Co2 Cars
Aerodynamics

• Is the study of how air flows over and around an object.
Aerodynamic Properties of Shapes

**Wedge** - A good aerodynamic shape because of its long gradual slope. Which allows the air to travel over the surface easily.

**Rectangle** - A very bad aerodynamic shape because of its high flat side. Which blocks the air from traveling around the surface.
Aerodynamic Properties of Shapes

Sphere - A very good aerodynamic shape because of its symmetrical shape. Which allows air to flow over its surface with very little disruption to the air stream.

- A combination of basic shapes will yield the best results.
Weight Distribution

This equation has to do with how much weight is over the front and rear of the vehicle.

Perfect weight distribution

50 % 50 %
Improper weight Distribution
Forces That act upon a Co2 cars

- **Lift** - an upward force resulting from air being forced underneath a car.
- **Drag** - air resistance that pushes against a vehicle.
- **Thrust** - a forward force produced by an engine or turbine.
- **Gravity** - force acting on a car trying to hold it down to the earth.
Forces

Gravity

Thrust

Lift

Drag
Weight to thrust ratio

- When a car is too heavy, it is hard to get into motion but once in motion it stays in motion easily.
- When a car is very light, it is easy to get into motion, but it requires constant thrust to stay in motion.
- Finding a middle ground is key. Can’t be too heavy or too light.