

**Pennsylvania Academic Standards for Science and Technology**  
*Embryology*

<b>Academic Standard</b>	<b>Grade</b>	<b>Activity/Outcome</b>
<p>3.2.4.C. Recognize and use the elements of scientific inquiry to solve problems.</p>	<p>4</p>	<p>Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</p> <p>Design an investigation.</p> <p>Conduct an experiment.</p> <p>State a conclusion that is consistent with the information.</p>
<p>3.2.7.A. Apply process knowledge to make and interpret observations.</p>	<p>7</p>	<p>Measure eggs as they develop using a variety of scales (weight / size of contents).</p> <p>Describe relationships by making inferences and predictions.</p> <p>Communicate, use space / time relationships, define operationally, raise questions, formulate hypotheses, test and experiment, design controlled experiments, recognize variables, and manipulate variables.</p> <p>Interpret data, formulate models, design models, and produce solutions.</p>

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<p>3.3.4.B. Know that living things are made up of parts that have specific functions.</p> <p>3.3.7.B. Describe the cell as the basic structural and functional unit of living things.</p>	<p>4</p> <p>7</p>	<p>Identification of the parts and functions of an egg (cell).</p>
<p>3.3.4.C. Know that characteristics are inherited and, thus, offspring closely resemble their parents.</p>	<p>4</p>	
<p>3.3.4.D. Identify changes in living things over time.</p>	<p>4</p>	<p>Understanding of the incubation process and development of the growing embryo.</p>
<p>3.3.7.D. Explain basic concepts of natural selection.</p>	<p>7</p>	<p>Understanding of the reasons eggs fail to hatch and/or chicks fail to thrive.</p>

**Pennsylvania Academic Standards for Environment and Ecology**  
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<b>Academic Standard</b>	<b>Grade</b>	<b>Activity/Outcome</b>
4.4.4.A Know the importance of agriculture to humans	4	Know how people depend on agriculture. Understand the relationship between agricultural producers and commodities.
4.4.7.A Explain society's standard of living in relation to agriculture.	7	Compare different environmental conditions related to agricultural production, cost and the quality of the product. Understand the components of the Food and Fiber System.
4.4.4.B Identify the role of the sciences in Pennsylvania agriculture.	4	Identify common animals and plants grown on Pennsylvania Farms. Identify fiber products grown in Pennsylvania. Understand the how the Farm Supply segment of the Food and Fiber System influences the other components of the system.
4.4.4.C Know that food and fiber originate from plants and animals.	4	Define and identify food and fiber. Identify what plants and animals need to grow. Identify an agricultural product based on its origin. Describe several products and identify their origins. Describe the journey of a local agricultural product from production to the consumer. Trace a commodity as it moves through the food and fiber system from production to distribution.

<b>Academic Standard</b>	<b>Grade</b>	<b>Activity/Outcome</b>
<p>4.4.7.C            Explain agricultural systems' use of natural and human resources.</p>	<p>7</p>	<p>Identify the plants and animals that can be raised in an area and explain why. Define issues associated with food and fiber production. Identify jobs involved in the production, processing and distribution of one locally grown agricultural commodity.</p>
<p>4.4.4.D            Identify technology and energy use associated with agriculture.</p>	<p>4</p>	<p>Identify the various tools and machinery necessary for farming. Identify tools and machinery used in the production and processing of agricultural products.</p>