

THE STANDARD

Cycling of Matter

Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

DCI

DISCIPLINARY
CORE IDEA

LS2.A · Interdependent Relationships in Ecosystems

"The food of almost any kind of animal can be traced back to plants. 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."

This standard is about following matter as it moves in a loop. A plant pulls in air, water, and soil material and turns it into food. An animal eats the plant. When things die, decomposers send the matter back to the soil and air. **5th graders model that whole loop.**

SEP

SCIENCE &
ENGINEERING
PRACTICE

Developing and Using Models

"Develop a model to describe phenomena."

5th graders aren't just labeling a diagram from a textbook. They build their own model, usually a drawing with arrows, to show how matter actually moves. The model has to describe something real they observed, like a rotting apple feeding the soil. **The model is the thinking, not decoration.**

CCC

CROSSCUTTING
CONCEPT

Systems and System Models

"A system can be described in terms of its components and their interactions."

An ecosystem is a system, which just means a group of parts that work together. The parts here are plants, animals, decomposers, and the environment (air, water, soil). 5th graders describe how those parts interact: who feeds whom, what gets returned, where the matter goes. **The model shows the whole system at once.**