# KS3 Curriculum - Design & Technology

The aim of the KS3 Design and Technology curriculum at Queensbridge is to provide students with a diverse, engaging curriculum which fosters creative thinking and innovation in Product Design, Resistant Materials, Graphics, Textiles and Electronics.

**By the end of KS3, students should have:**

- learnt how to design and make products that solve genuine, relevant problems within different design contexts
- considered how products suit their own and others' needs, wants and values
- developed skills in creating and evaluating
- had opportunities to develop transferable skills to solve problems of our society and to improve their own quality of life
- had opportunities to apply knowledge and understanding
- developed a secure understanding of a range of technical vocabulary and be able to use this terminology as they describe and discuss concepts and principles

## Year 7

How can we protect our environment?

**Methodology:**

- Pupils will learn and understand how their decisions and actions affect the environment.
- Pupils will build on the knowledge and skills necessary to address complex environmental issues.
- Pupils will discuss and implement ways they can take action to keep our environment healthy and sustainable for the future.

**Skills:**

- Identifying and investigating design possibilities
- Generating design ideas
- Realising design ideas
- Analysing & evaluating

**Content:**

- Environment
- Pollution
- 6Rs
- Sustainability
- Energy Storage
- Energy Generation
- Work of other designers
- Textiles – tools, equipment and machinery
- Timber -workshop tools and equipment
- Prototyping

## Year 8

How does it work?

**Methodology:**

- Pupils will explain how movements and motions affect the design, manufacture and use of a product.
- Pupils will explain how simple mechanisms work.
- Pupils will discuss the function of common workshop tools, equipment and machinery.
- Pupils will learn, discuss and evaluate the source, origin, properties and uses of timber and timber-based materials.

**Skills:**

- Generating design ideas
- Developing design ideas
- Realising design ideas
- Analysing & evaluating

**Content:**

- Motions
- Linkages
- Levers
- CAMS
- Pulleys
- Gears
- Timber categories
- Timber -workshop tools and equipment
- Timber joints
- Turning timber
- Routing timber
- Work of other designers
- Prototyping

## Year 9

Does it really matter?

**Methodology:**

- Pupils will explain how the prototypes they develop must satisfy wants or needs and be fit for their intended use.
- Pupils will investigate, analyse and evaluate the work of past and present designers and companies to inform their own designing.
- Pupils will learn how to generate imaginative and creative design ideas using a range of different design strategies.
- Pupils will learn how to explore and develop their own ideas

**Skills:**

- Identifying and investigating design possibilities
- Producing a design brief and specification
- Generating design ideas
- Developing design ideas
- Realising design ideas
- Analysing & evaluating

**Content:**

Ikea – democratic design

- CAD CAM
- Iterative design
- Work of other designers
- Polymers
- Electronics
- Paper and card
- Shaping and forming
- Social, moral, cultural and environmental
- Prototyping
- Ergonomics