Understand that patterns of association can be seen in bivariate data utilizing frequencies.
PA Standards: Social Studies	N/A
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-3G: Explain how knowledge gained from other content areas affects the development of technological products and systems.