EE.5-LS2-1

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Target Level	**Precursor Level**	**Initial Level**	**Accessibility Considerations for Science and Engineering Practice**
Create a model that shows the movement of matter (e.g., plant growth, eating, composting) through living things.	Identify a model that shows the movement of matter from plants to animals (e.g. food chain/food web).	Identify common human foods.	• Access information through concrete pictures, physical scale models (e.g., tactile displays) and/or computer generated models. • Represent relationships with diagrams representing only the most relevant information.

Activity Title	**Estimated Classroom Time Needed**	**Essential Questions**
Food Cycles	One session	• Does the student understand that the food of most animals can be traced back to plants? • Does the student understand that there is a cycle of matter that supports life?

Suggested Materials

- Story or description about an ecosystem
- Pictures or tactile representations of animals from the story
- Pictures or tactile representations of food and non-food items
- Arrows to indicate direction of energy transfer

The following website provides a list of books that may be used or adapted:
http://www.nsta.org/recommends/

Engage Students in the Activity

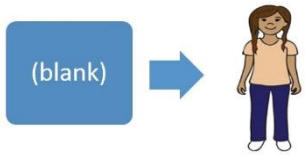
Ask students questions such as, "What is food?" "Why do we need food?" Ask students about their favorite food. Explain that food gives living things the energy and material they need to grow and stay alive. Ask students to provide information they already know about food chains.

The following video explains why humans and animals need food:
"Gotta Eat!" https://www.youtube.com/watch?v=z9TIlM96lT8

Activity Description

Define (throughout activity): matter, movement of matter, food chain

Step 1: Students will be given a small model to complete that represents what humans eat. Give students pictures or tactile representations of food and non-food items to place or select that will complete the model. For example, give the student a picture or tactile representation of an apple and a picture or tactile representation of a pencil and have the student complete the model.



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Step 2: Build a model from a description or story about an ecosystem using two to three organisms. For example, the student learns about an ecosystem and creates a food chain that could include grass, a grasshopper, and a lizard. Explain to students that the arrows between the organisms show how matter moves through the ecosystem. As food is digested, it releases energy into the organism. Systems are connected because each part needs energy. Energy travels through the food chain. Ask students questions such as, "What eats the grass?"

Step 3: Expand the model to include decomposers, such as worms. (Decomposer is not a word that students will need to know at this level.) Talk about the matter that is provided to plants from decomposers. Matter moves through decomposers and returns nutrients back to the soil for plants. With the addition of decomposers, it should be emphasized that movement of matter is a cycle that repeats. Give the student different models with missing parts, and have the student complete the cycle.

The following video may help with adding a decomposer to the food chain:

- "The Dirt on Decomposers," https://www.youtube.com/watch?v=uB61rfeeAsM
- "Morning Lesson with Mufasa," https://www.youtube.com/watch?v=bW7PlTaawfQ

Note: This EE is closely related to EE.5-PS3-1, and teachers may find it helpful to review both instructional activities together.

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Ideas for Differentiating the Activity		
At the Target level:	***At the Precursor level:***	***At the Initial level:***
Students will create a model that includes 3–4 producers/consumers/decomposers. The model will show how matter moves from producers to consumers to decomposers and back to producers.	Students will answer questions about a provided model that includes 2–3 producers/consumers.	Students will complete a model representing what humans eat by selecting from pictures or tactile representations of food and non-food items.
Checks for Understanding		
At the Target level, students will:	***At the Precursor level, students will:***	***At the Initial level, students will:***
Correctly place organisms in a model and/or correctly identify a missing piece of the model. The model will show how matter moves from producers to consumers to decomposers and back to producers.	Correctly interpret the placement of organisms and direction of matter movement in a model.	Identify human food and non-food items.

Please complete a short survey about your experiences using the science instructional activities by clicking on this link or by copying and pasting this url: https://kansasedu.qualtrics.com/jfe/form/SV_5t0tWMHjEgO4J1z

Thank you!