

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."

 ANCHORING PHENOMENON

Two Bridges, One Backpack to Hold

Two groups each build a paper bridge that has to span a gap and hold a stack of pennies. Both bridges look totally different. One is folded into a deep V, the other is flat with rolled paper columns. They both get pennies stacked on top until one sags. The class wants to know which design is actually better, and that turns out to be a trickier question than it sounds.

DRIVING QUESTION

"When two designs solve the same problem in different ways, how do we decide in a fair way which one is better?"

 INVESTIGATIVE 1

Same Rules for Both: The Criteria List

Before testing anything, the class writes down what a good bridge has to do (span the gap, hold pennies, stay under a paper limit). Those are the criteria and constraints. Now both bridges get judged by the exact same list. This sharpens the anchor's big question: a comparison is only fair when both designs face the same rules.

DRIVING QUESTION

"What rules does every design have to follow so the contest between them is actually fair?"

 INVESTIGATIVE 2

Borrow the Best Parts

After comparing, groups talk to each other about what worked. The V-fold group sees that columns added height, the column group sees that folding added strength. They each build a second bridge that borrows the other team's best idea. This sharpens the anchor: comparing isn't just to crown a winner, it's to make the next design better.

DRIVING QUESTION

"After we compare two designs, how do the best parts of each one help us build an even better third design?"