

## THE STANDARD

# The Sun's Energy

Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun.

 ANCHORING PHENOMENON

## The Hamburger That Started in a Field of Grass

Hold up a hamburger and ask a 5th grader where the energy in it came from. Most will say 'the cow.' Push back. Where did the cow get its energy? From eating grass. Where did the grass get its energy? Now they're stuck. Keep tracing it back and the trail leads somewhere surprising: the sun. A burger, a bun, the whole meal, all of it can be traced back to sunlight that fell on a field months ago. 5th graders will want to figure out how the sun ended up on their plate.

## DRIVING QUESTION

*"How can the energy in a hamburger have started out as sunlight?"*

 INVESTIGATIVE 1

### Sun, Then Sprout

Grow two sets of bean seeds, one on a sunny windowsill and one shut in a dark cabinet. After a couple of weeks, the sunny sprouts are green and healthy and the dark ones are pale and yellow with no green color. Same seeds, same water, only the sunlight changed. Use this to sharpen the anchor: without sunlight a plant can't make its own food, so it stays yellow and eventually runs out of stored energy. The sun is the first link in the chain. No sun, no food energy to pass on.

## DRIVING QUESTION

*"Why does the plant in the dark turn pale and yellow while the plant in the sunlight stays green?"*

 INVESTIGATIVE 2

### Follow the Energy Back

Give groups a stack of food cards, like an apple, a chicken nugget, a glass of milk, a fish stick, and have them lay out the chain behind each one, working backward until every chain lands on the sun. The apple traces to an apple tree to the sun. The chicken nugget traces to a chicken to the corn it ate to the sun. Every single card ends in the same place. This is the anchor turned into a hands-on sorting task.

## DRIVING QUESTION

*"No matter what food we pick, why does the trail always end at the sun?"*