

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

Introduction to Aerospace Engineering

Learning Objectives

- What is aerospace engineering?
- Desirable properties of an aircraft
- How do aeroplanes fly
- Careers in aerospace engineering

Lesson Plan

Slide	Topic	Description	Time
1-3	Introduction to Aerospace Engineering	Introduction to aerospace. Categories of aerospace engineering. Difference between aeronautical and astronautical engineering. Examples of crafts.	10
4	Why do aeroplanes fly	General discussion and thought provocation for students on why aeroplanes fly	5
5	Activity	Practical example of why aeroplanes fly	10
6	Forces on an aeroplane	Different forces acting on a plane. Introduction to lift force based on activity. Introduction to drag force	5
7	Activity	Practical example of making an airplane	15
8-9	Review	Understanding how they paper planes in the activity performed and what characteristics should a plane ideally have	10
10	Career Options	What can an aerospace engineer take up as a career	3
11	Next Module	Brief overview of what will be covered in the next module	2

Two babies of Aerospace Engineering

Aeronautical Engineering



- Machines that fly inside Earth's atmosphere
- Airplanes, Helicopters, Zeppelins, AUVs and Gliders
- Aircrafts transport people and material on Earth

Astronautical Engineering



- Machines that travel into outer space
- Space Ships, Satellites, Space observatories,
- Spacecraft explore space, planets and stars



Charecteristics of a good aeroplane

Travel in a straight line

Lightweight

Good Lift

Low Drag

Strong

Career Options



1

Structural
Design Engineer



2

Aeronautical
Engineer

3

Astronaut

4

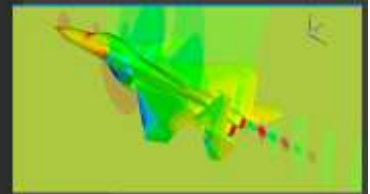
Aircraft Design
Engineer

5

Space
Exploration
Scientist

6

Aerodynamics
Engineer



Home activity

Make observations when,

The wings are wider and when they are narrower.

One wing is wider than the other.

The wings have a positive dihedral angle, zero dihedral angle and a negative dihedral angle.

Outer tips of plane wings are bent up and bent down.



Positive Dihedral angle –
Called dihedral wings

Negative Dihedral angle –
Called anhedral wings

