THE STANDARD

Comparing Solutions

"Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem."

DCI — DISCIPLINARY CORE IDEA

ETS1.B · Developing Possible Solutions

> *"Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions."*

This standard lives inside one job: a kid has two real designs for the same problem, and they have to pick the better one without just going with their favorite. They name what the design needs to do (the criteria), name what they're stuck with (the constraints), test both, and compare. **That single task is the science practice, the core idea, and the crosscutting concept all at once.**

SEP — SCIENCE & ENGINEERING PRACTICE

Constructing Explanations and Designing Solutions

> *"Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem."*

Elementary students aren't handed one right answer to build. They generate more than one possible solution, then compare them head to head. **The skill is using the same yardstick (the criteria and constraints) on both designs so the comparison is fair instead of a popularity contest.**

CCC — CROSSCUTTING CONCEPT

Influence of Science, Engineering, and Technology on Society and the Natural World

> *"Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands."*

Here's the idea 3rd to 5th graders carry out the door: engineering exists to solve real problems people actually have. A backpack that won't stay zipped, a boot scraper that's always muddy, a phone that slides off the couch. **Comparing solutions is how engineers make the chosen design better for the people who need it.**