



## Grades 6–8

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

**Students who demonstrate understanding can** *gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.*

**Clarifying Statement:** Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy); and, on the impacts these technologies have on society as well as the technologies leading to these scientific discoveries.

**Assessment Boundary:** N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
<p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p>Obtaining, evaluating, and communicating information in 6–8 builds on K–5 experiences and progresses to evaluating the merit and validity of ideas and methods.</p> <ul style="list-style-type: none"> <li>Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.</li> </ul>	<p><b>Natural Selection</b></p> <ul style="list-style-type: none"> <li>In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding. One can choose desired parental traits determined by genes, which are then passed on to offspring.</li> </ul>	<p><b>Cause and Effect</b></p> <ul style="list-style-type: none"> <li>Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.</li> </ul> <hr/> <p><b>Connections to Engineering, Technology, and Applications of Science</b></p> <p><b>Interdependence of Science, Engineering, and Technology</b></p> <ul style="list-style-type: none"> <li>Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.</li> </ul> <hr/> <p><b>Connections to Nature of Science</b></p> <p><b>Science Addresses Questions About the Natural and Material World</b></p> <ul style="list-style-type: none"> <li>Scientific knowledge can describe the consequences of actions but does not necessarily prescribe the decisions that society takes.</li> </ul>

**Pennsylvania Context:** Examples of Pennsylvania context include but are not limited to Pennsylvania's biotechnology and agriculture industries.

**PA Career Ready Skills:** Analyze various perspectives on a situation.



### Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
<b>Agriculture (AFNR)</b>	CS.01.02.02.b: Analyze how technology is used in AFNR systems to maximize productivity.
<b>Science, Environmental Literacy and Sustainability (NAAEE)</b>	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. 5-8 Strand 2.3.A. Human-environment interactions: Learners describe human-caused changes that affect the immediate environment as well as other places, other people, and future times.
<b>PA Core Standards: ELA</b>	CC.3.5.6-8.A: Cite specific textual evidence to support analysis of science and technical texts. CC.3.6.6-8.G: Gather relevant information from multiple print and digital resources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of other while avoiding plagiarism and following a standard format for citation.
<b>PA Core Standards and Practices: Math</b>	N/A
<b>PA Standards: Social Studies</b>	6.1.6.B: Compare ways that people meet their needs with how they meet their wants. Describe how resources are combined to produce different goods and services.
<b>Educational Technology (ISTE)</b>	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.
<b>Technology and Engineering (ITEEA)</b>	STEL-6C: Compare various technologies and how they have contributed to human progress.