THE STANDARD

Food & Chemical Reactions

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

ANCHORING PHENOMENON

The Sprinter and the Sandwich

A track athlete eats a turkey sandwich two hours before a race. During the race, she sprints all-out for 12 seconds. The sandwich is gone. The race is over. Somewhere in between, the molecules in that bread and turkey turned into the energy that moved her legs. But the atoms didn't vanish. They went somewhere. Students will keep circling back to this all week: where did the sandwich end up?

> DRIVING QUESTION
> *"How does a sandwich become a sprint?"*

INVESTIGATIVE 1

The Cracker That Turns Sweet

Have students chew a saltine cracker and hold it on their tongue for a full 60 seconds without swallowing. It starts to taste sweet. The starch in the cracker is being broken down into glucose by an enzyme in their saliva (amylase). Digestion is starting in their mouth, and they can taste the chemistry happening. Use this one to sharpen the breakdown lens the anchor is pushing on.

> DRIVING QUESTION
> *"If digestion is invisible, how did the cracker change in my mouth?"*

INVESTIGATIVE 2

The Bodybuilder and the Chicken

A bodybuilder eats six chicken breasts a day and gains visible muscle over a few months. The chicken protein didn't just give him energy. Some of the amino acids from that chicken got rearranged into his muscle protein. The chicken, atom by atom, became part of him. Same kind of matter-tracking the sprint phenomenon hints at, but in slow motion and aimed at growth instead of energy release.

> DRIVING QUESTION
> *"How does eating chicken make a person bigger?"*