SCIENCE RENDEZVOUS KINGSTON
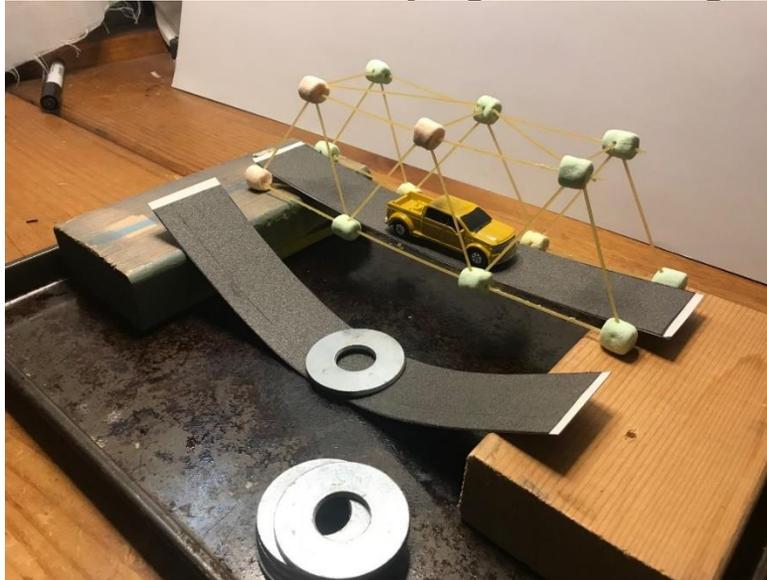
How to Build a Spaghetti Bridge

Dry spaghetti is very brittle and breaks easily, but by gluing the strands together to create different shapes, you can make a model bridge that can hold a surprising amount of weight. Students of all ages compete in spaghetti bridge-building contests every year. Part of the fun in building a spaghetti bridge is adding weight to it until it collapses in a shower of spaghetti pieces. To build a bridge out of spaghetti, adopt the following steps:

Step 1: Assemble a structure that will support the ends of your bridge. You can build a bridge across two, equally tall tables or build a structure out of wood to place your bridge on.

Step 2: Design your bridge on a sheet of graph paper first. Cover the paper with a clear plastic film, such as plastic wrap, and use it as a template. Lay the spaghetti strands over your drawn design to cut them to the right length and glue them together.

Step 3: Choose your adhesive. Although the photo shows mini marshmallows, epoxy is the ideal solution for maximizing the strength of your bridge. Epoxy dries up firmly and will provide the best support for your bridge

Step 4: Build your bridge by assembling your trusses. Trusses are triangle-shaped support beams that attach to the roadbed of the bridge on either side. Attach the trusses to each other with glue.

Step 5: With the bridge assembled, carefully position your spaghetti bridge over your support structure. Use a piece of cardboard to simulate the roadway.

Step 6: Add weights to the centre of the bridge, a little at a time. Coins provide a good source of weights. Keep adding weights until the bridge collapses

Calculate the sum of the weights before the collapse. Try an alternate design and see if you can better your performance.

There's lots of information out there on how to build a (better) spaghetti bridge, for example, try: http://blog.teachersource.com/2020/10/30/building-spaghetti-bridges/