

5th Grade

Unit 2: Matter and Energy in Organisms and Ecosystems:

Duration: 4-8 weeks

| Desired Results | | |
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| <p>Performance Expectations:</p> <p>5-PS3-1 Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</p> <p>3-5 ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p>5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water.</p> <p>3-5 ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.</p> <p>5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p> <p>3-5 ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a</p> | <i>Transfer</i> | |
| | <p><i>Meaning</i> ENDURING UNDERSTANDINGS: Crosscutting Concepts <i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Energy can be transferred in various ways and between objects. ● Matter is transported into, out of, and within systems. ● A system can be described in terms of its components and their interactions. | |
| | <i>Meaning</i> | |
| | <p><i>Acquisition</i> Disciplinary Core Ideas <i>Students will know...</i></p> <ul style="list-style-type: none"> ● The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). ● Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary) ● Plants acquire their material for growth chiefly from air and water. ● The food of almost any kind of animal can be traced back to plants. | <p>Science and Engineering Practices <i>Students will be skilled at...</i></p> <ol style="list-style-type: none"> 1. Use models to describe phenomena. 2. Support an argument with evidence, data, or a model. 3. Science explanations describe the mechanisms for natural events. |

model or prototype that can be improved.

Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.”

Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem.

- Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment.

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| Evidence | | |
| Evaluation Criteria | Assessment Evidence | |
| | PERFORMANCE TASK(S): McMillan McGraw-Hill Science, Gizmos, Mobymax | |
| | OTHER EVIDENCE: Unit assessment | |
| Learning Plan | | |
| <i>Summary of Key Learning Events and Instruction</i> | | |