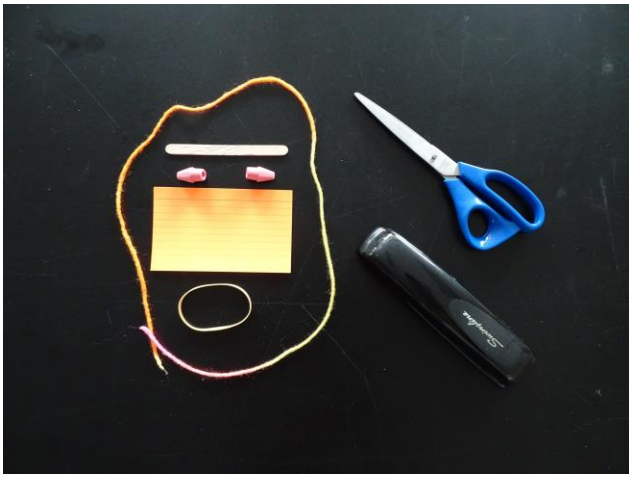
Bee Hummer

Materials:

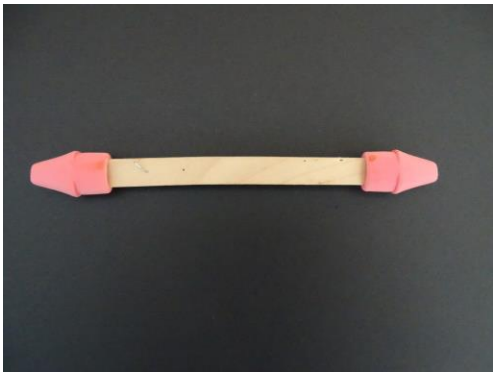
Included in Bag:
1 Popsicle Stick
2 Cap Erasers
Index Card
String (2 ft)
Rubber Band

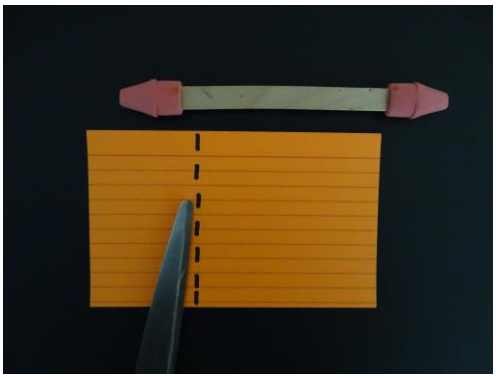


You Will also Need
Scissors
Stapler

Making and Using the Bee Hummer:

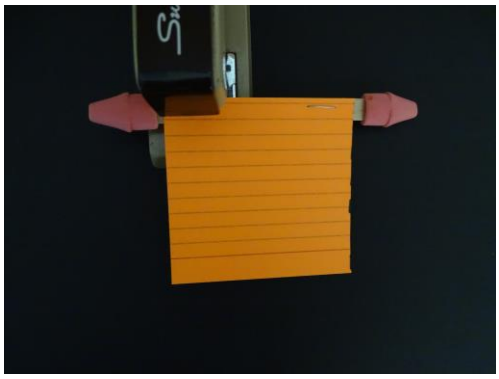
Step 1:
Put a cap eraser on each end of the popsicle stick.

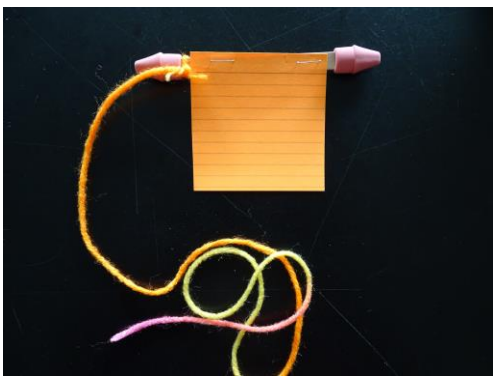




Step 2:
Trim the index card so it will fit between the space on the popsicle stick between the erasers.

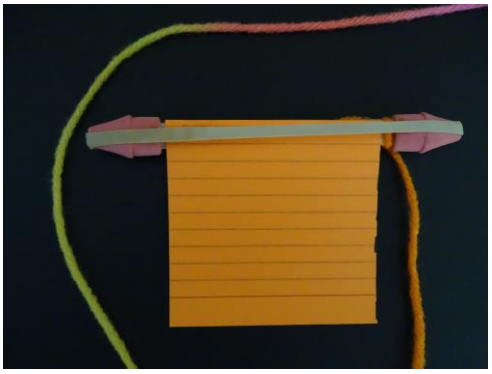
Step 3:
Staple the index card to the popsicle stick. It should hang out about 2 inches from the stick.





Step 4:
Take the string and tie it on the popsicle stick near one of the eraser caps.

Step 5:
Stretch the rubber band around the popsicle stick from one eraser to the other. Make sure the rubber band fits tightly.



Step 6:
Hold the end of the string and swing your bee hummer in a circle. You should hear a sound like bees buzzing.

What's going on?

When you spin your Bee Hummer, moving air makes the rubber band vibrate. The air flowing over the rubber band makes it vibrate the same way that wind blowing over a flag makes it wave.

Sound is produced by those vibrations, in the same way that vibrating strings on a guitar or violin produce sound. The index card amplifies the sound.

If your Bee Hummer doesn't seem to be working, check to be sure that the rubber band isn't twisted, and that the string isn't touching the rubber band. Either of these things could stop the sound.

Experiment:

Experiment by changing how the Bee Hummer is made and used. What happens when the index card is slit, curved, or folded? How does the sound change if you change the size of the rubber band? If you spin your Bee Hummer faster or slower? Use a longer or shorter length of string? You can also modify the materials: Try using balls of clay on each end instead of erasers, or several thin rubber bands instead of one thick one.

Follow this link to watch a video on how to make your Bee Hummer:
https://vod.video.cornell.edu/media/Take+%26+Make+-+Bee+Hummer/1_w6sytp2c

Cornell Center for Materials Research (CCMR) works with families to improve the quality of STEM programs. The funding from the National Science Foundation enables CCMR to provide resources for the Take and Make STEAM kit program.

You can help out by taking a short, anonymous survey using the link below:
https://cornell.ca1.qualtrics.com/jfe/form/SV_ehXj6hCQQFNaL2K

Taken from the Exploratorium Teacher Institute
https://www.exploratorium.edu/snacks/bee-hummer