THE STANDARD

# Iterative Testing & Modification

*Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.*

ANCHORING PHENOMENON

## SpaceX, Year of the Exploding Rockets

Show students the Starship test footage from 2020 and 2021. Rocket after rocket. Some make it most of the way. Some explode on launch. Some explode on landing. By 2024 SpaceX is catching the rocket booster out of the sky. The whole journey is iteration in front of a camera. Engineers don't hide the failures. They use them.

DRIVING QUESTION

*"If their rockets keep blowing up, why do we still call SpaceX successful?"*

INVESTIGATIVE 1

### The Paper Helicopter That Won't Quit

A single paper helicopter design, dropped from the same height ten times in a row, lands at slightly different spots each time. Same paper, same fold, same drop. The data isn't identical. Use this to sharpen the lens the anchor is pushing on: iteration isn't just about changes between versions. You have to know how much variation your test has before you can trust that a change to v2 actually mattered.

DRIVING QUESTION

*"How big does a change have to be before you can trust it actually made a difference?"*

INVESTIGATIVE 2

### The iPhone Lineup

Show the lineup of iPhones from 2007 to today. Side by side. Same product family, totally different machines. The first one has no app store, no front camera, no fingerprint reader. Each year added one or two new pieces. The change from year to year is small. The change from start to finish is enormous. Same loop as the anchor, only stretched across two decades instead of two years.

DRIVING QUESTION

*"Could Apple have built today's iPhone in 2007 if they'd just tried harder, or did each version have to come first?"*