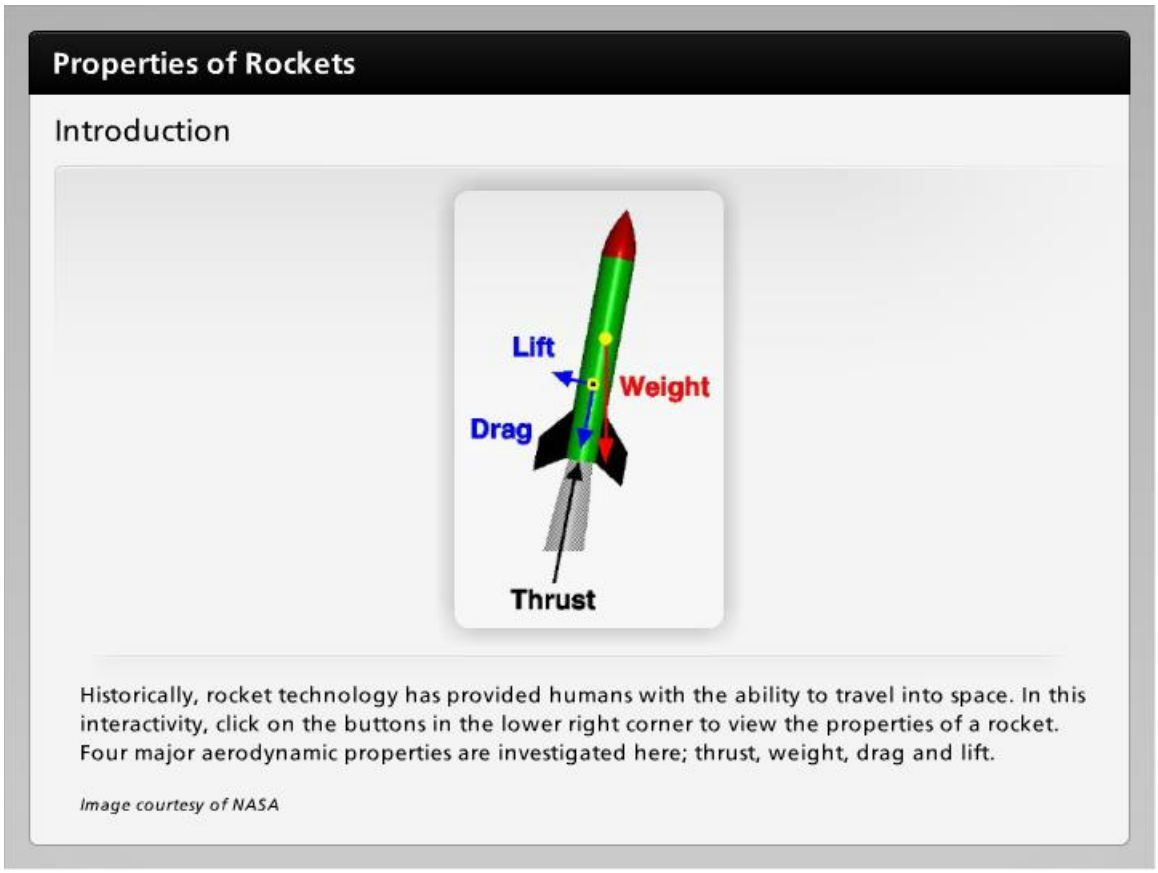
Module 10: Astronomical Organizations and Space Exploration
Topic 1 Content: Properties of Rockets Notes

Introduction



Historically, rocket technology has provided humans with the ability to travel into space. In this interactivity, click on the buttons in the lower right corner to view the properties of a rocket. Four major aerodynamic properties are investigated here; thrust, weight, drag and lift.

Image courtesy of NASA

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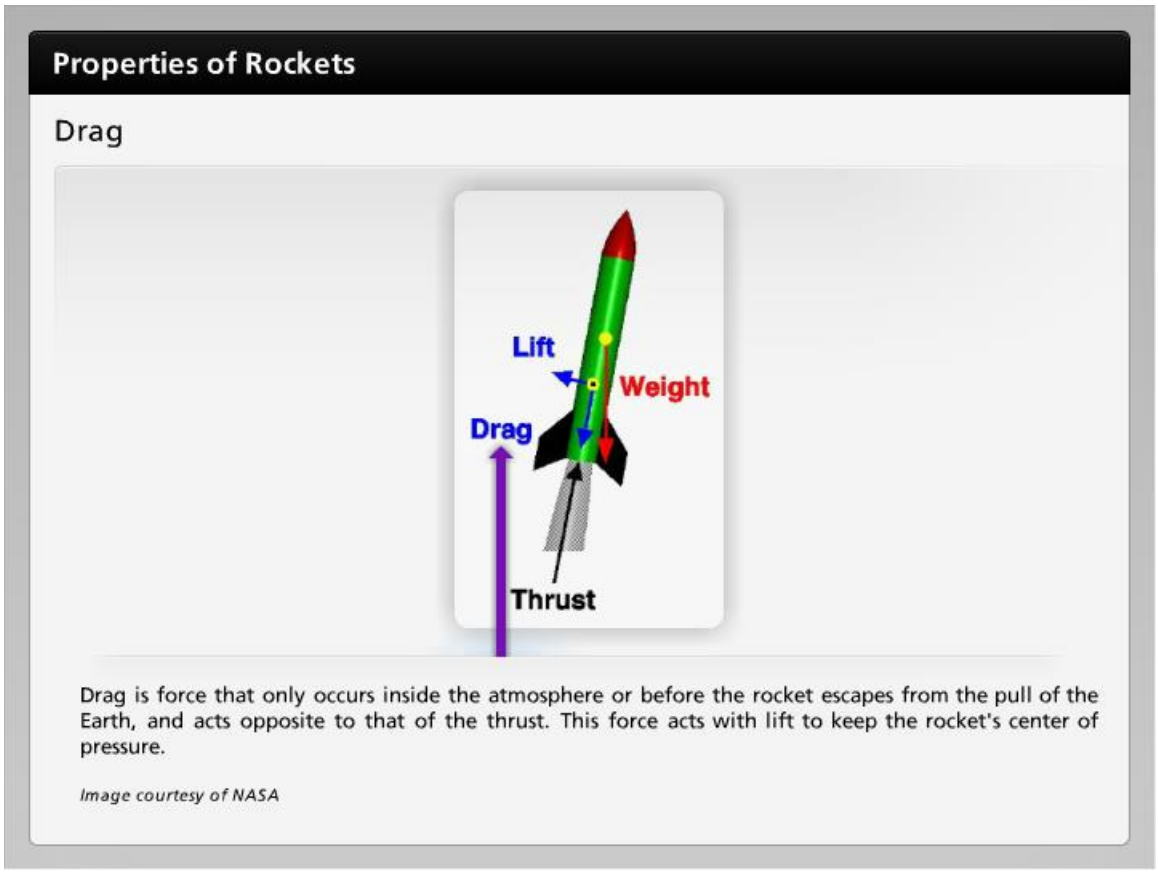
Drag



Drag is force that only occurs inside the atmosphere or before the rocket escapes from the pull of the Earth, and acts opposite to that of the thrust. This force acts with lift to keep the rocket's center of pressure.

Image courtesy of NASA

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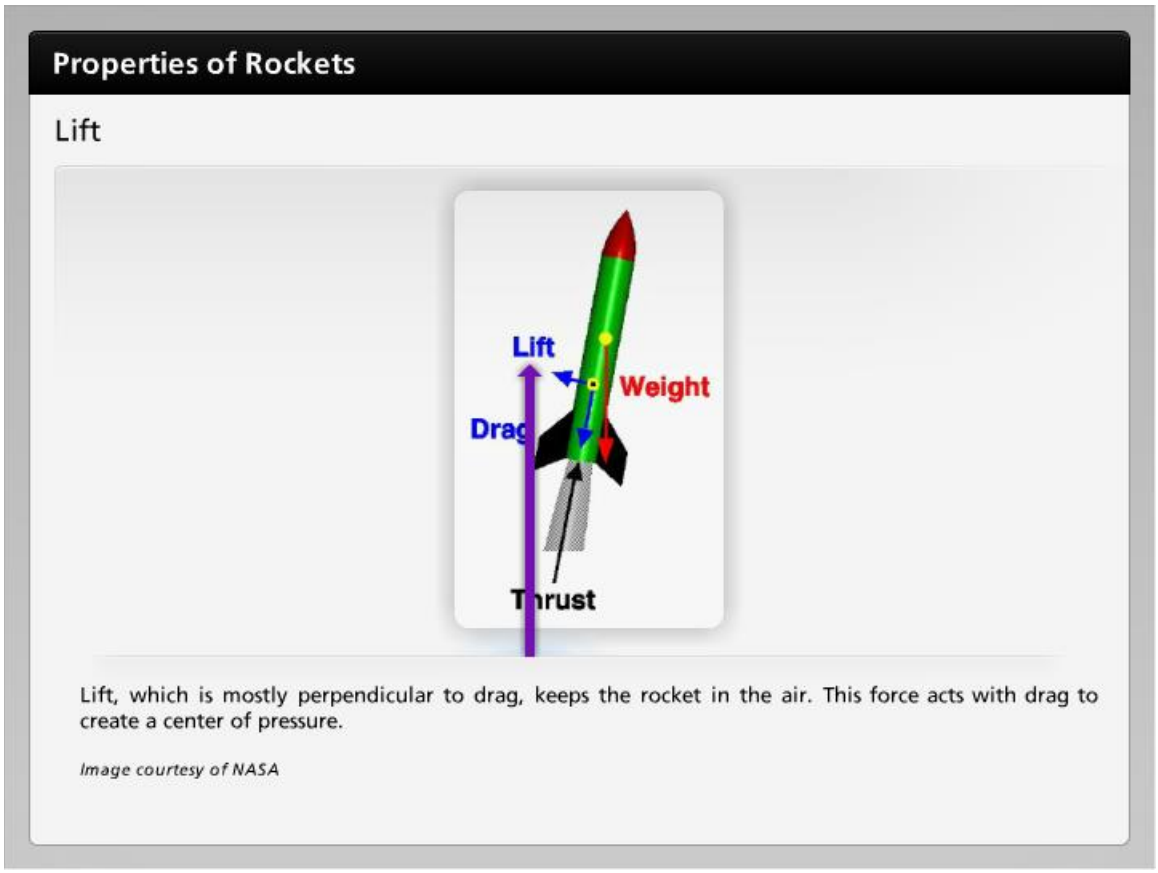
Lift



Lift, which is mostly perpendicular to drag, keeps the rocket in the air. This force acts with drag to create a center of pressure.

Image courtesy of NASA

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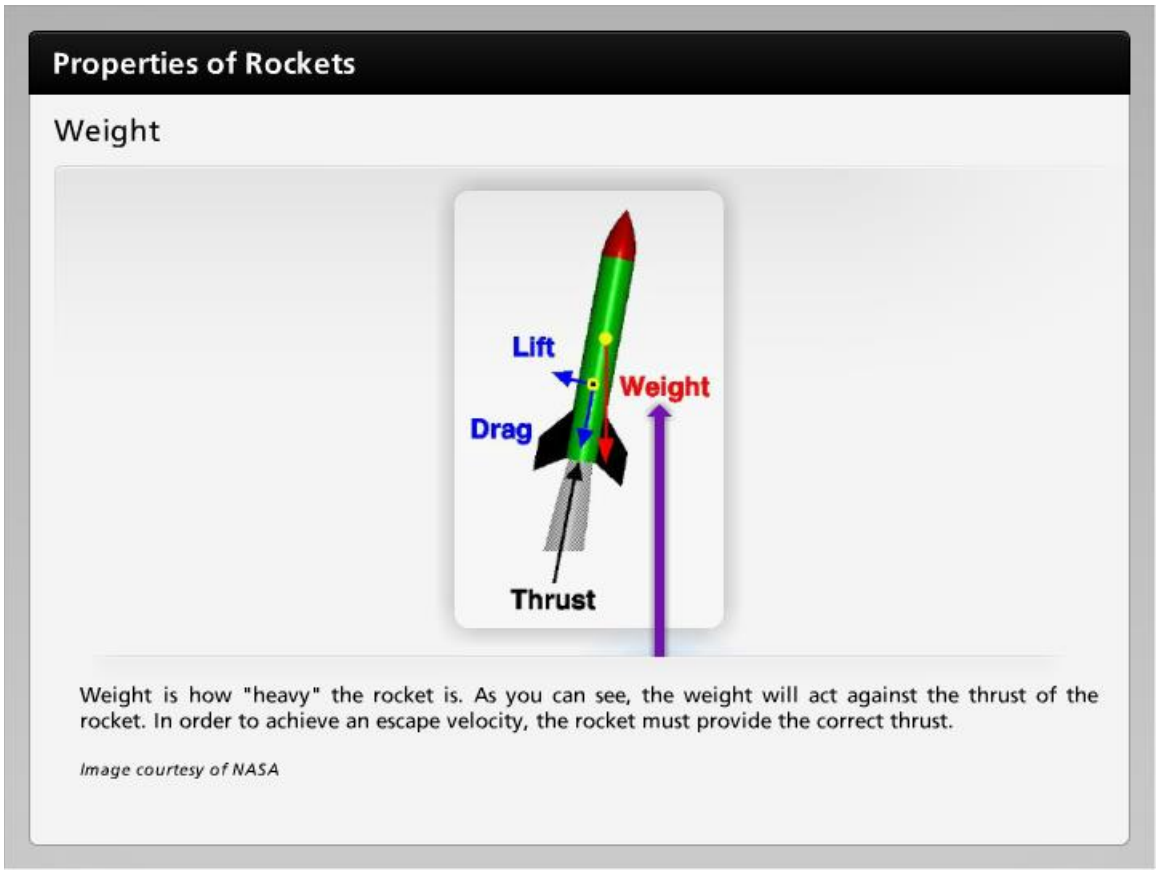
Weight



Weight is how "heavy" the rocket is. As you can see, the weight will act against the thrust of the rocket. In order to achieve an escape velocity, the rocket must provide the correct thrust.

Image courtesy of NASA

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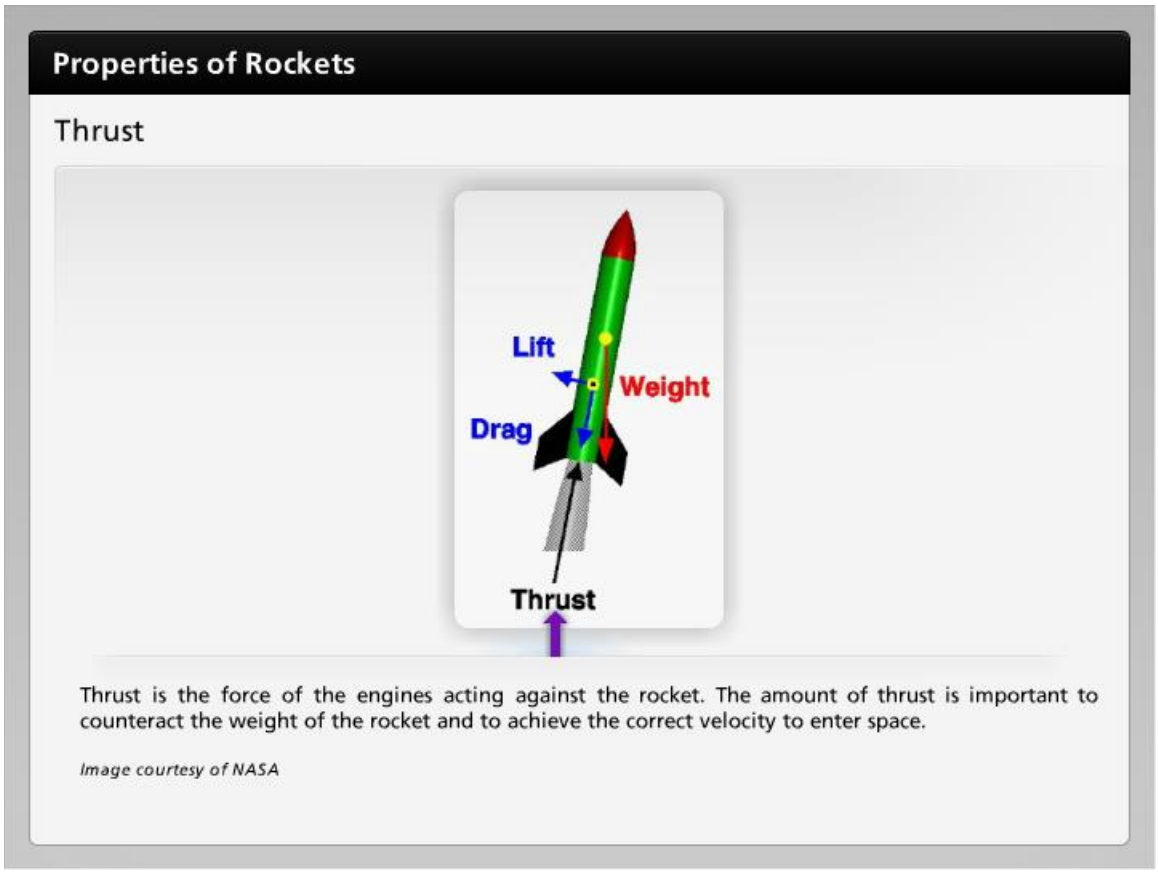
Thrust



Thrust is the force of the engines acting against the rocket. The amount of thrust is important to counteract the weight of the rocket and to achieve the correct velocity to enter space.

Image courtesy of NASA