

KNME K-5 LESSON PLAN
APS @Home
APS Curriculum and Instruction TLN

Title of Lesson: Consumer evidence - scat	Submitted by: Vince Case & Steven Henley
Content Area: Science, grades 4-5	
Materials Needed: paper and pencil, modeling clay, oatmeal AND/OR dirt and water	
Handouts Attached: none	
Standard Addressed: NGSS 5-LS2 Ecosystems: Interactions, Energy & Dynamics (see attached NGSS standards sheet for full information)	
Skill to be Maintained: Understanding that consumers gain energy by eating food from other consumers or producers that energy originated from the sun.	
Essential Question: How do consumers get their energy and where does this energy come from?	
Academic Vocabulary/Word Wall words: Consumers, producers, energy, scat	
Brain Drain or Warm Up Activity: N/A	
<p>Basic Lesson Description and Procedure:</p> <ol style="list-style-type: none"> 1. Students will watch the video from the SMNHC. 2. Students will make observations of different kinds of scat and specifically explore different samples of bear scat while learning about different mast (food) sources of black bear. 3. Students will look carefully at the bear scat and discover that bears eat food that is in season and available for them to eat (like bear corn, orchard fruit, insects, juniper berries, cactus fruit, piñons, acorns, grasses, etc.). 4. Students will learn about and observe scat from different kinds of consumers (herbivores, omnivores, carnivores) and recognize scat contents from several consumers that live in the Sandia Mountains (including pack rats, rabbits, deer, foxes, coyotes, bears, bobcats, turkey, and raccoon). 5. Students will gather supplies needed to make scat samples (dirt, water, oatmeal, modeling clay, plastic containers, shovel, spoon, etc.) 6. Students will learn how to make different kinds of scat using these materials and then make their own scat with an adult's permission and/or supervision. 	
Scat-Making Activity: With permission of a grown-up, students will make different kinds of scat using clay, dirt/water, mud, oatmeal, whatever they can find. Students can also draw and label scat if these materials are too difficult to find.	
Lesson Conclusion/Potential Practice at Home: Students can let their scat dry and share their scat models with family members and others living with them if they choose.	
Accommodations-Modifications: Just about any grade level can do this lesson and activity	

5-LS2 Ecosystems: Interactions, Energy, and Dynamics

Students who demonstrate understanding can:

- 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.** [Clarification Statement: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.] [Assessment Boundary: Assessment does not include molecular explanations.]

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

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Developing and Using Models Modeling in 3–5 builds on K–2 models and progresses to building and revising simple models and using models to represent events and design solutions.</p> <ul style="list-style-type: none"> Develop a model to describe phenomena. (5-LS2-1) <p>Connections to the Nature of Science</p> <p>Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena</p> <ul style="list-style-type: none"> Science explanations describe the mechanisms for natural events. (5-LS2-1) 	<p>LS2.A: Interdependent Relationships in Ecosystems</p> <ul style="list-style-type: none"> 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. (5-LS2-1) <p>LS2.B: Cycles of Matter and Energy Transfer in Ecosystems</p> <ul style="list-style-type: none"> 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. (5-LS2-1) 	<p>Systems and System Models</p> <ul style="list-style-type: none"> A system can be described in terms of its components and their interactions. (5-LS2-1)

Connections to other DCIs in fifth grade:

5.ESS2.A (5-LS2-1); **5.PS1.A** (5-LS2-1)

Articulation of DCIs across grade-levels:

2.PS1.A (5-LS2-1); **2.LS4.D** (5-LS2-1); **4.ESS2.E** (5-LS2-1); **MS.PS3.D** (5-LS2-1); **MS.LS1.C** (5-LS2-1); **MS.LS2.A** (5-LS2-1); **MS.LS2.B** (5-LS2-1)

Common Core State Standards Connections:

ELA/Literacy -

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1)

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1)

Mathematics -

MP.2 Reason abstractly and quantitatively. (5-LS2-1)

MP.4 Model with mathematics. (5-LS2-1)