THE STANDARD

Synthetic Materials

Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

ANCHORING PHENOMENON

The Pill That Came From a Tree

Hold up an aspirin tablet next to a piece of willow bark. The pill is small, white, identical to every other one in the bottle. The bark is rough, brown, full of fibers, smells like wood. The pill works the same every time. The bark works sometimes, sort of, depending on which piece you chew. People used the bark for thousands of years before chemists figured out how to make the pill.

DRIVING QUESTION

"How did people turn a tree into a reliable medicine, and what did that change about how the world works?"

INVESTIGATIVE 1

A Plastic Bottle's Backstory

A clear plastic water bottle on the desk. Then a photo of an oil pump in West Texas. The bottle and the oil look nothing alike. But every plastic bottle in the room started as crude oil somewhere underground. The chemical process in the middle is what changed everything. Use this to sharpen the "natural resource to synthetic product" lens the anchor is pushing on.

DRIVING QUESTION

"How does black goopy oil become a clear, lightweight, leak-proof water bottle, and what does that transformation cost us?"

INVESTIGATIVE 2

The Fertilizer That Fed the World

A bag of synthetic lawn fertilizer next to a picture of clear blue sky. Most of the nitrogen in that bag came from the air. About a hundred years ago, chemists figured out how to pull nitrogen out of the atmosphere and turn it into fertilizer. That single invention changed how much food the planet could grow. It also changed what runs off into rivers. Same kind of source-to-product chain as the anchor, with bigger stakes.

DRIVING QUESTION

"If fertilizer comes from the air, why does it sometimes cause so much damage to lakes and rivers?"