THE STANDARD

Wave Interactions with Materials

Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

ANCHORING PHENOMENON

The Cafeteria vs. The Library

Two rooms in the same school. One is loud enough that you have to lean in to hear your friend. The other is so quiet a whisper carries. Same kid, same voice, same school. The rooms aren't different sizes or different temperatures in any way that matters. What's different is the stuff on the walls, the floor, the ceiling. Students will keep circling back to this all week.

DRIVING QUESTION

"Why does the exact same voice sound completely different depending on what's around you?"

INVESTIGATIVE 1

A Window You Can See Through AND See Yourself In

Stand outside a lit room at night and look at the window. You see the room inside. Stand inside the same lit room at night and look at the window. You see yourself reflected. Same glass, same window, two different jobs at the same time. Use this one to sharpen the lens the anchor is pushing on: a single material can split a wave into more than one outcome at the same surface.

DRIVING QUESTION

"How can one piece of glass let light through one way and bounce it back the other?"

INVESTIGATIVE 2

Stained Glass in Afternoon Sun

A stained-glass window with the sun behind it. The floor inside catches colored patches of light. Red panes throw red light, blue panes throw blue, but the dark panes don't throw anything (no patch on the floor under them). Same sunlight hitting every part of the window. Different colors of glass do different things to it. Same kind of split as the anchor, only now color decides what gets through.

DRIVING QUESTION

"Why does a red pane of glass make a red patch on the floor, and what happens to the rest of the light?"