



DYNAMIC[®]
LEARNING MAPS

Mini-Map for SCI.EE.5.LS.Ecosys-1

Subject: Science

Life Science (LS)

Grade band: 3–5

Grade-Level Expectation

DLM Essential Element	DLM Disciplinary Core Idea Family ¹	Framework Disciplinary Core Ideas
SCI.EE.5.LS.Ecosys-1 Use data to support that food provides animals with the materials and energy they need for body repair, growth, warmth, and motion.	Life Science – Ecosystem: Cycling of Matter and Flow of Energy	LS1.C: Organization for Matter and Energy Flow in Organisms LS2.A: Interdependent Relationships in Ecosystems LS2.B: Cycles of Matter and Energy Transfer in Ecosystems PS3.D: Energy in Chemical Processes and Everyday Life

¹ DLM Science Essential Elements organize Disciplinary Core Ideas (defined in the *Framework for K-12 Science Education*) into DCI families. By combining similar concepts within a domain, science content from the general education standards is reduced in depth, breadth, and complexity to provide access for students that qualify for the DLM alternate assessment.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target ²
Compare objects that have similar and different physical characteristics.	Based on what is and is not food, classify animals that eat food as living things and inanimate objects (i.e., objects other than plants, animals, and humans) that do not eat food as non-living things.	Use data from multiple timepoints to support that animals need to consume food to grow.	Use data as evidence to make and support claims about the relationships between available energy and matter from food sources and animals' abilities to sustain their bodily processes (i.e., sustain warmth, movement, growth, and body repair).

² The target linkage level description is a measurement target that describes the expectations (content and performance) of the Essential Element for assessment purposes.

Essential Element Three Dimensions

Each Essential Element is defined in the three dimensions described in the *Framework for K-12 Science Education*: disciplinary core ideas (DCIs), science and engineering practices (SEPs), and crosscutting concepts (CCCs). The table below lists the details of each dimension from the individual [DLM Essential Element descriptions](#), with color-coding of dimensions corresponding to the Next Generation Science Standards (NGSS). The first row (in blue) lists the SEP(s) used to construct the Essential Element and describes ways each SEP could be incorporated. The second row (in orange) describes the science concepts within the DCI family related to this Essential Element. The third row (in green) lists the CCC(s) associated with the Essential Element and explains how each might be incorporated in the grade band (quoted from NSTA, 2013, matrix of CCCs). Note that the SEP is presented first here (rather than second, as it is in the full list of Essential Elements) to reflect the emphasis on practices in instruction and across the linkage levels. The final row (in white) includes examples of how the three dimensions could work together to support instruction for the Essential Element. These examples provide ideas for integrating the dimensions and are not exhaustive, nor are they intended to limit instruction.

Science and Engineering Practices	Analyzing and Interpreting Data: Analyzing data in grades 3–5 builds on K–2 experiences and progresses to using and interpreting data to support claims and relationships. • Represent and interpret data in tables or graphs to determine and identify patterns that indicate relationships. • Use data as evidence for constructing and supporting claims about relationships. Engaging in Argument from Evidence: Engaging in argument from evidence in grades 3–5 builds on K–2 experiences and progresses to identifying information that can support claims about the natural world. • Identify relevant evidence to support a claim. • Use observations, information, data, or a model to support claims.
Disciplinary Core Ideas	Ecosystem: Cycling of Matter and Flow of Energy • Animals acquire matter and energy from their environment. • Organisms live where they can find enough food. • Some animals eat plants for food, and other animals eat the animals that eat plants. • Food provides animals with the materials they need for body repair, growth, warmth, and motion. • Energy stored in food can be used for body repair, growth, warmth, and motion.

Crosscutting Concepts	Cause and Effect: Mechanism and Explanation: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering. • Cause and effect relationships are routinely identified, tested, and used to explain change. • Events that occur together with regularity might or might not be a cause and effect relationship. Energy and Matter: Flows, Cycles, and Conservation: Tracking energy and matter flows into, out of, and within systems helps one understand their system's behavior. • Matter is made of particles. • Matter flows and cycles can be tracked in terms of the weight of the substances before and after a process occurs. The total weight of the substances does not change. This is what is meant by conservation of matter. Matter is transported into, out of, and within systems. • Energy can be transferred in various ways and between objects.
How three dimensions support instruction for this Essential Element	Students can use data to identify relationships between animals getting the type and amount of food they need (causes) and being able to grow, move, stay warm, and repair their bodies (effects). Students can also use data as evidence that energy and matter are transferred through the food animals eat. They can identify that food stores energy and is made up of matter and argue that both are transferred to the animal that eats it. For example, when using data provided to them, students can observe that the amount of food that is available for animals to eat relates to whether they have energy for movement and growth.

Instructional Resources

Resources
Learning modules and additional science instructional resources can be found at https://www.dlmpd.com/science/
A glossary defining key science terms found in the Essential Elements can be found at DLM Glossary for Science Learning Maps .

[Link to Text-Only Map](#)

SCI.EE.5.LS.EcoSys-1 Use data to support that food provides animals with the materials and energy they need for body repair, growth, warmth, and motion.

