

THE STANDARD

Improving Designs

"Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved."



ETS1.B • Developing Possible Solutions

"Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved."

This standard is the "make it better" step of engineering. Elementary students already built something. Now they test it on purpose to find the weak spot, then change one part to fix it. A test isn't pass or fail. **It's how you find what to improve next.**



Planning and Carrying Out Investigations

"Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered."

A fair test is the heart of this standard. If 3rd to 5th graders change the design AND change how hard they test it at the same time, they can't tell what made the difference. **They keep everything the same except the one thing they want to compare, and they test more than once.**

