

## KS2 (Year 3 - Year 6)

### Aims

- Develop creative, technical and practical expertise.
- Critique, evaluate and test ideas and products, and work of others
- Build and apply knowledge, understanding and skills to design and make high-quality prototypes and products for a wide range of users
- Understand and apply principles of nutrition and learn how to cook

### Design

	Product Design	Textiles
Research to influence design ideas	All years	All years
Develop designs	All years	All years
Create a design specification	All years	Year 6 (slippers/phone cases)
Model designs	Year 6 (speaker project)	-
Sketching	All years	All years
Cross-section and exploded diagrams	Year 5 cross-section drawing (resin project) Year 6 - exploded drawing (speaker project)	Year 6 cross-section drawing (slippers)
Pattern pieces	N/A	All years
Prototypes of final design	All years	All years
CAD	Year 5	N/A

### Make

	Product Design	Textiles
Select tools and equipment accurately for tasks (cutting, shaping, joining, finishing)	All years	All years
Select materials and components according to functional properties	All years	All years
Select materials and components according to aesthetic qualities	All years	All years

## Evaluate

	Product Design	Textiles
Investigate and analyse a range of existing products (product analysis, ACCESS FM)	All years	All years
Evaluate research to inform design specification	All years	All years
Evaluate design ideas against design specification	All years	All years
Target market survey to consider views of others to improve work - evaluate survey	Year 5 (resin light project) Year 6 (speaker project)	Year 6
Understand key events and individuals in DT	Year 6 - design movements (speaker project)	All years

## Technical knowledge

	Product Design	Textiles
Apply understanding of how to strengthen and reinforce more complex structures	Year 3 (pop-up card project)	All years
Understand and use mechanical systems in products (e.g. gears, pulleys, cams, levers and linkages)	Year 3 (pop-up card project)	N/A
Understand and use electrical systems in products (e.g. series and parallel circuits, bulbs, buzzers and motors)	Year 5 (resin light project)	N/A
Apply understanding of computing to program, monitor and control products (e.g. CAD, TinkerCAD)	Year 5 (resin light project)	N/A

## Food - Cooking and nutrition

Understand and apply the principles of a healthy and varied diet	All years
Prepare and cook a variety of savoury dishes using a range of cooking techniques	All years
Understand seasonality and know where and how ingredients are grown, reared, caught and processed	All years
Select from a wide range of ingredients accurately according to selected dish	All years

## KS3 (Year 7 & Year 8)

### Aims

- Develop creative, technical and practical expertise.
- Critique, evaluate and test ideas and products, and work of others
- Build and apply knowledge, understanding and skills to design and make high-quality prototypes and products for a wide range of users
- Understand and apply principles of nutrition and learn how to cook

### Design

	Product Design	Textiles
Research to influence design ideas, such as cultures and identify/understand user needs	All years	All years
Identify and solve design problems	Year 7 (3D printing project)	All years
Create a design specification	All years	All years
Generate designs using a variety of approaches (e.g. user-centred design, biomimicry) avoiding stereotypes	Year 7 (3D printing project)	All years
Annotated sketching	All years	All years
3D and mathematical modelling (i.e. measurements/to scale)	All years	All years
Presentations (oral and digital)	All years - through discussions, CAD modelling, research, drawing.	All years - through discussions, research, drawing.
CAD	All years	N/A

### Make

	Product Design	Textiles
Select tools, techniques, processes, equipment and machinery precisely for tasks (i.e. CAM - 3D printer)	All years	All years

Select materials and components taking into account properties	All years	All years
Select materials and components taking into account aesthetic qualities	All years	All years

### Evaluate

	Product Design	Textiles
Analyse the work of past and present professionals/others to develop and broaden understanding	All years	All years
Investigate new and emerging technologies	Year 7 (3D printing project)	N/A
Test, evaluate and refine design ideas against design specification	All years	All years
Target market survey to consider views of others to improve work - evaluate survey	All years	All years
Understand key events and individuals in DT, and the responsibilities of designers, engineers and technologists	All years	All years

### Technical knowledge

	Product Design	Textiles
Understand and use properties of materials and the performance of structural elements to achieve functioning solutions	All years	All years
Understand how more advanced mechanical systems used in products enable changes in	Year 8 (clock project)	N/A

movement and force		
Understand how more advanced electrical and electronic systems can be powered and used in products (e.g. circuits with heat, light, sound and movement as inputs and outputs)	Year 8 (clock project)	N/A
Apply computing and use electronics to embed intelligence in products that respond to inputs and control outputs using programmable components (+ve and -ve connect to battery, piezoelectric crystal squeezed to generate electric charge)	Year 8 (clock project)	N/A

### Food - Cooking and nutrition

Understand and apply the principles of nutrition and health	All years
Prepare and cook a variety of savoury dishes using a range of cooking techniques	All years
Understand the source, seasonality and characteristics of a range of ingredients	All years
Select from a wide range of ingredients accurately to prepare and cook dishes	All years
Become competent in a range of cooking techniques (e.g. adapting and using own recipes, using awareness taste, texture and smell to decide how to season dishes and combine ingredients)	All years