BRIDGING THE GAP

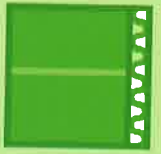
CHALLENGE

Build a bridge that is at least 12 inches long. It should be able to support at least 10 pennies in the middle.

GET YOUR GEAR

yarn

craft sticks



cardboard

tape

pennies

HINT: Bridges need support underneath or from above. Look at pictures of real bridges to see how they are built.

S There are many forces acting on real bridges. Can your bridge withstand more weight? Wind? An earthquake?

T Workers often use cranes and other machines to build bridges. What tools did you use?

E Some bridges are designed to move and change. Can you change your design to create a drawbridge?

A Look at famous bridges like the Golden Gate Bridge (San Francisco) or the Tower Bridge (London). Make your bridge beautiful too.

M Experiment with your design: try adding or removing supports or using different shapes or angles.

WHAT'S GOING ON?

There are many types of bridges. They all have different ways to support the weight.

Beam bridges have a straight surface that is supported by pillars. **Arch bridges** use a curve, like an upside down U, under the bridge surface to hold the weight. **Truss bridges** use connecting triangle shapes to support the bridge surface. **Suspension bridges** have two tall towers. Strong steel cables hang from the towers and hold up the bridge surface.