The 4 Forces

The 4 forces that can be in an effect are thrust, drag, lift, and gravity/weight. These forces can be in effect to the glider. The drag can push the glider back and slow down the time and have less distance. Or the thrust can make the glider go farther.

Thrust

Thrust: means the force that allows something to move in the direction that it wants to. So if you're going forward in a car then it is thrust. And even if you want to go reverse it is still thrust.

Lift

Lift: means the force that pushes something upwards or flies. A plane creates lift to fly.

Drag

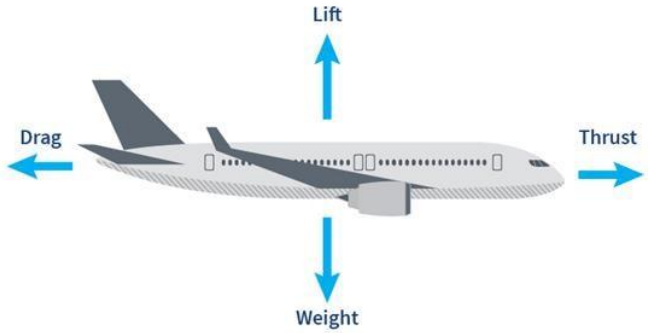
Drag: means the force that is opposite to thrust. So if you're going forward but the wind pushes you back that is drag. But if you are going up a hill and you go down it is not drag but gravity.

Gravity/weight

Gravity/weight: is the force that is opposite to lift. It pulls something downward. The ball is falling to the ground because of gravity.

2 important things are

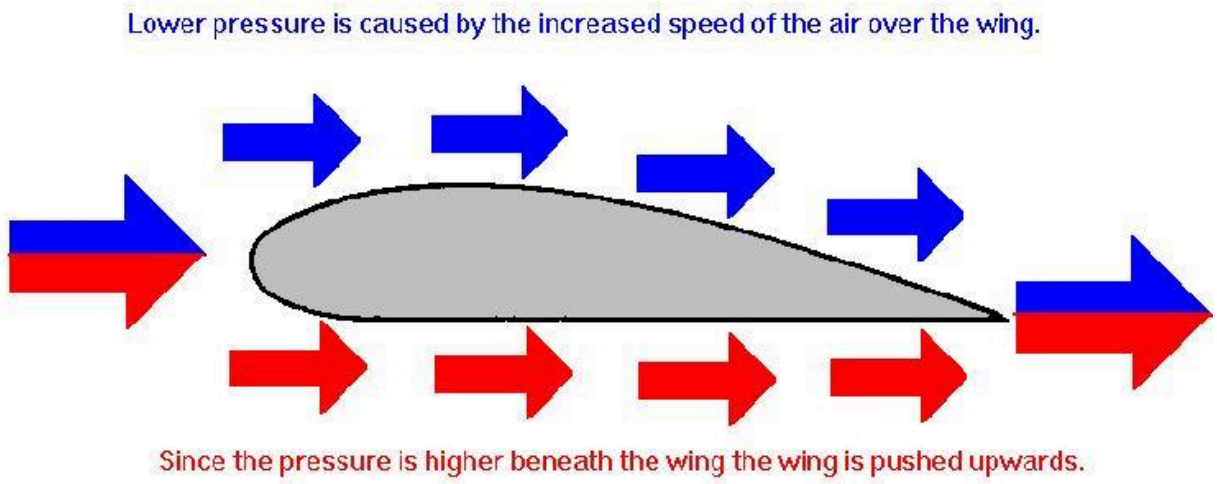
- Lift has to be greater than Gravity/Weight to go up
- Thrust has to be greater than Drag to go in the direction you want to



Bernoulli's Principle

Bernoulli's principle is related to lift. To make lift the top has to have a bump and the bottom is straight. The slower something goes the more air pressure it has. Since the bottom is straight the air moves slower than the top making higher air pressure. This causes the lift.

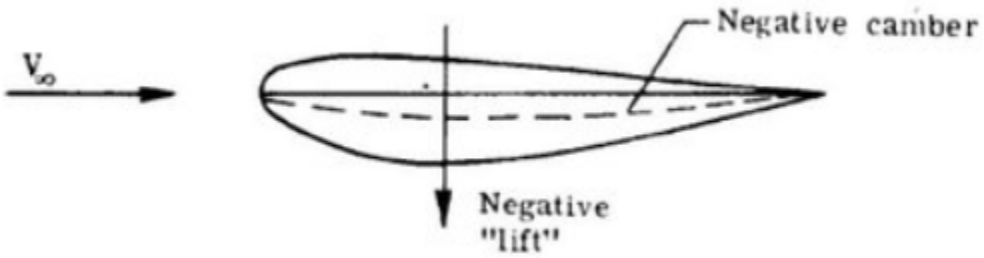
A great example of Bernoulli's principle is an airplane wing. It is an airfoil shape like Bernoulli's principle.



This is in the shape of an airplane wing.

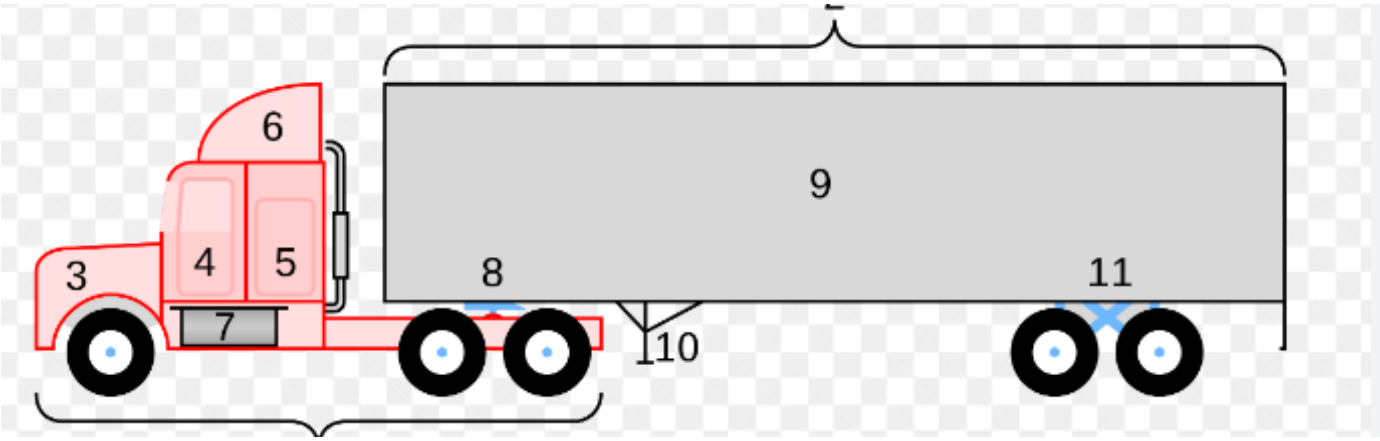
But the shape must be on an angle. Then only Bernoulli's principle works.

Another example is a race car. The spoiler at the back of the car is an airfoil shape. But it is flipped over so the high air pressure is at the top. Then it stays on the ground because the high air pressure is at the top.

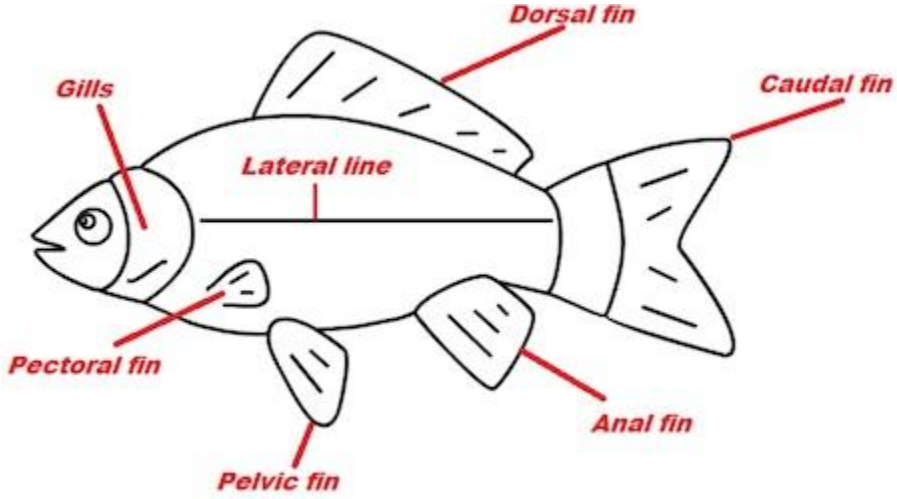


Streamlining

The definition of streamlining is making the tip of an object sharp so it can decrease drag. Semi-trucks have a sharp tip so that the drag doesn't tip them over. And they have a not-so-sharp vertex so the air can flow down.

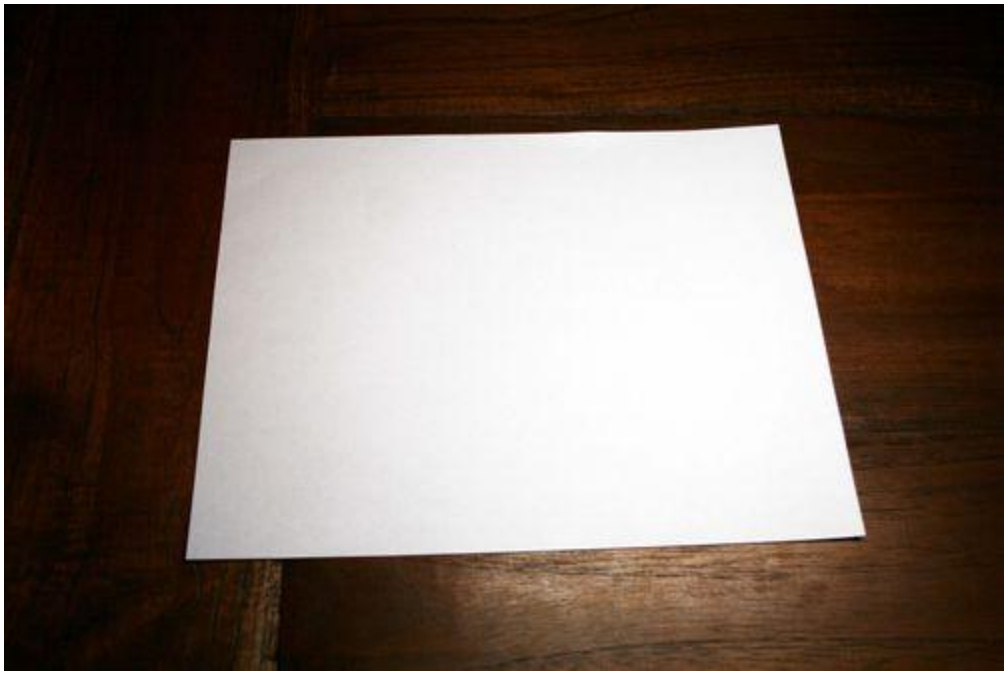


If something is not streamlined then the drag can push it back. That is why when you run into a swimming pool it is very hard. But when you swim you go faster. This is because when you're swimming you are streamlined so it is easier. Fish are also streamlined. They have a sharp tip. The water at the end gets pushed down.



The least streamlined body is a paper that is straight up and down.

And the most streamlined is a flat paper. The thin side should be pointing out.



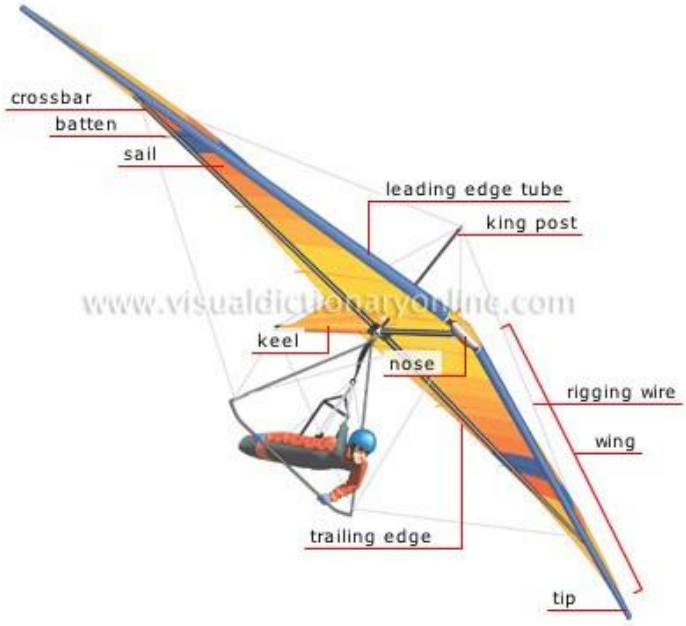
Gliders

What are gliders? Gliders are like a pair of wings. But they are also like parachutes. Except they don't use drag, they use thrust. They propel someone and also help someone get to the ground.

There are 2 types of gliders

- Hang gliders
- And paragliders

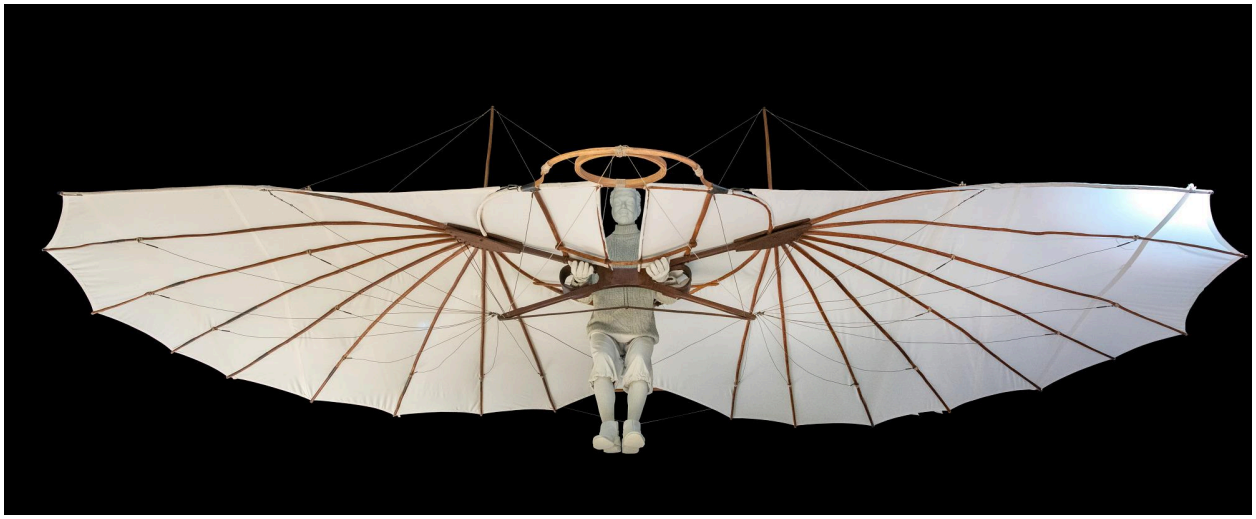
Hang gliders and paragliders both use thrust and lift to work.



History of Hang Gliders

The first person to invent hang gliding was Albrecht Ludwig Berblinger. He made the glider in the early 1810s. His gliders were put on like the wings of a bird. And they were circular.

Later on in the 1890's his idea got stolen. The German pilot Otto Lilienthal stole his idea. His glider was the same shape as Albrecht Ludwig Berblinger.



In 1950 the American engineer Francis Rogallo developed what now is the glider. He made it for NASA. It was to be put into a space capsule. He made the triangular-shaped glider.

Basic Principles of Hang Gliders

There are many principles of hang gliding. There are 2 basic principles of hang gliding. These are, you have to start at a high point, and you take off by foot.

Since hang gliders aren't powered by an engine. They can't fly but if they start on a mountain or a cliff they can jump off because they maintain their flight by an airfoil (wing).

The second basic principle is you have to do it on foot. Since it is not like parachuting, where you are free-falling and the parachute brings you to the ground. But you need a running start so you can make thrust. And maintain the thrust. But if you were to just jump down you can't make the thrust because you don’t have enough speed.

And here is how a hang glider flies. It is using Bernoulli’s principle. The top of the hang glider has a bump so the air has to go faster and the air below goes slower. Faster air means low air pressure and slow air means high air pressure pushing you upwards.

History of Paragliders

David Barish made the first paraglider. It was not very successful. He made it in 1960. And it started on foot.

Later on, paragliding was discovered in French territory. André Bohn joined a club by making a para flight.

The Basic Principle of Paragliding

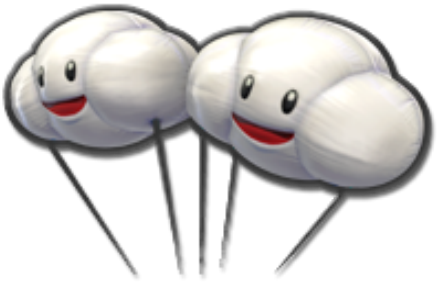
To fly using a paraglider you need to get off the ground. This is a lunch. To launch you need to face the wind and run. And then pull the wing. This will cause the paraglider to inflate with air. The final step is running off the slope. And voilà you are now flying. You remember what Bernoulli's principle is right? Well, the same thing is happening with the paraglider. The top of the paraglider has a bump so the air has to go faster and the air below goes slower. Faster air means low air pressure and slow air means high air pressure pushing you upwards.

All Gliders from Mario Kart 8 Deluxe

All the Mario Kart Gliders look different so these are all the gliders.

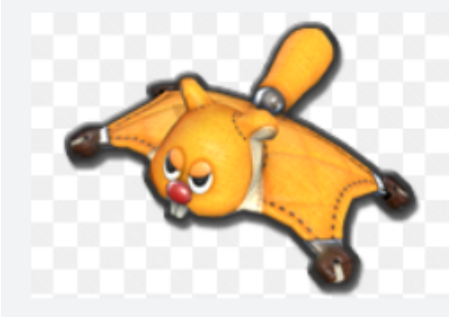
- This is the Super Glider.

- The Cloud Glider



- Wario Wing

- Waddle Wing



- Peach Parasol

- Parachute

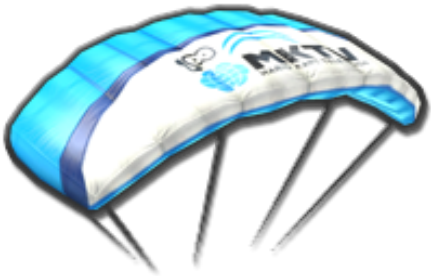
- Parafoil

- Flower Glider

- Bowser Kite

- Plane Glider

- MKTV Parafoil



- Gold Glider

- Hylian Kite

- Paper Glider

Materials

- Canvas
- Wire
- Glue
- Pliers
- Hammer
- Scissors
- Wrench
- Rc car
- Computer
- Markers
- Paint
- Crayons
- Pencil
- Eraser
- Measuring Tape
- Coffee Table