

Episode 208: Preparation for drag forces

This topic concerns resistive forces against motion. It begins by considering drag forces in general before shifting the focus to air resistance. There is much opportunity for student investigation in this area and you may choose to extend one of the exercises for that purpose. You will also need to consider the depth of treatment you want to give the subject – whether or not your students will respond to a quantitative approach or if a qualitative appreciation of the ideas is sufficient. Here, we have chosen to emphasise the qualitative understanding of the effects of forces.

Episode 209: Drag, air resistance and terminal velocity

Main aims

Students will:

1. Recognise and understand the terms up thrust, drag, lift, air resistance and terminal velocity.
2. Understand that at terminal velocity the net force on the moving body is zero.
3. Be able to explain the acceleration of a body up to terminal velocity in terms of the forces acting on the body.

Prior knowledge

Students may have previously studied projectile motion, in which the effects of air resistance are ignored.

Where this leads

This topic has been considered without adopting a quantitative approach. Many of the ideas could be revisited in numerical problems once Newton's second law of motion has been covered.

