

10 The Third Force of Flight – Drag

What is drag?

Drag is a form of friction known as air resistance. Drag is the force that opposes an aircraft's motion through the air. Every part of the aeroplane generates drag, even the engines. Drag acts in the opposite direction to the motion of the aircraft.

Look at this picture of a gyrocopter.

Do you think the size of the wings will affect the speed it falls at?

Think about air resistance or drag, how will the size of the wings affect drag?

Resource D.

Resource E.

Gyrocopter Investigation.

Look at the different sizes of the gyrocopters. What are your predictions for what will happen?

Fill in the first section of the worksheet.

Test the gyrocopters by dropping them from the highest accessible point that you can reach (perhaps out of an upstairs window CAREFULLY).

Time how long it takes for the gyrocopter to reach the ground. You might need someone to help you.

Aerodynamics

Online resource 7

If transport is more streamlined, fuel costs could be lowered (less fuel needed to get through the air), flights could be smoother (less turbulence), cause less drag making the aircraft fly faster without having to create more thrust.

Air Resistance Challenge

How can you make an egg fall without it cracking?

Resource F.

How could you make a parachute to stop the egg from cracking when it falls?

What materials would you use?

<https://www.youtube.com/watch?v=DkITcvxnhc0>