

# Design & Technology: Skills and Knowledge

## Year 1

### Technical Knowledge

Can I build freestanding structures, exploring how they can be made stronger, stiffer and more stable (folding, joining or rolling)?  
Can I explore and use mechanisms in my products (e.g. levers and sliders)?

### Cooking & Nutrition

Can I cook a variety of sweet and savoury dishes (fruit and vegetables)?  
Can I prepare food safely and hygienically?  
Can I use butter knives and food scissors safely to cut food with help?  
Can I use a mixing bowl to prepare a mixture?  
Can I use a range of cooking techniques?  
Can I talk about where food comes from?

### Design

Can I design a product that has a purpose, function and appealing?  
Can I follow design criteria?  
Can talk about my ideas?  
Can I use pictures and words to describe my design?  
Can I explain which tools and materials I will need?

### Make

Can I select tools and materials from a range offered by the teacher?  
Can I measure, mark out and cut using scissors?  
Can I assemble, join and combine materials (glue, tape, split pins etc)?  
Can I use simple finishing techniques?

### Evaluate

Can I explore and evaluate a range of existing products?  
Can I talk about familiar products and what I'd like to change?  
  
Can I say what I like about my work and other people's work?  
Can I identify where my evaluations have led to improvements in my products?

## Year 2

### Technical Knowledge

- Can I explore and use **mechanisms** in my products (eg wheels and axles)?
- Can I measure, mark out and cut **fabric**?
- Can I assemble, join and combine **fabric** using glue?
  
- Can I select appropriate materials from their properties, so that it does the job I want it to?

### Cooking & Nutrition

- Can I cook a variety of predominantly savoury dishes?
- Can I prepare food safely and hygienically and describe what this means?
- Can I weigh and measure my ingredients using cups or scales?
- Can I use butter knives and food scissors safely?
- Can I use a range of cooking techniques?
- Can I describe the properties of the food ingredients: taste, smell, texture and consistency?
- Can I store my food product for long-life and hygiene?
- Can I talk about where food comes from?

### Design

- Can I design a product that has a purpose, function and is appealing?
- Can I use models, pictures and words to describe my design?
- Can I think of ideas and plan what to do next, based on what I know about materials and components?
- Can I explain which tools and materials I will need?
- Can I use ICT to design? (CAD apps)

### Make

- Can I select and use a range of tools, materials and equipment to make my product?
- Can I measure, mark out and cut materials in cm?
- Can I assemble, join and combine materials? (glue, tape, split pins, staples etc)
- Can I use simple finishing techniques?

### Evaluate

- Can I explore and evaluate a range of existing products?
- Can I recognise what I have done well in my work and other people's?
- Can I identify where my evaluations have led to improvements in my products?

### Year 3

#### Technical Knowledge

#### Cooking & Nutrition

Can I build a **shell structure** exploring how it can be made stronger and more stable?  
Can I assemble, join and combine **fabric** using glue, tying or a simple stitch?

Can I cook a variety of predominantly savoury dishes?  
Can I explain why food hygiene is important?  
Can I prepare food safely, including using sharp knives and food scissors?  
Can I measure and weigh accurately, using measuring cups or scales?  
Can I use a range of cooking techniques?

#### Design

#### Make

#### Evaluate

Can I generate ideas after thinking about who will use them and what they will be used for?  
Can I develop and explain ideas clearly with design objectives?  
Can I plan the making process, suggesting a sequence of actions?  
Can I communicate my design ideas in a variety of ways (discussion, annotated sketches, ICT – CAD apps)?

Can I select the tools, techniques and materials needed to make my product?  
Can I measure, mark out and cut materials accurately to the nearest cm?  
Can I join materials using both permanent and temporary fastenings?  
Can I use finishing techniques to strengthen and improve the appearance of my product?

Can I investigate and evaluate a range of existing products?  
Can I reflect on my work in relation to the intended users?  
Can I identify improvements needed?

## Year 4

### Technical Knowledge

Can I use mechanisms to make things move in different ways (**levers and linkages**)?  
Can I use **electrical components** in my product (bulbs, buzzers, switches etc)?

### Cooking & Nutrition

Can I cook a variety of predominantly savoury dishes?  
Can I design my own recipe and carry it out?  
Can I measure accurately using scales?  
Can I use a range of cooking techniques?  
Can I explain the importance of hygiene and how I can improve ours?  
Can I present my food product so that it impresses the intended user?  
Can I evaluate my recipe and how it meets its intended purpose?

### Design

Can I generate ideas after thinking about who will use them and what they will be used for?  
Can I develop and explain my ideas clearly?  
Can I plan the making process, suggesting a sequence of actions, or alternatives if needed?  
Can I communicate my design ideas in a variety of ways (discussion, annotated sketches, ICT – CAD apps)?

### Make

Can I select the tools, techniques and materials needed to make my product?  
Can I measure, mark out and cut materials accurately to the nearest cm?  
Can I join materials using both permanent and temporary fastenings?  
Can I use joints that are flexible to allow for dismantling or folding?  
  
Can I use finishing techniques to strengthen and improve the appearance of my product?

### Evaluate

Can I investigate and evaluate a range of existing products?  
  
Can I identify improvements needed?  
Can I reflect on my work in relation to the intended users?

## Year 5

Technical Knowledge		Cooking & Nutrition	
<p>Can I build a <b>frame structure</b>, exploring how it can be made stronger and more stable? (columns, triangle corners etc)</p> <p>Can I assemble, join and combine <b>fabric</b> using glue, tying or stitching?</p>		<p>Can I explain that food is grown, reared or caught in the UK, Europe and the wider world?</p> <p>Can I describe how seasons affect what food is available?</p> <p>Can I explain that a healthy diet is made up from a variety and balance of different foods?</p> <p>Can I prepare and cook predominately savoury dishes safely and hygienically?</p> <p>Can I use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading?</p> <p>Can I adapt my recipe to change appearance, taste, texture and aroma?</p>	
Design		Make	
<p>Can I develop my own design criteria after carrying out appropriate research?</p> <p>Can I generate ideas after thinking about who will use them and what they will be used for?</p> <p>Can I develop a design that is innovative, functional, appealing and fit for purpose?</p> <p>Can I plan the making process, suggesting a sequence of actions?</p> <p>Can I communicate my design ideas in a variety of ways (discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces, computer aided design)?</p>		<p>Can I select the tools, techniques and materials needed to make my product?</p> <p>Can I measure, mark out and cut materials accurately?</p> <p>Can I suggest alternative ways of making a product if the first attempt fails?</p> <p>Can I join materials using both permanent and temporary fastenings?</p> <p>Can I use joins that are flexible to allow for dismantling or folding?</p> <p>Can I use finishing techniques to strengthen and improve the appearance of my product?</p>	
		Evaluate	
		<p>Can I investigate and evaluate a range of existing products, thinking about my own design criteria?</p> <p>Can I reflect on my work in relation to the intended users?</p> <p>Can I identify improvements needed?</p> <p>Can I carry out appropriate tests on my product?</p>	

## Year 6

## Technical Knowledge

Can I use mechanisms (**pulleys and gears**) to make things move in different ways?  
Can I use **electrical components** in my products incorporating ICT (programming and control)?

## Cooking & Nutrition

Can I explain that food is grown, reared or caught in the UK, Europe and the wider world?  
Can I describe how seasons affect what food is available?  
Can I describe how food is processed into ingredients that can be eaten or used in cooking?  
Can I explain that a healthy diet is made up from a variety and balance of different foods?  
  
Can I prepare and cook predominately savoury dishes safely and hygienically?  
Can I use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking?  
Can I adapt my recipe to change appearance, taste, texture and aroma?

## Design

Can I develop my own design criteria after carrying out appropriate research?  
Can I generate ideas after thinking about who will use them and what they will be used for?  
Can I develop a design that is innovative, functional, appealing and fit for purpose?  
Can I develop and explain ideas clearly?  
Can I plan the making process, suggesting a sequence of actions, or alternatives if needed?  
Can I communicate my design ideas in a variety of ways (discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces, computer aided design)?

## Make

Can I select the tools, techniques and materials needed to make my product?  
Can I measure, mark out and cut materials accurately to the nearest mm?  
Can I use scoring and folding to shape materials accurately with a focus on precision?  
Can I join materials effectively?  
Can I suggest alternative ways of making a product if the first attempt fails?  
Can I use finishing techniques to strengthen and improve the appearance of my product?

## Evaluate

Can I investigate and evaluate a range of existing products, thinking about my own design criteria?  
  
Can I reflect on my work in relation to the intended users?  
Can I identify improvements needed?  
Can I carry out appropriate tests on my product?  
Can I recognise that the quality of a product depends on how something is made and if it meets its intended use?  
  
Can I understand how **key events and individuals** in design and technology have helped shape the world?