Building A Suspension Bridge

To get an idea of what you are building, look at the model bridge created by your teacher. Place the shoebox lid on your desk. This will be where you will build your bridge.

**Step 1: Build Your Towers**

1. You will need to get 4 piers from the supply table.
2. Peel back the paper of the cup so you can see your concrete pier.
3. Place two piers so that they are side by side.
4. Glue a popsicle stick to the top so that the two piers are connected. Use a binder clip to keep your popsicle stick in place on both sides.
5. Using your ruler, measure 2 inches from the top of each popsicle stick. Mark 2 inches with a pencil on both piers.
6. Take another popsicle stick and glue it where you made your marks. Use a small binder clip on both sides to hold your popsicle stick in place.
7. Do the same thing to the other two concrete piers. When you are done, allow your concrete piers to dry. Set it aside.

**Step 2: Build your Deck**

1. Get 1 strip of cardboard from your teacher. The strip will be 14 inches long and 2 inches wide. Measure to make sure the cardboard is accurately cut.
2. Count out 20 popsicle sticks from the container.
3. Take them back to your seat and break them into 2 equal pieces.
4. Spread glue on the cardboard strip.
5. Place the broken popsicle sticks along the cardboard until the cardboard is completely covered. Set it aside and let it dry overnight.

**Step 3: Put Your Bridge Together**

1. Take the completed deck and place it on the bottom of the two towers. It will rest on the popsicle stick until you can get it suspended with the dental floss.

**Step 4: Adding the Main Cables**

1. Cut 2 pieces of yarn that are 20 inches long.
2. Pick up one piece of yarn and tape it to the left side of the shoe box lid. The tape will act as an anchor and hold the yarn in place. The yarn will be the main cables on the bridge.
3. Take the yarn and wrap it around the top of the tower popsicle stick. Wrapping it around the top stick will help it to stay in place.
4. Continue toward the right side of your bridge with the yarn. You will want it to be tight and not slack so that it will hang down towards the deck of the bridge.
5. When you get to the tower on the right side, wrap the yarn around the top stick of the tower like you did in step 3.
6. Tape the yarn to the right side of the shoebox lid to anchor it down. Cut off the extra yarn.
7. Move to the opposite side of your bridge and follow steps 1-6 with the other piece of yarn.
Step 5: Adding the Suspender Cables

*This will be the hardest part of the bridge building project.

1. Take a piece of dental floss and tape it to the bottom of the deck.
2. Wrap it over the main cable. Then, take it to the other side of the bridge by going under the bridge deck.
3. Wrap it over the main cable. Then, take it to the other side of the bridge by going under the bridge deck.
4. Continue wrapping the main cable with dental floss until the dental floss runs out. Tape it to the bottom of the bridge when you get close to the end of the dental floss.
5. If you run out of dental floss before you get to the end, get another piece and repeat steps 1 – 4 again.

When you have finished all of the steps, take the binder clips off and enjoy your completed suspension bridge.