

# How Airplanes Fly!!!

*By Elias*

## Who Discovered Lift?

*Airplanes don't fly by magic. People studied for hundreds of years how wings and air help planes fly. Sir Isaac Newton (1687) discovered the laws of motion that explain forces like lift, thrust, and drag. Daniel Bernoulli (1738) found that fast air creates low pressure, which helps lift wings. Otto Lilienthal (late 1800s) tested gliders and proved wings can lift a person. The Wright Brothers (1900s) built the first airplane that really flew using lift and thrust.*

## How is Lift Made?

*Lift is the force that pushes the airplane up. Wings are shaped so air moves faster over the top and slower underneath. This makes higher pressure under the wing, which pushes the plane upward. Without lift, airplanes would never leave the ground. Lift is like an invisible hand holding the plane in the air.*

## What Would Happen Without Lift?

***If there was no lift, airplanes could not fly. They would just stay on the ground. Lift is very important for all airplanes to fly safely.***

## **Other Forces of Flight**

***Thrust is the force from the engines that pushes the airplane forward. Drag is the force from air that pushes back and slows the airplane down. Weight is the force of gravity pulling the airplane down. Pilots must make sure the plane isn't too heavy so it can take off safely.***

## **Fun Facts**

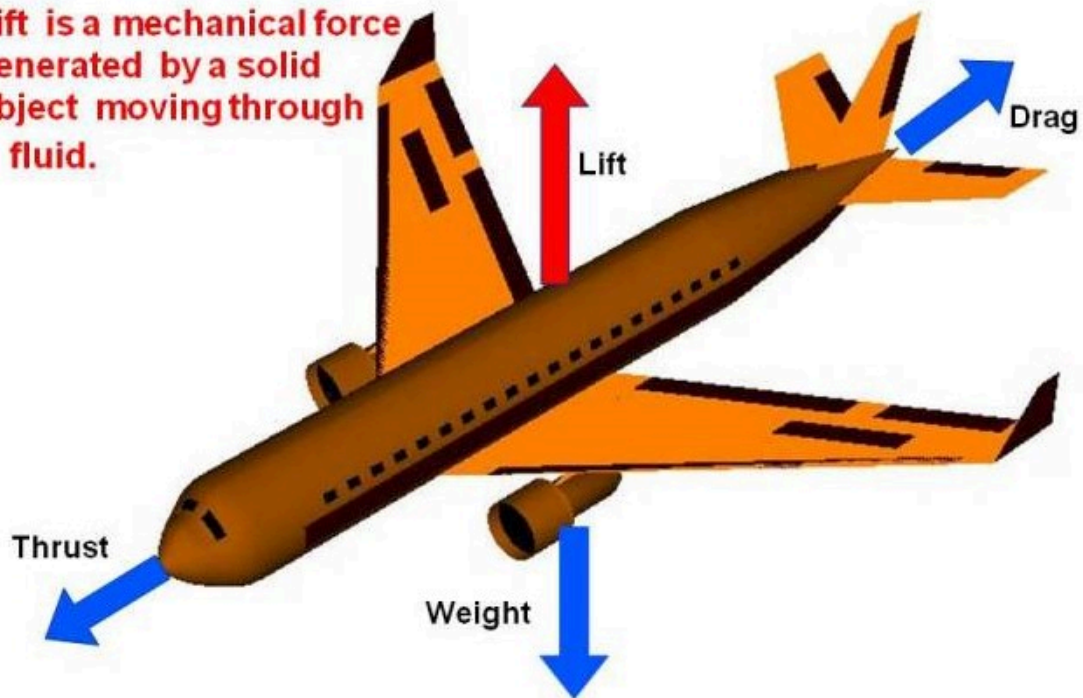
***The Wright brothers' first flight in 1903 lasted only 12 seconds! Big airplanes can lift hundreds of people and tons of cargo. Birds inspired early scientists because their wings work like airplane wings.***

## **Conclusion**

***Lift is the invisible force that lets airplanes rise into the sky. Along with thrust, drag, and weight, it makes flight possible. Without lift, planes could never fly!***

# Some pictures of lift and more forces of air!

Lift is a mechanical force generated by a solid object moving through a fluid.



# Thank You!

***Thank you for listening  
and letting me share  
how airplanes fly. I hope  
you learned something  
cool about lift and the***

***forces of flight!***

