

Investigating Terminal Velocity – An Excursion that Supports the Achievement Standards and Engages Students in STEM Education.

Keywords:

Flight,
Terminal Velocity,
Excursion,
Assessment

Learning areas:

Mathematics,
Science

In secondary schools, student engagement in pursuing STEM content and related careers are often limited to the classroom with teachers hesitant to explore out of school excursions that do not directly relate to the curriculum. Highlighting the relevance of STEM content, iFly have designed excursions in line with Australian Achievement standards to engage students with inquiry and practical activities, that engage and provide artefacts that can be used for school assessment.

The proposed workshop provides an opportunity for educators to experience and undertake some of these multi-disciplinary practical activities and collaborate with others on solving real-world problems within the world of flight context. We aim to showcase how an excursion not only has strong links to the achievement standards but is also a great initiative for schools to engage in quality STEM education experiences.

This workshop consists of three parts – showcasing what an excursion involves (this can be done online).

1. In the first part of the workshop, we will provide a presentation, involving questioning on the engineering and design of a wind tunnel.
2. Linking the wind tunnel to forces of motion and links to the national curriculum on forces of motion/energy transformation. (this can be for any age level – we can show materials to all year levels and are happy to tailor this to a specific age group for a specific workshop, prep-10)
3. Hands-on experimental activity with objects:
 - mathematically predicting the terminal velocity of objects
 - hands-on inquiry approaches in predicting the way an object behaves in the wind tunnel
 - seeing and comparing the predictions with actual results (we have prepared a STEM video of how the objects behave in the tunnel).

Preparation material:

If participating please have the following items to participate with what we do on an excursion

- a round object (tennis ball, basketball, soccer, football or nerf object)
- tape measure
- scales to measure the mass of the object

Download:

<https://butterfly-puma-9je7.squarespace.com/s/Preparation-notes.pdf>