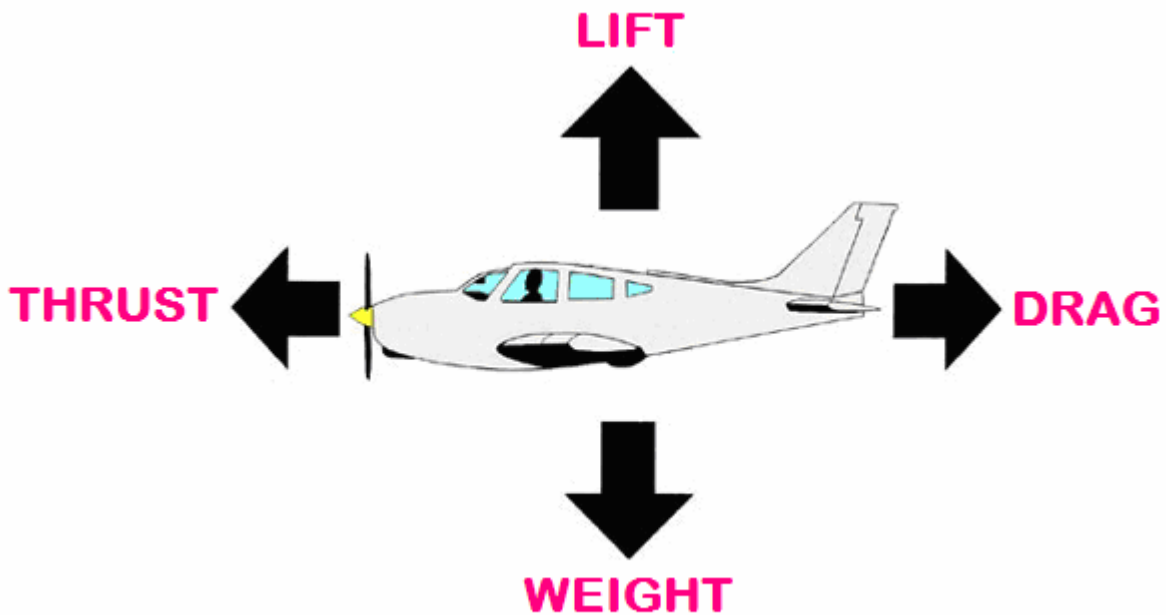


FLIGHT: Lesson 4

This webpage found at:
<http://pa4h.cas.psu.edu/Curricula/AerospaceSupp/Activities/Flight/Overview/FlyLesson4.htm>

Types of Forces in Flight



<http://www.aeromuseum.org/Education/Lessons/HowPlaneFly/HowPlaneFly.htm>

➤ **Weight** – the force Earth’s **GRAVITY** has on an object.

WEIGHT can be changed one of two ways:

- On Earth where **GRAVITY** is fairly constant, an object can lose **MASS** to lose **WEIGHT**.
- An object can stay the same **MASS** and lose **WEIGHT** by moving to a place with less **GRAVITY** (i.e. the moon or Mars).

➤ **Lift** – the force air has on an object (wing) that opposes **GRAVITY**. This counteracts **WEIGHT**.

- When **WEIGHT** and **LIFT** are balanced, an object remains at the same height (does not fall)
- When **LIFT** is greater than **WEIGHT**, an object rises.
- When **LIFT** is less than **WEIGHT**, an object falls.
- **LIFT** is generated by the wings of an aircraft. (See [Lesson 3: How do birds and planes stay in the air?](#))

- **Drag** - the force air has on an object that resists that object's movement.
 - **Thrust** – the force needed to move an object forward against air's **DRAG**.
 - On airplanes, this can be from propellers or jet engines.
 - On birds, the wing not only generates **LIFT** but also **THRUST**.
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Web design: Victoria Kramer. This page was last updated on September 26, 2005.
There are no plans for future updates.