

## Scientific Background Knowledge.

### Methods of Propulsion

- Wind Power

Energy provided by air movement. On Earth the sun heats up the land and this results in winds forming.

Could be simulated by a hairdryer.

- Stored Energy (Potential Energy)

Energy that an object has because of its position, stretch (elastic bands) or pressure. For example a bike at the top of a hill has stored (potential) energy which is transformed into kinetic energy (movement energy) as the bike starts to go down the hill.

Could be simulated by an elastic band which has elastic potential energy

- Electrical Energy

Generators or chemical reactions (e.g. batteries) transform one type of energy into electrical energy.

Could be simulated using a battery.

### Streamlining

- A moving object will experience resistance from fluids like air and water. This resistance is called drag. Streamlining the shape of cars, aircraft and boats can reduce drag. For example a car with a roof rack carrying bicycles is less streamlined than the car without the rack on. You can test this by noting the amount of fuel used over a certain distance. With the roof rack on more fuel will be used! Streamlined objects travel faster and further on the same amount of fuel. Other examples include racing cars, dolphins and speed skaters suits.