

# WORLD RECORD PLANE

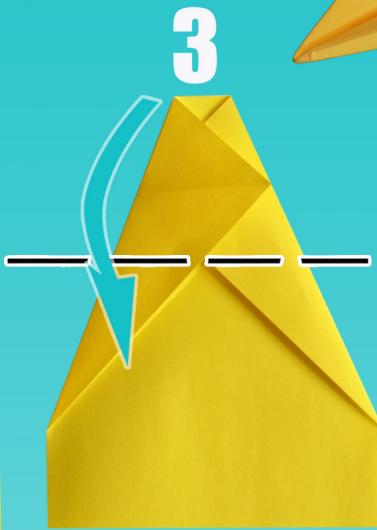
Holds the Guinness World Record for Paper Aircraft  
Distance: 226 feet and 10 inches (69.14 meters).



After making diagonal folds, fold the right edge to the diagonal crease.



Fold the left side over.



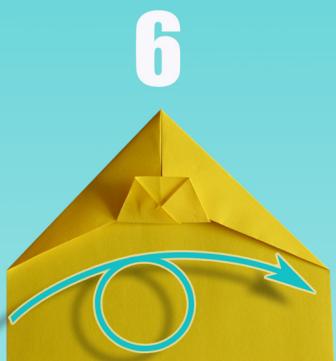
Fold across the center of the diagonal creases.



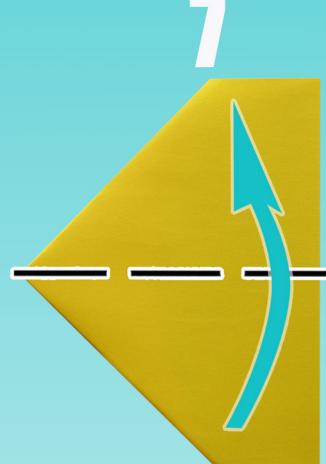
Follow the creases to fold the corners to the center.



Fold the small flap over the two corners.



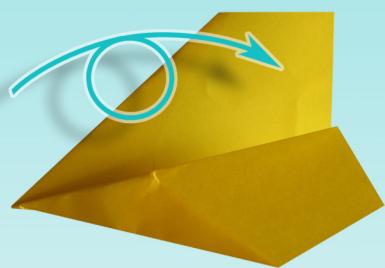
Flip the plane over.



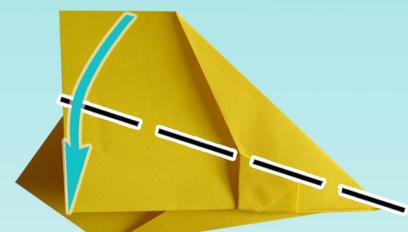
Fold the plane in half.



Make the wing crease. The top edge just touches the corner. The crease starts at the nose.



Flip the plane over to fold the other wing.



Make the wings match.



Angle the wings upward. That's called Positive Dihedral Angle.



Bend the rear edge of the wing upward a little. That's up elevator.

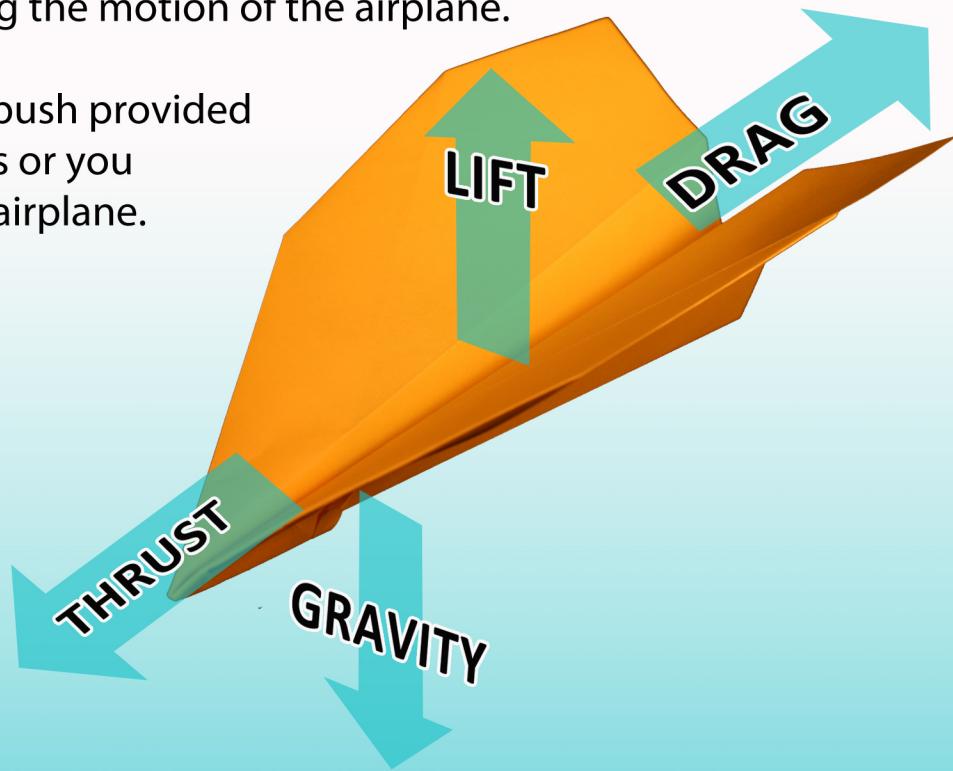
# Basic Forces

**Lift** is the upward force on the plane. Lift is generated by the shape of the wing, and by the angle the wing is tilted into the airflow. A lower pressure is formed on the top of the wing, and airflow is re-directed downward at the back of the wing. Lift is the result.

**Gravity** keeps us anchored to the Earth. Airplanes need to balance the gravity forces with lifting forces to achieve stable flight.

**Drag** is the air resisting the motion of the airplane.

**Thrust** is the forward push provided by motors, jet engines or you throwing your paper airplane.



Every airplane is always being slowed down by drag. Powered planes just throttle-up (give the engine more fuel) to regain speed. Gliders need to be designed to gain speed on their own. More lifting surface toward the rear of a paper airplane helps point the nose down. Gravity makes the plane speed up. When the plane regains enough speed, sufficient airflow is reflected off of the up elevator adjustment to push the tail back down.

The balance between the **Center of Gravity** and **Up Elevator** create a stable flight. Left and right rudder control or correct turning.

