

Race for the Line (Year 8)



Key knowledge

The 3 parts to the design process are design, make and evaluate.

A specification is a description of the design and materials for a product.

Annotations are added to a design to add detail and descriptions.

Issues need to be solved and then added to annotations with explanations.

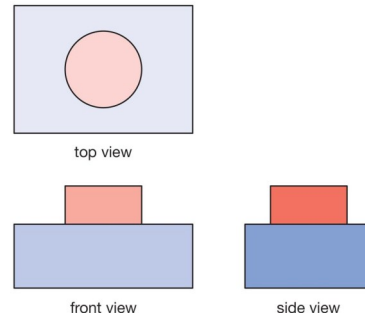
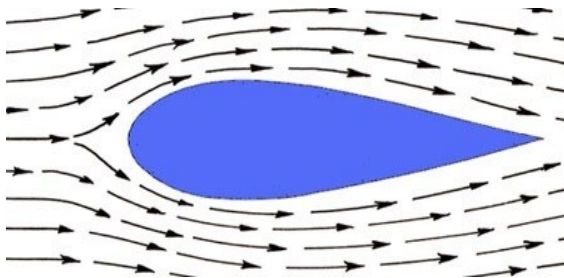
Designs can be improved and redesigned as needed.

Force = mass x acceleration

Force is a constant—all the CO₂ canisters are the same. This means if the mass is greater, then the acceleration will be less.

Streamlining reduces the resistance to the flow of a fluid—it reduces drag.

2D engineering drawings are drawn as a series of views of an object.



Key Skills

Annotate designs: sketch your design and label with features. Describe the features and then explain why you have added them and how they will work.

Follow the testing routines to ensure testing is fair and gives reliable results.

Fair testing is where all the conditions stay the same and only the vehicle changes.

Redesign—Performance of the vehicle is evaluated during testing and then changes to the design can be made to improve the performance.

When using testing equipment or tools in the workshop follow the safety instructions given.

Be prepared and equipped ready for testing as vehicles can only be tested once.

Shine—Tidy away all equipment to the correct place so that others can find it. Report any damage or wear and tear of equipment.

Key vocabulary

Design—a plan or specification for the construction of an object or product.

Evaluate—to assess or determine the quality of a product against its specification.

5S—a system for organising spaces so work can be performed efficiently, effectively, and safely.
SORT—SET—SHINE—STANDARDISE—SUSTAIN

Drag—a force acting opposite the motion of any object moving through a fluid (liquid or gas).

Friction—force between 2 surfaces that are sliding (or trying to slide) across each other.

Force—an interaction which can change the speed, direction or shape of an object.

Safety—being protected from danger, risk or injury

Force—an interaction which can change the speed, direction or shape of an object.

Weight—a force acting downwards due to gravity acting on a body's mass

Elevation—a scale drawing of the top, front or side of an object.

Scale drawing—a drawing that shows a real object with accurate sizes reduced or enlarged by a certain amount.

