

## Rubber Band

## Powered Helicopter

# STEM SUPPLY LIST

- Disposable cup
- Straw
- Rubber band
- Paperclip
- Small beads
- Piece of plastic file.
- Super Glue
- A pair of Scissors
- Paper tape
- Wood Dowel/Craft Stick
- Pliers
- Thumb pin



Source: <https://paksc.org/pk/science-experiments/physics-experiments/make-rubber-band-powered-helicopter/>

<https://youtu.be/V03YoEgqBAc>

# Rubber Band

## Powered Helicopter

# INSTRUCTIONS

### Step 1: Making of Propellers

Take a disposable cup and cut 4 propeller blades out of it, they must be mirror image of one another in pairs.



From the plastic file, cut a strip of 1cmx10cm and divide it into 4 pieces i.e. 2.5cmx1cm. With the help of paper tape fix the piece to the propeller leaving half of it, fix all 4 in the same manner.



# Rubber Band

## Powered Helicopter

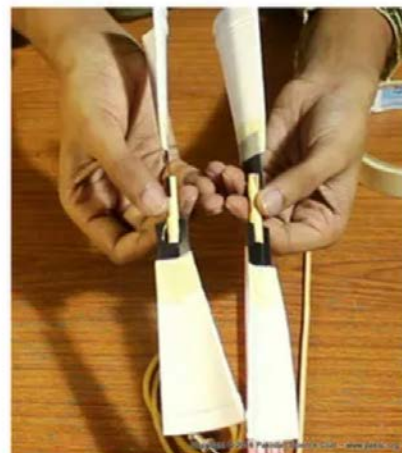
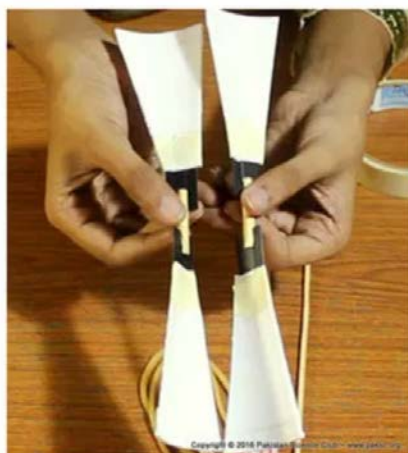
Cut two 1 inch pieces of craft stick with the help of scissors or cutter.



Fix two propeller wings to a piece of craft stick in such a way that they should be in opposite direction and slightly tilted.



Fix the other two wings in the same manner and put some super glue in both propellers (note that the orientation of both propellers should be opposite in direction).





# Rubber Band Powered Helicopter

Cut the blades of lower propeller from the end i.e. 1 cm.



## Step 2: Making of Propelling Mechanism

Take a paper clip and with the help of plier straighten it and at the one end make a hook.



# Rubber Band

## Powered Helicopter

Take one of the propeller assemblies and with the help of thumb pin, make a hole in the center of the craft stick portion of the propeller.



Cut a small piece of 1cm×1cm from the plastic file and make a hole in the center of it by placing it on the straight end of the paper clip.

Now thread the paper clip through the 2 beads so that they are now on top of the plastic file piece.



Push the paperclip through the hole you made earlier in the propeller. Bend the end of the paper clip to secure it and add super glue making sure the beads still move freely.



# Rubber Band

## Powered Helicopter

Tie two rubber bands together to make a chain, pass the rubber band through the straw.



Hook one end of the rubber band on to the paper clip and pass the other propeller through the other end of the rubber band loop and tape to secure.



# Rubber Band

## Powered Helicopter

### Step 3: Let's Fly!

How it works!

Energy is stored in the sport rubber by winding the propeller. When flown, the rubber band rapidly releases its energy by unwinding, which turns both the propeller blades. As the propeller spins rapidly, it begins to create lift by pushing air downward. With enough energy, the helicopter fly in whatever direction it is pointing.

