



Energy Transfers Around a Kangaroo Rat in the Desert Middle School

Overview

Students trace the transfer and transformation of energy as it flows through a small section of the desert food web centered on a kangaroo rat. They learn about energy as a crosscutting concept, applying “physical science” concepts of kinetic and potential energy to “life science” concepts like photosynthesis, metabolism, thermoregulation, and movement of organisms.

Phenomenon

Do energy transfers that we generally think about for nonliving objects also apply to living objects such as kangaroo rats in the desert?

Next Generation Science Standard

MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concept
Engaging in argument from evidence Developing and using models	PS3.B Conservation of energy and energy transfer	Energy and matter

Common Core State Standards

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).