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A fiery metal giant

1.6 t Lift-off weight of CAT-1 satellite launched on the maiden flight

the weight of 20 buses

Total weight at lift-off, of which .90% is fuel

47 m the height of the Arc de

Triomphe:



over 2.5 times the thrust of an A380



the diameter of a 2500-year-old cedar

### VIKING ENGINES

4 x 900 kg rocket engines

3 m high, each delivering 80 tonnes of thrust (2.5 million HP).

## Maiden flight on 24 December

1979

Ariane 1 was a three-stage launcher, capable of flying a payload towards the geostationary orbit, located at an altitude of 36,000 km. This successful launcher paved the way for the Ariane launcher series, whose performance has improved continuously over the years.

#### Why design staged rockets?

Fairing

3rd stage

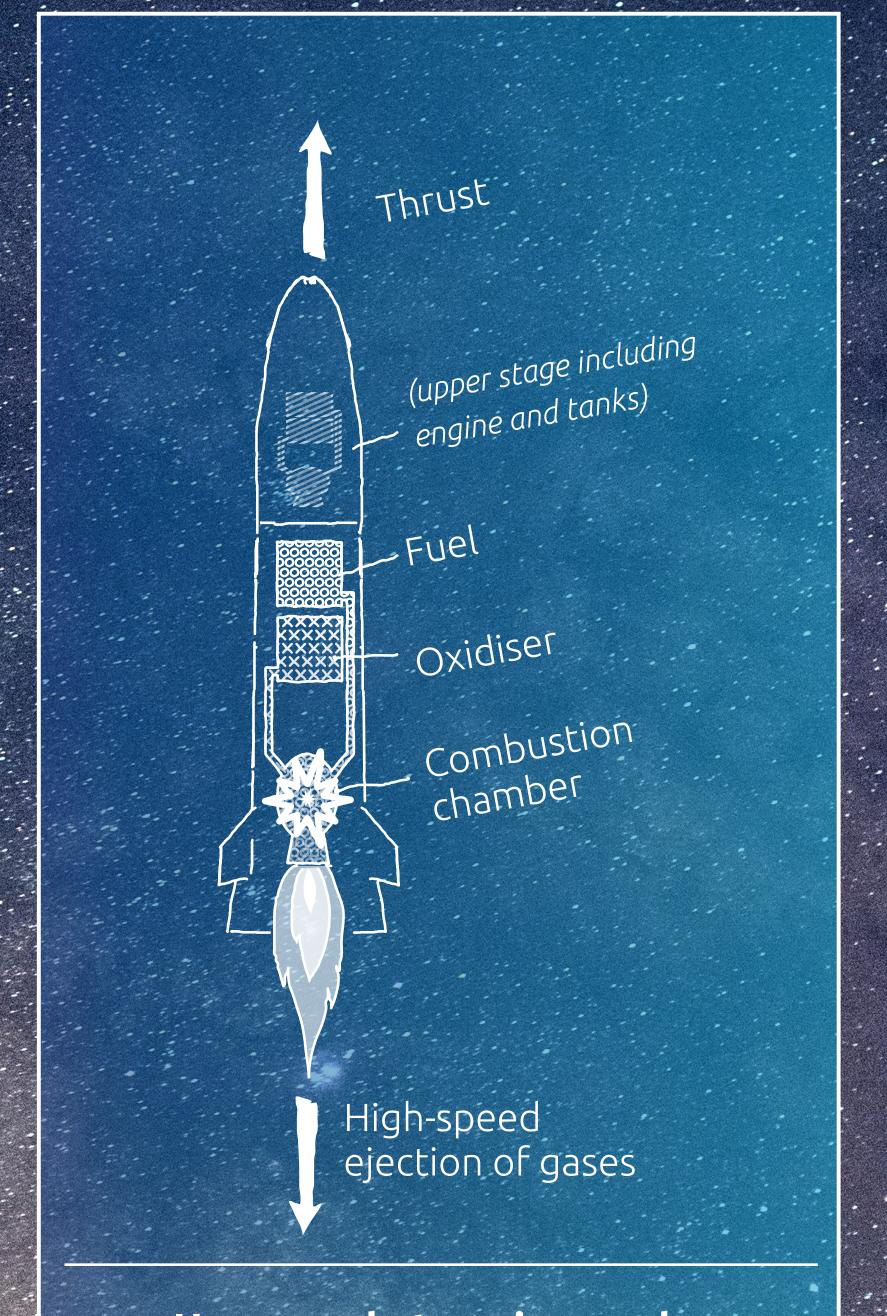
2nd stage

st stage

esa

cnes

The advantage of separation into several stages is that the rocket can lighten its load during the flight by jettisoning the propellant-empty stages.



## How a rocket engine works

A rocket is propelled by the ejection of accelerated gases, in accordance with the law that for every action, there is an equal and opposite reaction. These gases result from the controlled explosion of fuel and oxidiser, known as propellants.

The greater the flow of ejected gases, the greater the propulsion power, or thrust.

