THE STANDARD

Minimizing Human Impact

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

ANCHORING PHENOMENON

The River That Caught Fire and the River That Didn't

The Cuyahoga River in Cleveland caught fire in 1969 because surface oil and industrial waste were thick enough to ignite. Today the same river supports fish populations and recreation. The water didn't fix itself. People started measuring it, set limits on what could be discharged, and kept monitoring. The river that was once burning is now a working ecosystem. The thing that changed was the design of the system around it.

> DRIVING QUESTION
>
> *"What does it take to turn a measurably damaged environment into a measurably healthier one, and how would we know it worked?"*

INVESTIGATIVE 1

Two Photos of the Amazon, Five Years Apart

Two satellite images of the same region of the Amazon, taken five years apart. In the first, mostly green. In the second, a fishbone pattern of cleared roads cutting into the forest. The same tool that took the photos is being used by researchers to count how many square kilometers of cover were lost between the two dates. Use this one to sharpen the monitoring lens the anchor is pushing on: you can't manage what you don't measure, and you can measure things from space.

> DRIVING QUESTION
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> *"How do you decide what to measure when the change you're studying is too large to see from the ground?"*

INVESTIGATIVE 2

The Classroom CO_2 Curve

A CO_2 sensor sits on the front desk and records every five minutes during one school day. The line is low in the morning, climbs steeply during first period as students fill the room, drops at lunch when the room empties, and climbs again in the afternoon. The classroom is a measurable system, and the human activity that changes its air is just sitting and breathing. Same monitoring logic as the anchor, only in a small space and a short time.

> DRIVING QUESTION
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> *"If a sealed room can change in measurable ways from a class period of breathing, what does that tell us about how human activity changes the larger systems we live in?"*