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Jan 19, 2021
Tech 1010
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Model Bridge

For my model bridge, I folded two pieces of paper in an accordion zigzag pattern. I then had the pair attached together at the edges. I pressed the accordion until the folds were tight enough together that they only had 1.5” space from edge to edge. I bridged that 1.5” length with tape to apply tension where the accordion wanted to press outwards. This permitted the tension to continue pressing outwards, but held the outermost edges in place.

The reason why this works so well is that the zigzag folds create 2 sides of a triangle while the tension of the sides pressing apart plus the downward force of a can resting on them makes a virtual 3rd side. Triangles are the strongest shape in nature because of how it always distributes resting weight away from the fragile faces of the polygon, to the joints where it is stronger. By creating an accordion, I had dozens of triangles spanning the length of the bridge. Additionally, for each triangle (aside from the outermost edges) they flanked each other, meaning as the weight was applied downward, each point at the top actually was formed by three different triangles, creating a distribution ratio of 1 to 3 to mitigate the pressure.