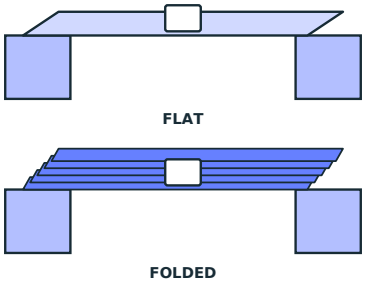
E CREATIVE ENGINEERING

HAMSTER LESSON #0000013

Fold, test, and improve.

Shape changes how paper bends.

Same paper. Same gap. Same test.



TRY IT TODAY

Fold one sheet. Test both. Compare the results.

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1. ❓ Can one sheet of paper carry more by changing its shape?
2. 🙋 Yes. Folds can help paper resist bending. Test the design: not every fold works equally well.
3. ⏳ Engineers also use folding in space. The Webb telescope folded for launch and unfolded afterward; there the goal was fitting inside its rocket.
4. 💡 Compare a flat sheet with an accordion-folded sheet across two supports. Keep the gap the same and add matching loads at the center.
5. 🔍 Shape, fold direction, and the distance between supports matter. Changing everything at once makes it hard to know what caused a difference.
6. 🌎 Testing and improving a design can help us use materials wisely. A paper model lets us explore an idea before building something larger.
7. 🎯 With an adult, compare two equal sheets over supports 10 cm apart. Pleat one sheet along the span. Add equal small blocks one at a time, and count how many each design holds before it gives way.

References · ANU · Paper bridge experiment · Science Buddies · Paper bridge design · NASA · Webb and origami
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