

**Grade 4 - From molecules to organisms; Structures and processes  
(8 weeks)**

**Essential Questions :**

- What are examples of physical adaptations that plants or animals have that help them to survive and reproduce?
- What are examples of behavioral adaptations that plants or animals have that help them to survive and reproduce?
- How do plants reproduce and grow?

**Big Ideas:**

- Organisms have structures and functions that help them survive, grow, reproduce and behave in a certain way. (4LS1-1)
- Animals rely on instinct and learned behavior to meet their needs. (4LS1-2)

**Vocabulary:** Organisms, species, food web, adaptation, instinct, characteristic

Students who demonstrate understanding can:

- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.** [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.] [Assessment Boundary: Assessment is limited to macroscopic structures within plant and animal systems.]
- 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.** [Clarification Statement: Emphasis is on systems of information transfer. ] [Assessment Boundary: Assessment does not include the mechanisms by which the brain stores and recalls information or the mechanisms of how sensory receptors function.]

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

<b>Science and Engineering Practices</b>	<b>Disciplinary Core Ideas</b>	<b>Crosscutting Concepts</b>
<p><b>Developing and Using Models</b> Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions.</p> <ul style="list-style-type: none"> <li>• Use a model to test interactions concerning the functioning of a natural system. (4-LS1-2)</li> </ul> <p><b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in 3–5 builds on K–2</p>	<p><b>LS1.A: Structure and Function</b></p> <ul style="list-style-type: none"> <li>• Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)</li> </ul> <p><b>LS1.D: Information Processing</b></p> <ul style="list-style-type: none"> <li>• Different sense receptors are specialized for particular</li> </ul>	<p><b>Systems and System Models</b></p> <ul style="list-style-type: none"> <li>• A system can be described in terms of its components and their interactions. (4-LS1-1),(4-LS1-2)</li> </ul>

<p>experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).</p> <ul style="list-style-type: none"> <li>• Construct an argument with evidence, data, and/or a model. (4-LS1-1)</li> </ul>	<p>kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)</p>	
<p><i>Connections to other DCIs in fourth grade:</i> N/A</p>		
<p><i>Articulation of DCIs across grade-levels:</i> <b>1.LS1.A</b> (4-LS1-1); <b>1.LS1.D</b> (4-LS1-1); <b>3.LS3.B</b> (4-LS1-1); <b>MS.LS1.A</b> (4-LS1-1),(4-LS1-2); <b>MS.LS1.D</b> (4-LS1-2)</p>		
<p><i>Common Core State Standards Connections:</i></p> <p><i>ELA/Literacy -</i></p> <p><b>W.4.1</b> Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (4-LS1-1)</p> <p><b>SL.4.5</b> Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. (4-LS1-2)</p> <p><i>Mathematics -</i></p> <p><b>4.G.A.3</b> Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded across the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. (4-LS1-1)</p>		