



# Key Skills Progression Ladders

Design and Technology			
	Teaching Points All targets to be covered throughout the year. Key skills and purpose are weaved into planning.	Purpose of Study Why are we teaching this and why are the children learning these teaching points?	Key skills These are progressive skills children will acquire through the academy.
Year 1	<p><b><u>Generating ideas</u></b> Think of own ideas for design Use pictures and words to plan Design a product for myself, following a design criteria Work in a range of contexts ( imaginary home, school, wider community, story based)</p> <p><b><u>Making</u></b> Explain what is being made and why Select appropriate tools and equipment for the purpose</p> <p><b><u>Evaluation</u></b> Talk about own an pre-existing products, saying what is good or bad about them</p>	<p>To design and make products creativity and imaginatively To solve real and relevant problems in different contexts</p>	<p><b><u>Developing, planning and communicating ideas</u></b> To draw on their own experiences to help generate ideas To suggest ideas and explain what they are going to do To identify a target group for what they intend to design and make To model their ideas in card and paper To develop their design ideas applying findings from their earlier research To appreciate the need for good design by exploring a range of design and designers</p> <p><b><u>Working with tools, equipment, materials and components to make quality products</u></b> To make their design using appropriate techniques With help to measure, mark out, cut and shape a range of materials To use tools eg scissors and a hole punch safely To explore different materials and become familiar with their properties and uses To assemble, join and combine materials and components together using a variety of temporary methods eg glues or masking tape To build structures, exploring how they can be made stronger, stiffer and more stable Use simple finishing techniques to improve the appearance of their product To select and use appropriate fruit and vegetables, processes and tools Basic food handling, hygienic practices and personal hygiene Understand where food comes from To use the basic principles of nutrition and healthy eating to prepare a healthy and varied dish</p> <p><b><u>Evaluating processes and products</u></b></p>

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	<p>Say whether their product does what it is meant to ( fits the design brief) and how it could be improved</p> <p><b><u>Food and Nutrition</u></b> Know how to peel, cut, grate, mix and mould foods ( with close supervision)</p> <p><b><u>Construction</u></b> Use sheet materials and construction tools with appropriate supervision</p> <p><b><u>Mechanisms</u></b> Know about movement of simple mechanisms such as levers, sliders, wheels and axles</p>		<p>To evaluate their product by discussing how well it works in relation to the purpose</p> <p>To evaluate their products as they have developed, identifying strengths and possible changes they might make</p> <p>To evaluate their product by asking questions about what they have made and how they have gone about it</p>
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## Key Skills Progression Ladders

# Year 2

### **Generating ideas**

Think of own ideas and plan what to do next  
Describe designs using pictures, diagrams, models, mock-ups, words and computing  
Design a product for myself and others following design criteria  
Work confidently in a range of contexts ( imaginary, home, school, wider community, story-based etc)

### **Making**

Explain what is being made and why the audience will like it  
Choose appropriate tools and equipment, describing and explaining why they are being used

### **Evaluation**

Describe how their own and pre-existing products work, evaluating what went well and what could be done differently  
Suggest what went well and what would have been done differently when evaluating their own product

### **Food and Nutrition**

To design and make products creatively and imaginatively  
To solve real and relevant problems in different contexts  
Considers their own and others' needs, wants and values

### **Developing, planning and communicating ideas**

To generate ideas by drawing on their own and other people's experiences  
To develop their design ideas through discussion, observation, drawing, templates, mock ups and communication technology  
To identify a purpose for what they intend to design and make and work in a range of relevant contexts  
To identify simple design criteria  
To make simple drawings and label parts

### **Working with tools, equipment, materials and components to make quality products**

To explore different materials and become familiar with their properties and uses modelling in 2 D and 3D and where appropriate, using information technology to record the development of their designs  
Begin to independently select tools and materials; use vocabulary to name and describe them  
To measure, cut and score with some accuracy  
To use hand tools safely and appropriately  
Explore and use mechanisms ( for example levers, sliders, wheels and axles)  
To build structures, exploring how they can be made stronger, stiffer and more stable  
To choose and use appropriate finishing techniques

### **Evaluating processes and products**

To evaluate against their design criteria  
To explore and evaluate a range of existing products  
To evaluate their products as they are developed, identifying strengths and possible changes they might make  
Talk about their ideas, saying what they are like and dislike about them

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	<p>Know how to peel, cut, grate, mix and mould foods ( with close supervision)</p> <p><b><u>Construction</u></b> Use sheet materials and construction tools with appropriate supervision</p> <p><b><u>Textiles</u></b> Cut, then join textiles using a running stitch, over sewing or glue. Decorate using a range of items ( buttons, sequins, beads and ribbons etc)</p>		
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## Key Skills Progression Ladders

# Year 3

### **Generating ideas**

Create a design that meets a range of requirements  
Consider the equipment and tools needed when planning  
Describe a design using an accurately labelled diagram and in words

### **Making**

Use arrange of tools and equipment accurately  
Measure, mark out, assemble and join materials and components with some accuracy

### **Evaluation**

Evaluate own and pre-existing products  
Suggest what could be changed to improve a design, beginning to link this to the design brief

### **Food and Nutrition**

Know how to peel, cut, grate, mix and mould and begin to cook foods ( using toasters and microwaves with supervision)

### **Construction**

Use sheet materials and construction tools with appropriate supervision

To design and make products creativity and imaginatively  
To solve real and relevant problems in different contexts  
Considers their own and others' needs, wants and values  
Acquire a broad range of subjects and draws on disciplines such as maths, engineering, computing and art

### **Developing, planning and communicating ideas**

To research and develop the design criteria to inform their design  
To generate ideas for an item, considering its purpose and user/s  
To identify a purpose and establish criteria for a successful product  
To plan the order of their work before starting  
To explore, develop and communicate design proposals by modelling ideas  
To generate, develop and communicate their ideas through discussion, annotated sketches and diagrams

### **Working with tools, equipment, materials and components to make quality products**

To select tools and techniques for making their product  
Measure, mark out, cut, score and assemble components with more accuracy  
To work safely and accurately with a range of simple tools to think about their ideas as they make progress and be willing to change things if this helps them improve their work  
To apply their understanding of how to strengthen, stiffen and reinforce more complex structures using a range of equipment including computing  
Understand how to use a mechanical system in their product ( for example, gears, pulleys, cams, levers and linkages)

### **Evaluating processes and products**

To explore and evaluate a range of existing products  
To evaluate their product against original design criteria eg how well it meets its intended purpose  
To disassemble and evaluate familiar products

## Key Skills Progression Ladders

	<p><b><u>Mechanisms</u></b> Know about movement of simple mechanisms such as levers and linkages</p>		
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## Key Skills Progression Ladders

# Year 4

### **Generating ideas**

Generate more than one idea for how to create a product  
 Gather information to help design a successful product ( ie by asking others' views)  
 Produce a detailed plan with labelled diagrams, a written explanation and step- by- step guide  
 Suggest improvements to develop and refine a planned idea

### **Making**

Use a range of tools and equipment with accuracy  
 Measure, mark out, join, assemble materials and components with accuracy

### **Evaluation**

Evaluate the appearance and usability of own and pre-existing products  
 Explain how the original design could be improved, considering the appearance and usability and linking this to the design brief

### **Food and Nutrition**

Know how to peel, cut, grate, mix and mould and begin to cook foods (

To design and make products creatively and imaginatively  
 To solve real and relevant problems in different contexts  
 Considers their own and others' needs, wants and values  
 Acquire a broad range of subjects and draws on disciplines such as maths, engineering, computing and art

### **Developing, planning and communicating ideas**

To consider the purpose for which they are designing  
 To generate, develop and communicate their ideas through discussion, annotated sketches and diagrams from different views showing specific features  
 To develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggesting alternative methods of making, if the first attempts fail

### **To evaluate products and identify criteria that can be used for their own designs** **Working with tools, equipment, materials and components to make quality products**

To select appropriate tools and techniques for making their product  
 To measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques ( eg cutting, shaping, joining and finishing) accurately  
 To join and combine materials and components accurately in temporary and permanent ways  
 To sew using a range of different stitches, to weave and knit  
 To measure, tape or pin, cut and join fabric with some accuracy  
 To use simple graphical communication techniques  
 Demonstrate hygienic food preparation and storage  
 Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed

### **Evaluating processes and products**

To evaluate their work both during and at the end of the assignment considering the views of others to improve their work  
 To evaluate their products carrying out appropriate tests

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	<p>using toasters and microwaves with supervision)</p> <p><b><u>Construction</u></b> Use sheet materials and construction tools with appropriate supervision</p> <p><b><u>Textiles</u></b> Cut, then join textiles using a running stitch, over sewing, back stitch or fastenings Understand seam allowances, create simple patterns and appropriate decoration techniques ( eg applique)</p>		
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## Key Skills Progression Ladders

# Year 5

### **Generating ideas**

Generate a range of ideas after collating relevant information ( ie users' views)

Produce a detailed plan, with step-by-step instructions, cross-sectional diagrams and prototypes

Suggest alternative plans, considering the positive aspects and drawbacks of each

### **Making**

Use a range of tools and equipment expertly  
Consider the aesthetic qualities and functionality of my work when making

### **Evaluation**

Evaluate the appearance and function of a product ( own and pre-existing) against the original criteria saying whether it is fit for purpose

Suggest improvements that could be made, considering materials and methods that have been used

### **Food and Nutrition**

Cut, mix, mould and begin to use hobs to heat food

To design and make products creatively and imaginatively  
To solve real and relevant problems in different contexts  
Considers their own and others' needs, wants and values

Acquire a broad range of subjects and draws on disciplines such as maths, engineering, computing and art

To learn how to take risks

To become resourceful, innovative, enterprising and capable citizens

### **Developing, planning and communicating ideas**

To use research to design and innovate, functional, appealing product aimed at a particular individual or group

To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design

To draw up a specification for their design

To develop a clear idea of what has to be done, planning how to use materials equipment and processes and suggesting alternative methods of making if the first attempts fail

To use results of investigations, information sources, including computing when developing design ideas

### **Working with tools, equipment, materials and components to make quality products**

To select appropriate materials, tools and techniques

To measure and mark out accurately

To use skills in using different tools and equipment safely and accurately

To cut and join with accuracy to ensure a good-quality finish on the product

To apply their understanding of how to strengthen, stiffen and reinforce more complex structures using a range of equipment including ICT

To understand how to use a mechanical system in their product ( for example, gears, pulleys, cams, levers and linkages)

Understand and use electrical systems in their product ( for example, series circuits incorporating switches, bulbs, buzzers and motors)

To apply the rules for basic food hygiene and other safe practices eg hazards relating to the use of ovens

Understand and apply the principles of a healthy and varied diet

### **Evaluating processes and products**

To evaluate a product against the original design specification

To evaluate it personally and seek evaluation from others to improve their work

To understand how key events in design and technology have helped shape the world ( link to food DT)

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	<p>with appropriate supervision</p> <p><b><u>Construction</u></b> Use sheet and construction materials appropriately</p> <p><b><u>Mechanisms</u></b> Understand how mechanical systems such as cams, pulleys or gears create movement</p>		
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## Key Skills Progression Ladders

# Year 6

### Generating ideas

Use a range of information to inform design ( eg market research using surveys, interviews, questionnaires or web based resources)

Produce a detailed plan, with cross-sectional diagrams and computer generated designs)

Work within constraints, refining and justifying plans as necessary

### Making

Use a range of tools and equipment precisely  
Consider the aesthetic qualities and functionality of my product as making it, refining details as necessary

### Evaluation

Evaluate the appearance and test the function of a product ( own and pre-existing) against the original criteria, saying whether it is fit for purpose  
Suggest improvements that could be made, considering materials, methods, sustainability of the product and how much a product costs to make

To design and make products creatively and imaginatively  
To solve real and relevant problems in different contexts  
Considers their own and others' needs, wants and values

Acquire a broad range of subjects and draws on disciplines such as maths, engineering, computing and art

To learn how to take risks

To become resourceful, innovative, enterprising and capable citizens

To use evaluation of past and present DT to understand impact on daily life and the wider world

To support contribution to the creativity, culture, wealth and well-being of the nation

### Developing, planning and communicating ideas

To develop a design specification

To plan the order of their work, choosing appropriate materials, tools and techniques  
To use research to design innovative, functional, appealing products aimed at a particular individual or group

To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design

### Working with tools, equipment, materials and components to make quality products

To select appropriate and a wider range of tools, materials, components and techniques according to their functional properties and aesthetic qualities

To assemble components to make working models

To use tools safely and accurately

To construct products using permanent joining techniques ( eg cutting, shaping, joining and finishing)

Apply understanding of how to strengthen, stiffen and reinforce more complex structures

To make modifications as they go along

To measure, tape or pin, cut and join fabric with some accuracy

To pin, sew and stitch materials together to create a product

To achieve a quality product

To understand and use electrical systems in their products ( eg series circuits incorporating switches, bulbs, buzzers and motors)

Apply understanding of computing to program, monitor and control their product

### Evaluating processes and products

To evaluate their products, identifying strengths and areas for development and carrying out appropriate tests

Consider the views of others to improve their work

To record their evaluations using drawings with labels

To evaluate against their original criteria and suggest ways that their product could be improved

Understand how key events and individuals in design technology have helped shape the world

## Key Skills Progression Ladders

	<p><b><u>Food and Nutrition</u></b> Cut, mix, mould and use hobs to heat food, developing independence with this as appropriate</p> <p><b><u>Construction</u></b> Use sheet and construction materials appropriately</p> <p><b><u>Textiles</u></b> Pin and tack fabrics, use patterns and seam allowances and join fabrics to make quality products</p>		
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