

## STEM Applied Learning Programme

### Lesson Outline

<b>STEM Theme</b>	Engineering Design and Modelling
<b>Module</b>	1 (F1 Cars)
<b>Total Hours</b>	26.25

No.	Topic
1-2	Project challenge (Part 1): How might we redesign a car for a designated group of user?
3-4	Project challenge (Part 2)
5	Overview of Industrial Product Design, Isometric Drawings and introduction to Autodesk Inventor
6	3D Part Modelling: design of the car body (Part 1)
7	Design of the car body (Part 2)
8	Introduction to Autodesk Flow Design. Explore how the car design affects the speed using wind tunnel simulations.
9	Creating Engineering Drawings from modelled parts
10	Assembly of the modelled parts Visualization of the final assembly
11	Flow Design: Observation techniques, data collection and analysis of the data collected
12	Prototyping of the car body using Computer Numeric Control (CNC) machining to cut the car body : Safe work practice
13	Prototyping of the car body: Finishing process part 1
14	Prototyping of the car body: Finishing process part 2
15	Comparison between simulation and prototyped design

