

Flying Start Challenge



Lift & Drag

Lesson 3

Learning Objectives

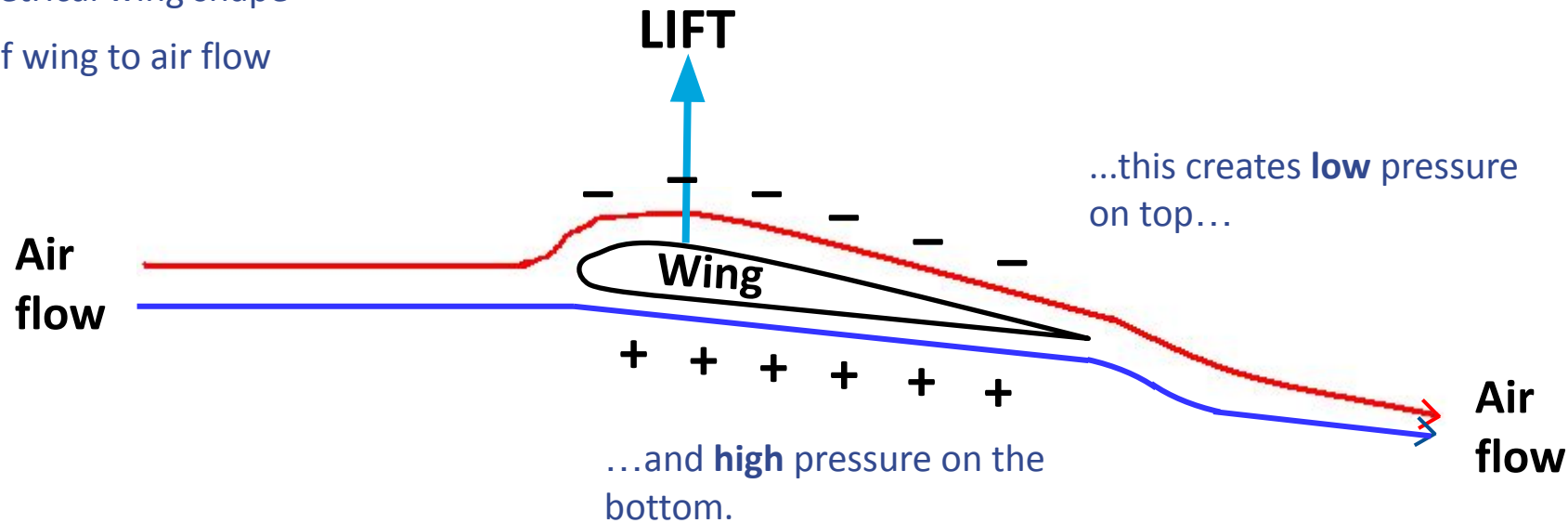
- How is Lift Created?
 - Learn how air flow over a wing creates lift
- Drag
 - Learn how drag is produced and good/bad designs
- Drag Activity
 - Understand the size of drag on different aircraft

How is Lift Created?

Red air flows over the top surface faster than the blue air over the lower surface due to:

1. Asymmetrical wing shape
2. Angle of wing to air flow

If the speed is faster, the pressure will be lower...



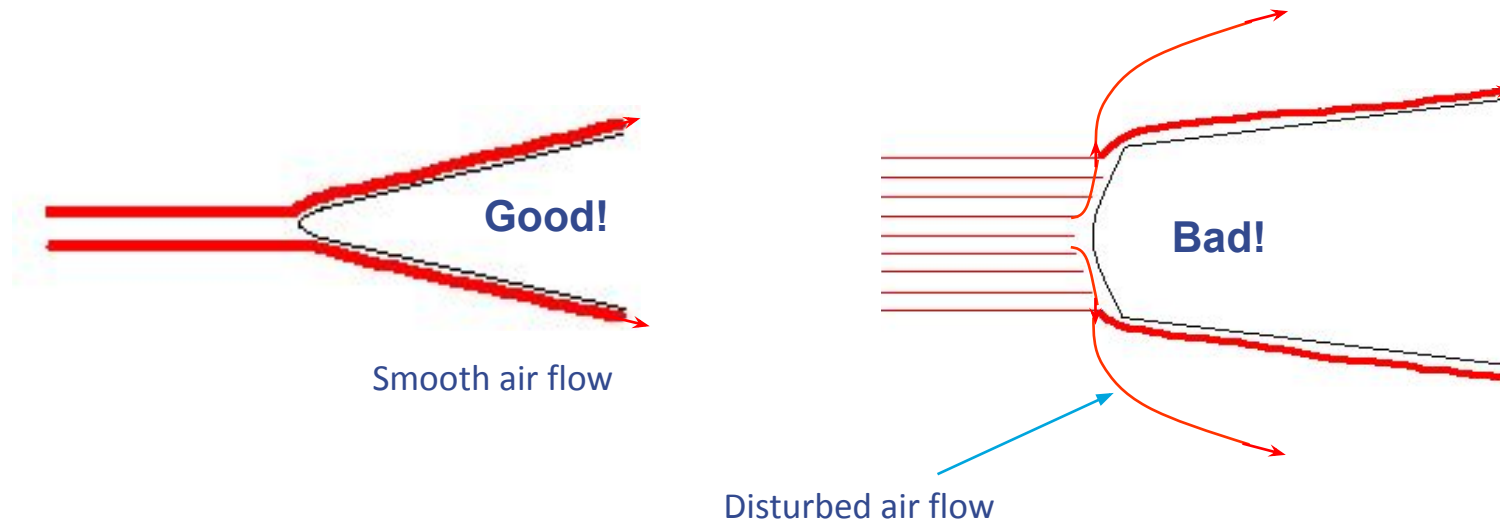
The difference in pressure creates a force which pushes the wing up
 This is lift! There are many factors involved but this is the key one!

Drag

Drag – this will slow your glider down

The shape of your glider determines how much drag is produced

To reduce drag, you need a shape which will cut through the air and maintain a smooth air flow



Drag Activity

Discuss in your teams - Order the aircraft from the highest to the lowest drag

1



2



3



4



Drag Activity

High Drag ←————→ Low Drag



Learning Highlights

- How is Lift Created?

- Low pressure on top and high pressure on bottom of wing creates lift

- Drag

- Shape determines drag, smooth shapes assist cutting through the air

- Drag Activity

- Larger and bulkier aircrafts create more drag