

# FLIGHT TEST LAB

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## EXPERIMENT 2: PROPELLER

A car moves because its wheels push the ground away. An airplane doesn't have wheels, but its propeller moves it forward.

Test the propeller by blowing on it. It turns when it is pushed by the wind. So, if it were to be turned by an engine, it should push back on the air! Let's assemble the propeller shaft.

1. Guide the rubber band through the black straw. This works best when you cut a slit in the end of the other straw, hook the rubber band to it, and slide it through the black straw.
2. Fix the rubber band at the end with the cardboard piece from the die-cut sheet as shown. Insert the propeller into the straw at the other end.



## EXPERIMENT 5: ARTIFICIAL HORIZON

Build a simple model of an **artificial horizon**, a device that pilots use to see if their planes are horizontal in the air when they are flying in darkness or through fog.

1. Fold the disc and glue the two sides together. Tape a penny in the spot indicated.
2. Put the brass fastener through the hole in the outer casing and put the disc on it. It must spin easily. Glue the marked faces. The fastener should pass through to the other side.
3. Tilt the finished model right and left. The horizon line changes as it would in a real airplane as gravity pulls the penny downward.

