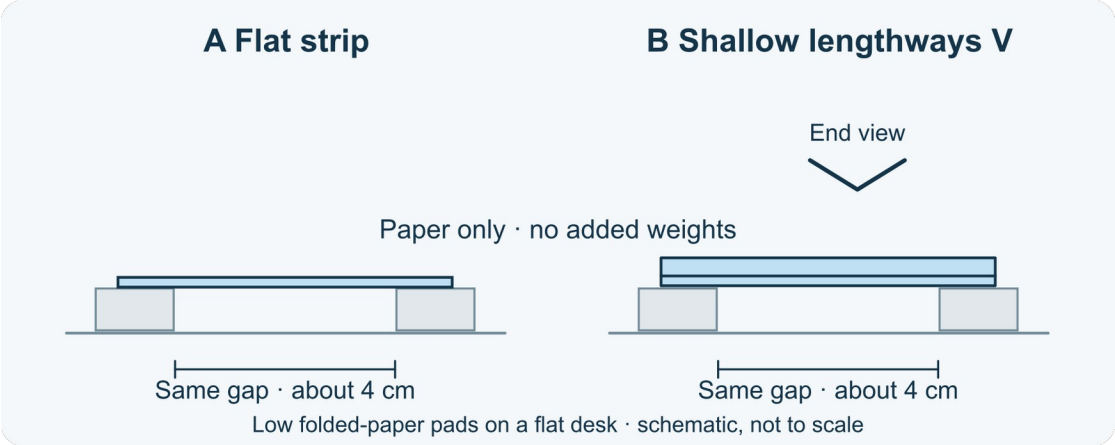
What can one fold change

How can I compare two paper shapes without claiming more than I tested?

Sketch or compare a flat paper strip and the same strip with a shallow fold. Define a small observation before drawing a conclusion.

Make | 15–25 minutes, or two labelled sketches | Three small pieces of scrap paper, Pen or pencil, Optional ruler; approximate sizes are sufficient

Start here Sketch a paper strip resting across two folded-paper pads on a flat desk. Label a gap of about 4 cm between the pads. You can complete the whole activity as a drawing.



Same paper and gap, different cross-section

1 Choose a small comparison

If making the model, fold two paper pieces into matching low pads, less than 1 cm high, on the same flat desk. Leave a gap of about 4 cm. Lay an approximately 8-by-4 cm paper strip across them with both ends supported. Use paper only and add no objects or weights.

2 Define the observation

Version A is flat. Before trying it, choose what to notice: whether the middle stays clear of the desk or touches it during a slow count of five. Record what happens, or leave the result unknown if you are sketching.

3 Change the shape

Use the same strip. Fold it once along its long centre line, then open it into a shallow V. Rest its ends on the same pads with the same gap. Keep the paper and supports unchanged; observe the same thing, with no added load.

4 Write a limited conclusion

Describe both versions, including an unchanged or uncertain result. Explain what you changed and what would need a different test. A paper model is not a design for a bridge anyone can use.

Fictional example two clear gaps

This is an invented recording example, not an experiment Horizon performed. It shows how an unchanged result can still be recorded honestly.

• A: flat strip; the fictional record says its middle stayed clear of the desk for a count of five.

• B: the same strip with a shallow lengthways V; the fictional record also says its middle stayed clear.

• The paper, pads and gap stayed the same. Only the strip's shape changed; the example shows no difference on this chosen observation.

What this example can show Neither entry establishes load capacity or a strongest design. Paper type, dimensions and observations matter; your model may behave differently.

A different way

Compare only the supplied sketches and fictional record. Describe the change or direct someone to add labels; construction is optional.

If you want to go further

Draw an alternative fold and predict what might change. Plan a comparison with the same paper and gap; no weights, larger structures or testing to failure are part of this activity.

Something to notice

Did my conclusion stay within the observation I actually made?

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TeachEngineering, University of Colorado Boulder Engineering Design Process

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TeachEngineering, University of Colorado Boulder Bridge Types: Tensile & Compressive Forces

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