

Research

Students will be able to research and explore a range of Cams toy.

They will be able to label and identify the features of a Cams toy.

Students will be aware of the different types of cams.

Students will be able to explain the key features of their designs including materials.

Students will be able to test out and explore different Cams toys.

Design

Students will be able to produce a specification for your cam toy.

Students will be able to produce a manufacturing plan.

Students will be able to produce a range of design ideas for their cam toy.

Students will be able to produce a cross-sectional drawing to show how their design is going to function.

Students will be able to develop their design ideas based upon feedback

Students will be able to select their best idea based upon the specification.

Year 6 Cam Toy

Related Mathematics
 $\text{Area} = \text{Length} \times \text{Width}$
 $\text{Volume} = \text{Length} \times \text{Width} \times \text{Depth}$

Make

Students will be able to measure and cut out the components for their model.

Students will be able to measure up the holes for the dowel to go through.

Students will be able to use the hand drill to drill the holes in the frame and the cam.

Students will make the element that will bob up and down.

Students will be able to construct the frame and the cam element.

Students will apply colour.

Evaluate

Students will evaluate their work based upon the specification they produced.

Students will assess whether or not their work followed their manufacturing plan and explain why it did or didn't work.

Students will interview their peers on their toy to see what others think about their design

Students will be able to produce a drawing of an improved design idea that better follows all specification points.

Famous Designers



Philip Lockwood

Mood Board



Key Vocabulary

Cams - Specially shaped wheel, or one with a hole offcentre; when it rotates, anything resting on its edge will bob up and down, as in a pull-along toy.

Manufacturing Plan - Plan which shows a sequence of work and the time each stage might take up.

Eccentric Cam - A disc with its centre of rotation positioned 'off centre'. This means as the cam rotates the flat follower rises and falls at a constant rate.

Pear Cam - Looks like a pear. The follower remains motionless for about half of the cycle of the cam and during the second half it rises and falls.

Snail / Drop Cam - A cam with spiral cross section used for progressive lifting of a lever as the cam revolves. Has the appearance of a snail's shell.

Follower - Device which rests on and follows the movement of the cam.

Spacer - A component placed between two parts, such as between a wheel and the side of a buggy.

Dowel - Wood cut to a cylindrical shape, available in various widths.