

# United Learning

## Primary DT Curriculum

*This document aims to provide DT subject leaders and classroom teachers with an understanding of the rationale for the DT curriculum, the core substantive and disciplinary knowledge that will be covered, as well as guidance on how to implement it in individual schools and classrooms.*

1. Rationale
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  - Whole school
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# 1. Rationale

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The DT curriculum at United Learning provides children with a:

- **Relevant, coherent, progressive** knowledge of the design process and an appreciation of the work of a range of craftspeople:
  - **Investigate , disassemble and evaluate**
    - *How have materials and components been used?*
    - *How has the product been made?*
    - *Why has it been made this way?*
    - *What are the different parts of a product called and what does each do?*
    - *How does the way a product works relate to its intended purpose?*
  - **Focused practical task**
    - *How can materials, structures and techniques be tested?*
    - *How can materials and structures be joined?*
    - *Where might materials and structures fail?*
  - **Design and make, evaluate**
    - *How will ideas be explored, developed, communicated and modelled in a variety of ways?*
    - *How will a product be made; what materials, equipment and processes will be used?*
    - *What alternatives are there, if initial attempts fail?*
    - *How well did the product work? What were the strengths and areas for development?*
    - *How well did the final product relate to its intended purpose?*
- **Grounding in core disciplinary knowledge**, and the ability to approach challenging, design questions
  - Marking out and cutting skills
  - Fixing and joining skills
  - Mechanical and control skills
  - Finishing skills, including food hygiene
  - Related language skills



# 1. Rationale

Key knowledge provides pupils the opportunity to **develop design concepts**, and to evaluate products against their intended purpose.

Autumn	Cooking & nutrition <i>Fruit kebabs</i>	Investigate, disassemble, evaluate	<b>Skills</b> Finishing skills, including food hygiene <ul style="list-style-type: none"> <li>Basic food handling, hygienic practices and personal hygiene, including how to control risks</li> <li>Using a variety of tools and equipment to peel, cut, grate, mix and mould food</li> <li>The nutritional value of fruit in a balanced diet</li> </ul>	
		<ul style="list-style-type: none"> <li>Investigate, disassemble, evaluate</li> <li>Examine and name a range of fruits, handle and smell them, sketch and label</li> <li>Cut and compare two contrasting fruits, explain terms – skin, peel, flesh and use sensory vocab to describe</li> <li>Evaluate existing products to determine which is best and why</li> <li>Classify fruits according to colour, texture, taste, where grown, how they are eaten</li> </ul> <b>Focused practical task</b> <ul style="list-style-type: none"> <li>Discuss food hygiene practices</li> <li>Name and demonstrate use of simple tools</li> <li>Survey favourite fruits and represent in bar chart</li> <li>Taste test</li> </ul> <b>Design and make, evaluate</b> <ul style="list-style-type: none"> <li>Identify target group and communicate what they intend to make, based on research conducted in survey</li> <li>Select and use appropriate fruit, processes and tools</li> <li>Evaluate product - record in pictures/writing how it look, tastes and if it matches the brief</li> </ul>		<b>Examples and vocabulary</b> <ul style="list-style-type: none"> <li>Designing: choosing, investigating, tasting, arranging experimenting, popular, sort, bar chart, pictogram</li> <li>Making: washing, cleaning, peeling, cutting, slicing, grating</li> <li>Knowledge and understanding: salad, fruit, peel, flesh, skin, grater, chopping board, peeler, seeds, pips, stalk, juice, root, leaf, stone, bunch</li> <li>Sensory vocab: crisp, sharp, juicy, sweet, sour, squashy, smooth, crunchy, scented, waxy</li> </ul>
		<b>Craftspeople</b> Local chef		
Spring	Static structures <i>Castles</i>	Investigate, disassemble, evaluate	<b>Skills</b> Marking out and cutting <ul style="list-style-type: none"> <li>Use of scissors, snips and hole punching</li> <li>Make clear labelled drawings</li> </ul> <b>Fixing and joining</b> <ul style="list-style-type: none"> <li>Join 2D and 3D materials- gluing, sticking, tying, fixing with split pins</li> <li>Experiment with creating hinges</li> </ul> <b>Finishing</b> <ul style="list-style-type: none"> <li>Collage, painting</li> </ul>	
		<ul style="list-style-type: none"> <li>Local area walk/visit to castle, sketching and discussion around different types of structures and how space is enclosed</li> <li>Label main features and relate to mathematical shapes</li> </ul> <b>Focused practical task</b> <ul style="list-style-type: none"> <li>Discuss how designers use models to develop and communicate their ideas</li> <li>Build rectangular frames using construction kits and explore ways of making them more stable e.g. a wider base, adding further parts</li> </ul> <b>Design and make, evaluate</b> <ul style="list-style-type: none"> <li>Review the structure and features of a castle from work done in History</li> <li>Create design for model and say how they are going to make it</li> <li>Select from a range of materials</li> <li>Construct a model using 2D and 3D material selected to match the task</li> <li>Talk about their finished castle, identifying what has gone well and what they could have done better</li> </ul>		<b>Examples and vocabulary</b> <ul style="list-style-type: none"> <li>Designing: choose, try out, discuss, drawing, label, list</li> <li>Making: Join, fix, plan, scissors, hole punch, masking tape</li> <li>Knowledge and understanding: structure, strong, weak, wall, roof, window, portcullis, ramparts, drawbridge, turret, hinge, square, rectangle, triangle, cube, cuboid, cylinder side, edge, surface, on top of, underneath, smaller than, larger than, symmetrical, beside, next to</li> </ul>
		<b>Craftspeople</b> Local architect		
Summer	Mechanisms <i>Book with moving parts</i>	Investigate, disassemble, evaluate	<b>Skills</b> Marking out and cutting <ul style="list-style-type: none"> <li>Assemble strips of card to make levers and sliders</li> </ul> <b>Fixing and joining</b> <ul style="list-style-type: none"> <li>Levers</li> </ul> <b>Finishing</b> <ul style="list-style-type: none"> <li>Collage, colouring</li> </ul>	
		<ul style="list-style-type: none"> <li>Share and evaluate a range of books with moving parts – what does the part do? How does it work? Does it work well?</li> <li>Introduce levers and sliders and how they make parts move</li> <li>Show examples of how levers and pivots work and introduce key vocabulary</li> </ul> <b>Focused practical task</b> <ul style="list-style-type: none"> <li>Explore simple mechanisms and levers using strips of card and construction kits</li> <li>Explore ways of stiffening strips of card using pipe cleaners, straws.</li> </ul> <b>Design and make, evaluate</b> <ul style="list-style-type: none"> <li>Plan story showing the evolution of a form of transport e.g. bicycle, car – which parts will move and how. Which order will things be done in?</li> <li>Create paper prototype then card version</li> <li>Evaluate how well the moving parts work, the impact on the rider and how well it matches the intended outcome</li> </ul>		<b>Examples and vocabulary</b> <ul style="list-style-type: none"> <li>Designing: ideas discuss, choose, drawing, labelling</li> <li>Making: hole punch, paper fastener, join, cut, planning</li> <li>Knowledge and understanding: moving, handle, lever, pivot, pull, slider, direction, balance, movement, forward, backwards, order, sequence, length</li> </ul>
		<b>Craftspeople</b>		

Design concepts are revisited in every unit, providing a consistent context that allows pupils to **situate new knowledge in their wider understanding of the design process.**

Disciplinary knowledge is taught alongside substantive knowledge, and is **revisited and developed across KS1 and KS2**. An appreciation of the work of a craftsperson is embedded in each unit

Pre and post learning quizzes highlight the core **substantive knowledge** required for the new unit.

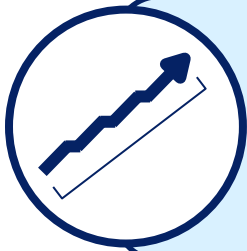
Substantive knowledge is aligned to the National Curriculum, and **prepares pupils for KS3.**



# 2. Implementing the UL Primary Curriculum

## Making the UL Primary Curriculum work for your school and your classes:

### Design Technology



#### Within the Subject

The UL DT curriculum is aligned to the National Curriculum for Art and Design. It teaches pupils disciplinary knowledge (e.g. using a range of materials and techniques to design and make products) gradually, and core substantive knowledge is sequenced across the units to build pupils' understanding of the differences and similarities between different practices and disciplines and to how this links to their own work.

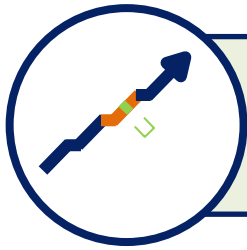
Aim to implement the longer-term subject plan; avoid swapping units or 'pick and mixing' with other schemes.



#### Within the Unit

All units contain a lesson summary; this lists the objectives in order and also provides a suggested way of grouping these into a number of lessons. Lessons should follow the sequence – disassembly task, focused practical task, design, make, evaluate. At each stage in the sequence objectives could be covered in more or less time to meet the needs of your school and classes.

Each unit has been deliberately planned to cover 6 lessons and not the full length of the half term; formative assessment should be used to gap fill in the remaining lessons.



#### Within the Lesson

All lesson plans are based on Rosenshine principles and reflect best practice. However, they should be used as a starting point and adapted or completely rewritten if needed to meet your class' needs. Hinge questions and other low-stakes formative assessment should also be used to inform your lesson plans, to fill your class' specific gaps or address their misconceptions.

# 3. Overview: Whole School

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	<p><b>Cooking &amp; nutrition</b></p> <ul style="list-style-type: none"> <li>Designing and making with food</li> <li>Understanding Health and nutrition</li> <li>Combining tastes and textures to make a product</li> <li>Using basic cutting tools</li> </ul> <p><i>Fruit kebabs</i></p>	<p><b>Textiles: Marking out and joining fabric</b></p> <ul style="list-style-type: none"> <li>Making a textile product by marking out, cutting and joining fabric</li> </ul> <p><i>Finger puppets (animals)</i></p>	<p><b>Free Standing Structures</b></p> <ul style="list-style-type: none"> <li>Understanding ways in which structures can be made stable</li> <li>Understand how to stiffen materials</li> </ul> <p><i>Photo frame (as a present)</i></p>	<p><b>Mechanisms: Linkages</b></p> <ul style="list-style-type: none"> <li>Understand how a range of linkage type mechanisms work</li> <li>Assemble a range of mechanisms including pop ups, spinners, sliders, levers and tabs</li> <li>Apply to the design of a pop up book</li> </ul> <p><i>Pop Up Book with moving parts (Guide To The Rainforest)</i></p>	<p><b>Structures: Musical instruments</b></p> <ul style="list-style-type: none"> <li>Investigate instruments from different times and cultures</li> <li>Understand how shape and materials used can alter sound</li> <li>Investigate a range of finishing techniques</li> </ul> <p><i>Rainmaker</i></p>	<p><b>Structures</b></p> <ul style="list-style-type: none"> <li>Understand why structures sometimes fail</li> <li>Investigate and use techniques to reinforce and strengthen structures</li> <li>Design and make a structure for a specific tasks</li> </ul> <p><i>Design and build an aqueduct</i></p>
Spring	<p><b>Static Structures</b></p> <ul style="list-style-type: none"> <li>Creating models from sheet and reclaimed materials</li> <li>Understand about basic structures and how they can be made stronger/more stable</li> <li>Use range of fixing techniques</li> </ul> <p><i>Castles</i></p>	<p><b>Mechanisms: Wheels, axels, pulleys and levers</b></p> <ul style="list-style-type: none"> <li>Joining materials with moving joints</li> <li>Understand how wheels and axels work</li> <li>Understand winding mechanisms</li> </ul> <p><i>Moving vehicle (fire engine)</i></p>	<p><b>Mechanisms and control: Pneumatics</b></p> <ul style="list-style-type: none"> <li>Consider different types of pneumatic structures</li> <li>Know about the movement of simple mechanisms , such as levers and linkages</li> </ul> <p><i>Moving Monster</i></p>	<p><b>Textiles: Reinforcing fabric</b></p> <ul style="list-style-type: none"> <li>Investigate ways of reinforcing fabric, e.g. over stitching, running stitch</li> <li>Create and use a pattern</li> <li>Develop decorative techniques and fastenings e.g. applique</li> </ul> <p><i>Purse for the Rio carnival</i></p>	<p><b>Mechanisms: Moving toys using cams, wheels and axels</b></p> <ul style="list-style-type: none"> <li>Understand how mechanisms can be used to produce movement</li> <li>Cut, shape and join components, selecting tools for a specific purpose</li> </ul> <p><i>Roman siege machines</i></p>	<p><b>Mechanisms: electrical and computer control</b></p> <ul style="list-style-type: none"> <li>Understand how products can be driven by electricity</li> <li>Use motors to control speed and direction of movement</li> <li>Develop structures with cladding and finishing techniques</li> </ul>
Summer	<p><b>Mechanisms: Pushes, pulls and levers</b></p> <ul style="list-style-type: none"> <li>Understand simple mechanisms that create movement e.g. simple levers and sliders</li> </ul> <p><i>A book with moving parts (transport)</i></p>	<p><b>Textiles: Using a paper pattern, joining fabric</b></p> <ul style="list-style-type: none"> <li>Use a graphics programme to design a space suit</li> <li>Use a simple paper pattern to draw around and cut out fabric</li> <li>Use simple joining techniques</li> </ul> <p><i>Space suit for an Astronaut</i></p>	<p><b>Cooking &amp; nutrition</b></p> <ul style="list-style-type: none"> <li>Food preparation techniques</li> <li>Combining appearance, flavour and texture</li> <li>Understand the balanced plate model for healthy eating</li> </ul> <p><i>A Greek Salad</i></p>	<p><b>Electrical Control</b></p> <ul style="list-style-type: none"> <li>Draw on understanding of simple electrical circuits and switches</li> <li>Join components, cut and shape material with precision</li> </ul> <p><i>An alarm system for a precious artefact</i></p>	<p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>Understand the function and properties of materials</li> <li>Identify, select and use food tools and techniques safely</li> <li>Understand food hygiene</li> </ul> <p><i>Making bread</i></p>	<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>Design for a range of needs – appearance, safety, size, warmth</li> <li>Use patterns, templates and detailed working drawings</li> <li>Develop finishing techniques</li> </ul> <p><i>T Shirts</i></p>



# 3. Overview: Year 1

Autumn	Cooking & nutrition <i>Fruit kebabs</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Investigate, disassemble, evaluate</li> <li>Examine and name a range of fruits, handle and smell them, sketch and label</li> <li>Cut and compare two contrasting fruits, explain terms – skin, peel , flesh and use sensory vocab to describe</li> <li>Evaluate existing products to determine which is best and why</li> <li>Classify fruits according to colour, texture, taste, where grown, how they are eaten</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Discuss food hygiene practices</li> <li>Name and demonstrate use of simple tools</li> <li>Survey favourite fruits and represent in bar chart</li> <li>Taste test</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Identify target group and communicate what they intend to make, based on research conducted in survey</li> <li>Select and use appropriate fruit, processes and tools</li> <li>Evaluate product - record in pictures/writing how it look, tastes and if it matches the brief</li> </ul>	Skills	<p><b>Finishing skills, including food hygiene</b></p> <ul style="list-style-type: none"> <li>Basic food handling, hygienic practices and personal hygiene, including how to control risks</li> <li>Using a variety of tools and equipment to peel, cut , grate, mix and mould food</li> <li>The nutritional value of fruit in a balanced diet</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> choosing, investigating, tasting, arranging experimenting, popular, sort, bar chart, pictogram</li> <li><b>Making:</b> washing, cleaning, peeling, cutting, slicing, grating</li> <li><b>Knowledge and understanding:</b> salad, fruit, peel, flesh, skin, grater, chopping board, peeler, seeds, pips, stalk, juice, root, leaf, stone, bunch</li> <li><b>Sensory vocab:</b> crisp, sharp, juicy, sweet, sour, squashy, smooth, crunchy, scented, waxy</li> </ul>	
		Craftspeople	Local chef	
Spring	Static structures <i>Castles</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Local area walk/visit to castle, sketching and discussion around different types of structures and how space is enclosed</li> <li>Label main features and relate to mathematical shapes</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Discuss how designers use models to develop and communicate their ideas</li> <li>Build rectangular frames using construction kits and explore ways of making them more stable e.g. a wider base, adding further parts</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Review the structure and features of a castle from work done in History</li> <li>Create design for model and say how they are going to make it</li> <li>Select from a range of materials</li> <li>Construct a model using 2D and 3D material selected to match the task</li> <li>Talk about their finished castle, identifying what has gone well and what they could have done better</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Use of scissors, snips and hole punching</li> <li>Make clear labelled drawings</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Join 2D and 3D materials- gluing , sticking, tying, fixing with split pins</li> <li>Experiment with creating hinges</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Collage, painting</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> choose, try out, discuss, drawing, label, list</li> <li><b>Making:</b> Join, fix, plan, scissors, hole punch, masking tape</li> <li><b>Knowledge and understanding:</b> structure, strong, weak, wall, roof, window, portcullis, ramparts, drawbridge, turret, hinge, square, rectangle, triangle, cube, cuboid, cylinder side , edge, surface, on top of, underneath, smaller than, larger than, symmetrical, beside, next to</li> </ul>	
		Craftspeople	Local architect	
Summer	Mechanisms <i>Book with moving parts</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Share and evaluate a range of books with moving parts – what does the part do? How does it work? Does it work well?</li> <li>Introduce levers and sliders and how they make parts move</li> <li>Show examples of how levers and pivots work and introduce key vocabulary</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Explore simple mechanisms and levers using strips of card and construction kits</li> <li>Explore ways of stiffening strips of card using pipe cleaners, straws.</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Plan story showing the evolution of a form of transport e.g. bicycle, car – which parts will move and how. Which order will things be done in?</li> <li>Create paper prototype then card version</li> <li>Evaluate how well the moving parts work, the impact on the reader and how well it matches the intended outcome</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Assemble strips of card to make levers and sliders</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Levers</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Collage, colouring</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> idea ,discuss, choose, drawing, labelling</li> <li><b>Making:</b> hole punch, paper fastener, join, cut, planning</li> <li><b>Knowledge and understanding:</b> moving, handle, lever, pivot ,pull, slider, direction, balance, movement, forward, backwards, order, sequence, length</li> </ul>	
		Craftspeople		

# 3. Overview: Year 2

Autumn	Textiles <i>Finger puppets</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Examine a range of finger puppets – what are they made of?, how are they put together? What has been added? Who are they for? How well made are they?</li> <li>Draw and label, rate an example of a finger puppet</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Explore simple ways to add features to bring puppets to life</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss purpose of finger puppets – story telling, role play, entertainment</li> <li>Agree simple criteria: must be an animal to link to science ( living things and their habitats), a good puppet should be.....</li> <li>Consider how a basic template might be adapted and sewing/fixing techniques can be used</li> <li>Make paper mock up and adjust as needed when making fabric version</li> <li>Evaluate against design criteria</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Make clear labelled drawings</li> <li>Using templates as a pre cursor to pattern making. Experiment with using a template to draw and cut out 2 identical shapes</li> <li>Cutting fabric</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Joining fabric by sewing-Practice basic sewing techniques – starting, ending, running stitch</li> </ul>
			Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> user, list, label, drawings, ideas, mock-up, choose, decide, evaluate, try out, standard unit</li> <li><b>Making:</b> plan, template, fabric, cutting out, sewing, needle, thread, running stitch, adding</li> <li><b>Knowledge and understanding:</b> seam, stitch, strong, quality, features, strengthen, reflective symmetry, position, to, towards</li> </ul>
			Craftspeople	J. Henson (Muppets creator)
Spring	Mechanisms <i>Vehicles (fire engine)</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss and list different types of vehicles and their features – why do vehicles have wheels? Are they all the same size? How many? Why are vehicles different shapes? Why do some have parts that move/light up?</li> <li>Identify parts of vehicles – wheel, axles, chassis, body, cab</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Look at pictures in books and magazines and sort into Venn based on parts identified</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Set design criteria – who is the suit for? What features are needed? Why?</li> <li>Draw out and label the design</li> <li>Use graphics program to create a template to act as a pattern</li> <li>Identify tools and materials needed and method of joining fabrics to be used</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Use of base kits/use of net for cuboid</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Try out different ways of making axle holders</li> </ul> <p><b>Mechanical and control skills</b></p> <ul style="list-style-type: none"> <li>Join wheels and axles</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Try out different finishing techniques –collage, paint, cut out shapes, computer generated images to match a design brief.</li> </ul>
			Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> purpose, user, use, explore, predict, size, shape, style, function, features- ladder, hose, siren, cab</li> <li><b>Making:</b> joining, combining, connecting, testing, attaching adding, changing</li> <li><b>Knowledge and understanding:</b> vehicle, wheels, chassis, axle, doweling, hole punch, logo, distance,</li> </ul>
			Craftspeople	Local museum of transport
Summer	Textiles <i>A suit for an astronaut</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Look at images/video of component parts of a space suit</li> <li>Discuss types of fabric used and their properties</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Become familiar with paint or draw software package</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Set design criteria – who is the suit for? What features are needed? Why?</li> <li>Draw out and label the design</li> <li>Use graphics program to create a template to act as a pattern</li> <li>Identify tools and materials needed and method of joining fabrics to be used</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Make clear labelled drawings</li> <li>Using paper patterns on fabric- pinning, tracing around outline of component parts</li> <li>Cutting with precision</li> <li>Using computer graphics drawing packages as part of the design process</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Fabric joining techniques – lacing, stitching, stapling, gluing, taping</li> </ul>
			Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> discuss , select, choose, try out, ideas, adapt, adaptations, experiment, evaluate, mock up, predict, properties, reasons, comfort, practical, light weight, flexible, tough, warm, heat proof</li> <li><b>Making:</b> pin, pattern, parts, join, cut, measure, shape, fabric, template, needle, thread, ruler, tape measure</li> <li><b>Knowledge and understanding:</b> outline, stitch, strengthen, quality, seam, centre, side, panel, line,</li> <li><b>Sensory vocab:</b></li> </ul>
			Craftspeople	Amy Ross (NASSA)



# 3. Overview: Year 3

Autumn	Free standing structures <i>Photo frame</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Investigate free standing item – why is it important they are stable? How does this relate to their purpose? Would they work if they were not strong and stable?</li> <li>Consider how photo frames stand up, look at range of examples</li> <li>Consider design features relating to its purpose – how easy is it to insert a photo? How well can it be seen? Who would use it? How does this link to the style/finish of the frame?</li> <li>Identify component parts and label drawings</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Use construction kit to investigate building stable structures –chair/bridge</li> <li>Make free standing photo frame shape from pipe cleaners and a sheet of card/paper</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Consider design criteria – who is the frame for? How will it stand up?, How will the photo be added? What shape will it be? Where will the weak points be? How will they be reinforced and decorated? Sketch and label design.</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Developing ideas through precise and labelled drawings</li> <li>Use of a junior hacksaw</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Mitre joint</li> <li>Stiffening materials and making stable structures - rolling, folding, and layering, reinforcing corners</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Collage, painting, decoupage, varnishing for durability</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> user, choice, decoration quality, component parts, purpose, size, shape, orientation</li> <li><b>Making:</b> planning, order, rolling, layering, cutting, mitre, joint, cutting finish, board, bolsar</li> <li><b>Knowledge and understanding:</b> stable, free standing, stiffen, frame, sturdy, reinforce, deep, narrow, shallow, thick, thin, distance, align, margin</li> </ul>	<p><b>Craftspeople</b></p> <p>Visit to a local Art gallery</p>
Spring	Mechanisms and control <i>Pneumatics (moving monsters)</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Look at objects that use air to make them work – recorder, pump, party blower – What does the air do? How has this been used in the design of these products?</li> <li>Demonstrate simple pneumatic systems with a balloon and tubing, x2 syringes</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Explore making a pneumatic system with either balloons or syringes and tubing</li> <li>Revise making hinges</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss the design brief – consider what the monster needs to be able to do e.g. open its mouth, lift its head, move its wings. How big will it be?, How will the movement be achieved? What materials are needed? Audience/user?</li> <li>Consider the constraints – weight, stability, range of materials available,</li> <li>Complete detailed and labelled drawings</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Consider the limitations on scale and scope of design ideas and reflect these in precise, labelled drawings</li> <li>Work safely with a range of hand tools</li> </ul> <p><b>Mechanical and control skills</b></p> <ul style="list-style-type: none"> <li>Understand how pneumatic systems work</li> <li>Understand how simple levers work</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Extend understanding of ways of fixing and joining components and selecting most appropriate for a given task</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> mind map, suggestion, evaluate, ideas, constraints, limitations, possible, impossible, probable, likely</li> <li><b>Making:</b> Planning, storyboarding, components, pieces, fixing, syringe, tubing, attaching, finishing, decorating</li> <li><b>Knowledge and understanding:</b> control, pneumatic, system, pressure, inflate, deflate, output, pump, hinge, fastest, slowest, often, always, sometimes, never</li> </ul>	<p><b>Craftspeople</b></p> <p>R. L. Stephenson (Rocket)</p>
Summer	Cooking & nutrition <i>Greek salad</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Understand the ‘balanced plate’ model of food groups, name the groups</li> <li>Look at a range of packaged salads and evaluate appearance, taste, smell, texture</li> <li>Survey the most popular choice and consider reasons for choices made</li> <li>How have the salads been packed and stored in the shops to preserve their life? Which materials have been used and why? What happens to food that is wrongly/badly packaged?</li> <li>Discuss which sorts of foods need to be kept in the fridge</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Practise using knife to cut and slice, grater safely and correctly.</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Create design from specified range of ingredients for agreed user</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Use sharp tools correctly</li> </ul> <p><b>Finishing skills, including food hygiene</b></p> <ul style="list-style-type: none"> <li>Food preparation techniques( tearing, cutting, slicing, grating) and ways of combining foods to make a product for a particular purpose</li> <li>Combining foods on the basis of taste, appearance and texture</li> <li>Understanding of a healthy and balanced diet</li> <li>Understanding of food classes</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> texture, taste, appearance, healthy,, reference, criteria, refrigeration, freezing, salting, preserving, pickling, brining</li> <li><b>Making:</b> cut, slice, grate, chop, blend, chopping board, knife, grater</li> <li><b>Knowledge and understanding:</b> ingredients, food groups, hygiene, high risk, healthy eating, food preparation, balanced plate, sensory – sweet, sour, bitter, salty</li> </ul>	<p><b>Craftspeople</b></p> <p>Jamie Oliver, Vefa Alexiadou</p>



# 3. Overview: Year 4

Autumn	Mechanisms <i>Linkages</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Look at pop up books and greetings cards with pop ups and moving parts – spinners, levers, tabs, sliders. How do the parts move? What are the mechanisms and how do they work? Number of parts? How are parts joined? What is the impact made?</li> <li>Look at layout, size, font used for text and how pictures, colour has been used</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Model different types of mechanism using paper/card, split pins, paper clips, drawing pins</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Set design brief – A guide to the rainforest with pop ups and moving parts for a child</li> <li>What mechanisms will be used? How many moving parts? How many pages?</li> <li>Consider the way each page will be finished.</li> <li>Make an outline plan, list tools materials and processes and set the order of making</li> <li>Evaluate</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Begin to develop alternative ideas, using drawings, plans and models and make choices between them</li> <li>Measuring accurately, marking out, cutting, folding, scoring,</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Understand linkage mechanisms and the type of movement they produce</li> <li>Relate a mechanism to its purpose and select for a desired type of movement</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Collage, printing, drawing, use of font, size, colour, layout. Understand what makes a quality finish</li> </ul>	<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> model, mock up, plan, fit for purpose</li> <li><b>Making:</b> fold, adhesive, score, cut, join, temporary fixing, permanent fixing</li> <li><b>Knowledge and understanding:</b> linkage, level, pivot, flexible, shape, joint, hinge, area, surface, cover, linear and rotary movement</li> </ul>	<p><b>Craftspeople</b></p> <p>Matthew Rhinehart</p>		
		Spring	Textiles <i>Purse for Rio carnival</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Look at a collection of purses, wallets and belt bags. Consider the seams, seam allowance, fastenings and identify key parts – gusset, strap, hem</li> <li>What sort of fabric is used? How does this relate to its purpose? How is it reinforced? Who is it used by?</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Practise running stitch, back stitch, starting and finishing, weaving and knitting on pieces of fabric – Which is strongest and why?</li> <li>Discuss the properties of different types of fabric and select one suitable for the task</li> <li>Practise with different types of fastening and select one suitable for the task</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Set design criteria- draw up a design spec with alternative ideas, final drawings and action plan</li> <li>Review progress – How well is this working? Are changes to the design needed?</li> <li>Evaluate finished product</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Using patterns and templates with more than 2 pieces</li> <li>Begin to develop alternative ideas, using drawings, plans and models and make choices between them</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Joining and reinforcing fabrics</li> <li>Demonstrate fabric can be joined in a number of different ways – sewing using a range of stitches</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Use decorative techniques such as dyeing and embroidery, embellishing, applique, fabric paints, fastenings</li> </ul>	<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> user, purpose, design criteria, alternatives, model, specification, stiffening, reinforcement</li> <li><b>Making:</b> pattern, template, strength, support</li> <li><b>Knowledge and understanding:</b> fabric, fastening (and related types), compartment</li> </ul>	<p><b>Craftspeople</b></p> <p>Jackie Gale</p>
				Summer	Electrical control <i>Alarms</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss examples of alarm systems – when and where they are used and what for.</li> <li>Discuss dangers of mains electricity</li> <li>Look at and take apart a range of commercially produced switches which work in different ways – slide, reed, tilt, push to make, push to break</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Experiment with producing circuits that are triggered in some way e.g. someone treading on something or lifting something, including using a computer programme</li> <li>Discuss the idea of 'feedback' in an alarm system e.g. motion sensors trigger bell to ring</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Consider the design brief – What type of circuit and switch will be used? How will a control box or programme be used? Action plan</li> <li>Create a proto type and review how well it works. Review during the process, Test</li> <li>Evaluate final product linking back to the design brief</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Develop digital working prototypes</li> </ul> <p><b>Mechanical and control skills</b></p> <ul style="list-style-type: none"> <li>Understand simple electrical control.</li> <li>Understand how to use digital technology to produce simulations using a computer control programme – inputs and outputs,</li> </ul>

# 3. Overview: Year 5

Autumn	Structures <i>Musical instruments</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss a range of musical instruments – what are they made of? What is the structure (solid or hollow), does it have a box/stem/arm? What part makes the noise? Which parts need to be strong? How can the sounds be varied?</li> <li>Why are instruments so important to different cultures? Listen to the sounds they make/music from different cultures showcasing the different instruments.</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Experiment with making sounds using a range of containers and other resources that can be combined to create shakers, scrapers, strings, drums</li> <li>Discuss the properties of the material, how they can be strengthened and the sounds made when they are combined</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Identify a purpose for the instrument, e.g. to create rainforest music, which design aspects and set and which are flexible (materials)</li> <li>Select way to record their ideas so others will understand them</li> <li>Set order for making</li> <li>Evaluate against design criteria</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Understand the working characteristics of materials and how this links to the product's intended purpose, selecting appropriately</li> <li>Begin to make choices about the way design ideas are presented</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Understand how different materials can be reinforced for different purposes</li> <li>Assemble materials in temporary ways as a trial prior to finalizing design choices</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Select appropriate methods and resources for finishing a design that reflect the intended use, cultural, geographical or historical influences</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> investigate, plan, research, texture, intention, structure, outcome</li> <li><b>Making:</b> mouldable material, adhesive, wood glue, shaping, cutting, flexible, strong, pliable solid, hollow</li> <li><b>Knowledge and understanding:</b> sound, note, pitch, duration, dynamics, tempo, timbre, strengthen, reinforce,</li> </ul>	
		Craftspeople	Local music shop/concert hall; peripatetic music teacher	
Spring	Mechanisms <i>Moving toys (Roman siege machine)</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Investigate toys with cams – which parts turn, move and how are the parts attached?</li> <li>Look at the decoration around the mechanism</li> <li>Make models using construction kits and consider the use of a cam (refer to above question)</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Try assembling different shaped cams using card and split pins and observe their movement- how does it change depending on the shape of the cam?</li> <li>Discuss and demonstrate safety aspects of using a bench hook and drill</li> <li>Demonstrate need to measure accurately when mounting the mechanism, how to keep cam in place and how to use a wheel to make a handle</li> <li>Experiment adding holes for fixings with opened out cardboard boxes</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Agree the design brief – purpose and audience</li> <li>Create storyboard plan- step by step order, identifying materials and tools needed and desired finish</li> <li>Review progress – How well is this working? Are changes to the design needed?</li> <li>Evaluate finished product</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Measure accurately (when marking out and drilling holes and mounting the cam)</li> <li>Using sharp tools safely – paper drill, hole punch</li> <li>Design planning using a storyboard</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Planning ahead, anticipating future actions e.g. using nets to pre-drill holes</li> <li>Cut and join parts to a main structure</li> </ul> <p><b>Mechanisms and control</b></p> <ul style="list-style-type: none"> <li>Understand how to control movement with a cam mechanism</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> sequence, annotated, diagram, sketch, storyboard, choice, decision, prototype, model</li> <li><b>Making:</b> shape, assemble, accurate, saw, bench hook, clamp, drill, wheels</li> <li><b>Knowledge and understanding:</b> cam, follower, mechanism, movement linear and rotary motion, pivot, off centre, axle, force, framework, shaft</li> </ul>	
		Craftspeople	Toymakers guild	
Summer	Cooking & nutrition <i>Bread</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Look at a variety of breads from around the world and cultural traditions</li> <li>Discuss taste, shape, ingredients, texture, survey preferences</li> <li>Understand how bread fits into a balanced diet</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Experiment with different types of flour and adding different ingredients to bread dough – raisins, choc chips. Try shaping dough and adding different toppings-eg seeds</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Decide what kind of bread to make and for what sort of occasion</li> <li>Create ingredients list and step by step instructions</li> <li>Make and bake bread, working hygienically and safely</li> <li>Evaluate finished product.</li> </ul>	Skills	<p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Create own design specification</li> </ul> <p><b>Finishing skills, including food hygiene</b></p> <ul style="list-style-type: none"> <li>Accurate measuring and weighing skills, understand that the properties and quantities of ingredients will affect the final product</li> <li>Increased awareness of food safety and hygiene, including the use of ovens</li> </ul>
		Examples and vocabulary	<ul style="list-style-type: none"> <li><b>Designing:</b> evaluating, investigation, preference, profile, specification, criteria, fair test</li> <li><b>Making:</b> ingredients, quantities, shaping, mixing, topping, kneading, proving, baking, cooking method, glazing, washing</li> <li><b>Knowledge and understanding:</b> Yeast, wheat, grain, flour, dough, crust, rise</li> </ul>	
		Craftspeople	Paul Hollywood; local bakery	

# 3. Overview: Year 6

Autumn	Structures <i>Aqueducts</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Investigate a range of structures – What materials used? Why? How have they been used? What do the different parts do? Which structures are the strongest?</li> <li>Research structure of aqueducts – produce labelled drawings</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Investigate strengthening a square structure with diagonals and triangles, test</li> <li>Experiment with ways of joining materials-plastic, paper, wood, fabric</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss brief of designing an aqueduct to contain water and transport a model boat</li> <li>Revise findings re how to strengthen structures</li> <li>Develop idea through drawings and models – How will it stand up? Where are the weak points? How will they be reinforced? it stop water from leaking? Test and adjust</li> <li>Make and evaluate against the brief</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Produce several clear design ideas with step by step instructions and resources needed</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Know that structures can fail when loaded</li> <li>Know how to reinforce structures and to research info about this from a range of sources</li> <li>Use a variety of temporary and permanent joining techniques, including framework, materials and textiles.</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> exploded diagrams, improvements, modify, alternative proposal</li> <li><b>Making:</b> strength, material, triangle, diagonal, bracket, vertical, horizontal, tension, bending, twisting</li> <li><b>Knowledge and understanding:</b> reinforce, points of weakness/tension, waterproofing</li> </ul>	<p><b>Craftspeople</b></p> <p>Sir Edward Leader Williams</p>
Spring	Mechanisms <i>Controllable vehicle (Viking longboat)</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Experiment with controllable vehicles and consider – Where does the power come from? Compare similarities and differences</li> <li>How are the models constructed and component parts joined together? Draw and label diagrams from a range of angles (include example of an airboat)</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Investigate a range of switches and how they work – build examples</li> <li>Investigate using a motor to power a fan – how can this produce forward motion? Experiment with paper, motors to create forward motion, how can we change speed and direction? Demonstrate the use of equipment - e.g. wire cutters,/strippers, mounting clips, connector strips</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss design brief – an airboat Viking long ship and consider needs of the user</li> <li>Create designs vis drawings and models, make adjustments after testing</li> <li>Evaluate final product against the brief</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Draw and label diagrams from different view points</li> </ul> <p><b>Mechanical and control skills</b></p> <ul style="list-style-type: none"> <li>Understand how products can be driven by electricity</li> <li>Control speed and direction</li> <li>Use different sorts of switches</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Assembling components to make working models</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Develop a structure with finishing techniques including cladding</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> exploded diagrams, improvements, modify, view point</li> <li><b>Making:</b> cutting, cladding, finishing, assembling, components</li> <li><b>Knowledge and understanding:</b> circuit, series, parallel, control, motor, chassis, connection, switch, spindle, fan, motor mounting clip</li> </ul>	<p><b>Craftspeople</b></p> <p>Yorvik museum</p>
Summer	Textiles <i>T-shirts</i>	<p><b>Investigate, disassemble, evaluate</b></p> <ul style="list-style-type: none"> <li>Collect and discuss a range of T shirts – Who are they for? How do you know? What are they made of? How have they been finished? Consider how designs deal with warmth, fit, appearance, practicality, function, cost and safety</li> </ul> <p><b>Focused practical task</b></p> <ul style="list-style-type: none"> <li>Discuss how patterns, templates are used to create garments and how stencils, dyeing, and embellishments are used to decorate them</li> <li>Practice sewing a button, sequins, braid, a pocket to a piece of fabric and stenciling a word by painting inside and around stencil</li> </ul> <p><b>Design and make, evaluate</b></p> <ul style="list-style-type: none"> <li>Discuss the design brief, identifying the user, their needs and the product's purpose</li> <li>Create detailed drawings from a range of angles – front, back, sleeves, motif, logo</li> <li>Review design .during making process and evaluate final product against the brief</li> </ul>	<p><b>Skills</b></p> <p><b>Marking out and cutting</b></p> <ul style="list-style-type: none"> <li>Understand that designers must address a range of needs when designing clothing – warmth, fit, appearance, practicality, function, cost and safety</li> </ul> <p><b>Fixing and joining</b></p> <ul style="list-style-type: none"> <li>Use known skills e.g. applique,, cutting, embellishing, fabric gluing, stenciling and extend to include dyeing and machine sewing</li> </ul> <p><b>Finishing</b></p> <ul style="list-style-type: none"> <li>Distinguish between functional and decorative products</li> </ul>
		<p><b>Examples and vocabulary</b></p> <ul style="list-style-type: none"> <li><b>Designing:</b> specification, flow chart, mood board, mock up, user, swatches, working drawing</li> <li><b>Making:</b> pattern/template</li> <li><b>Knowledge and understanding:</b> seam, seam allowance, right side/wrong side, stitch, stitching, tacking, wadding, sewing machine, hem, pocket, zip, embellishment, logo, transfer, motif, graphics, lettering, tassels, sleeves, vest</li> </ul>	<p><b>Craftspeople</b></p> <p>Vivienne Westwood, Paul Frank, Iman Aldebe, Hana Tajima</p>

# 3. Overview: Disciplinary Knowledge

	Marking out and cutting	Fixing and joining	Mechanisms and control	Finishing, including food hygiene
Y1	<ul style="list-style-type: none"> <li>• Safe use of simple tools to punch to cut and make holes materials</li> </ul>	<ul style="list-style-type: none"> <li>• Joining 2D and 3D materials- gluing , sticking,</li> <li>• Tying, fixing with split pins</li> <li>• Creating basic hinges</li> <li>• Creating levers and sliders</li> <li>• Understanding of structures and how these can be made stronger and more stable</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding simple mechanisms that allow movement – sliding mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Basic food handling, hygienic practices and personal hygiene, including how to control risks</li> <li>• Safe use of a variety of tools and equipment to peel, cut , grate, mix and mould food</li> <li>• The nutritional value of food stuffs in a balanced diet</li> <li>• Know about and apply basic finishing techniques e.g. collage, painting, colouring to match a design brief.</li> </ul>
Y2	<ul style="list-style-type: none"> <li>• Using templates and patterns on fabric, pinning, tracing around outline of component parts . Experimenting with using a template to draw and cut out 2 identical shapes</li> <li>• Applying basic measuring skills</li> <li>• Cutting fabric with precision</li> <li>• Use of simple models e.g. base kits/use of nets to plan out use of space or a structure might be marked out in order to be made</li> </ul>	<ul style="list-style-type: none"> <li>• Developing basic sewing techniques – starting, ending, running stitch to join fabric</li> <li>• Developing a range of techniques for joining fabric- lacing, stitching, stapling, gluing, taping</li> <li>• Joining wheels and axels</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding simple mechanisms that allow movement - winding mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Know about and apply different finishing techniques – collage, paint, cut out shapes, computer generated images to match a design brief.</li> </ul>

# 3. Overview: Disciplinary Knowledge

	Marking out and cutting	Fixing and joining	Mechanisms and control	Finishing, including food hygiene
Y3	<ul style="list-style-type: none"> <li>Work safely with a range of hand tools incl junior hacksaw</li> </ul>	<ul style="list-style-type: none"> <li>Extend understanding of ways of fixing and joining components and selecting most appropriate for a given task</li> <li>Understanding how to make stable structures - rolling, folding, and layering, reinforcing corners, cutting a mitre joint</li> </ul>	<ul style="list-style-type: none"> <li>Understanding how pneumatic systems work</li> <li>Revising how simple levers work</li> </ul>	<ul style="list-style-type: none"> <li>Know about and apply different finishing techniques –collage, paint, cut out shapes, decoupage, varnishing for durability.</li> <li>Understanding of food preparation techniques( tearing, cutting, slicing, grating) and ways of combining foods to make a product for a particular purpose</li> <li>Combining foods on the basis of taste, appearance and texture</li> <li>Understanding of different food groups within a healthy and balanced diet</li> </ul>
Y4	<ul style="list-style-type: none"> <li>Measuring accurately, marking out, cutting, folding, scoring,</li> <li>Using patterns and templates with more than 2 pieces</li> </ul>	<ul style="list-style-type: none"> <li>Relate a mechanism to its purpose and select for a desired type of movement</li> <li>Joining and reinforcing fabrics</li> <li>Demonstrating fabric can be joined in a number of different ways – sewing using a range of stitches</li> </ul>	<ul style="list-style-type: none"> <li>Understanding linkage mechanisms and the type of movement they produce</li> <li>Applying knowledge about electrical circuits in designing and making products</li> </ul>	<ul style="list-style-type: none"> <li>Understanding what makes a quality finish- collage, printing, drawing, use of font, size, colour, layout .</li> <li>Using a widening range of decorative techniques such as dyeing and embroidery, embellishing, applique, fabric paints, fastenings ( buttons, buckles, press studs, hooks and eyes, Velcro, safety pins, zip, ties</li> </ul>
Y5	<ul style="list-style-type: none"> <li>Measuring accurately, marking out, cutting, folding, scoring, drilling and mounting structures</li> <li>Using a range of sharp tools safely – paper drill, hole punch</li> </ul>	<ul style="list-style-type: none"> <li>Understanding how different materials can be reinforced for different purposes</li> <li>Assembling materials in temporary ways as a trial prior to finalizing design choices</li> <li>Cutting and joining component parts to a main structure</li> </ul>	<ul style="list-style-type: none"> <li>Understanding how to control movement with a cam mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Selecting appropriate methods and resources for finishing a design that reflect the intended use, cultural, geographical or historical influences</li> <li>Accurate measuring and weighing skills, understanding that the properties and quantities of ingredients will affect the final product</li> <li>Increased awareness of food safety and hygiene, including the use of ovens</li> <li>Exploring the functions and properties of ingredients</li> </ul>
Y6	<ul style="list-style-type: none"> <li>Making accurate patterns and templates</li> <li>Using a range of tool and techniques for marking out, measuring and cutting a range of sheet materials, wood, plastic, fabric</li> </ul>	<ul style="list-style-type: none"> <li>Knowing that structures can fail when loaded</li> <li>Knowing how to reinforce structures and to research info about this from a range of sources</li> <li>Using a variety of temporary and permanent joining techniques, including framework, materials and textiles.</li> <li>Assembling components to make working models</li> <li>Using known skills e.g. applique,, cutting, embellishing, fabric gluing, stenciling and extend to include dyeing and machine sewing</li> </ul>	<ul style="list-style-type: none"> <li>Understanding how products can be driven by electricity</li> <li>Understanding of how to control speed and direction</li> <li>Understanding how different sorts of switches can be used to control electrical current</li> </ul>	<ul style="list-style-type: none"> <li>Developing a structure with finishing techniques including cladding</li> <li>Distinguish between functional and decorative products</li> </ul>

# 3. Overview: Vertical concepts

	Investigate, disassemble, evaluate	Focused practical task	Design and make, evaluate
Y1	<ul style="list-style-type: none"> <li>Examine and name a range of products, handle and smell them, sketch and label</li> <li>Consider how the way one part moves/works affects other parts of the product</li> <li>Compare two contrasting products, explain key terms and use sensory vocab to describe</li> <li>Introduce levers and sliders and how they make parts move</li> <li>Show examples of how mechanisms work and introduce key vocabulary</li> <li>Evaluate existing products to determine which is best and why</li> <li>classify products according to colour, texture, taste, where grown, how they are eaten</li> <li>Conduct local area walk/visit , sketching and discussion around different types of structures and how space is enclosed</li> </ul>	<ul style="list-style-type: none"> <li>Discuss food hygiene practices</li> <li>Name and demonstrate use of simple tools</li> <li>Survey favourite products and represent in bar chart</li> <li>Test and categorise products – e.g by taste</li> <li>Discuss how designers use models to develop and communicate their ideas</li> <li>Build rectangular frames using construction kits and explore ways of making them more stable e.g. a wider base, adding further parts</li> <li>Explore simple mechanisms and levers using strips of card and construction kits</li> <li>Explore ways of stiffening strips of card using pipe cleaners, straws.</li> </ul>	<ul style="list-style-type: none"> <li>Making design choices based on the properties of different materials to make a produce for a particular occasion or user</li> <li>Making clear labelled drawings to communicate design ideas</li> <li>Evaluating the final product against the design brief</li> </ul>
Y2	<ul style="list-style-type: none"> <li>Examine a range of products – what are they made of?, how are they out together? What has been added? Who are they for? How well made are they?</li> <li>Draw and label, rate an example of a given product</li> <li>Discuss and list different types of vehicles and their features – why do vehicles have wheels? Are they all the same size? How many? Why are vehicles different shapes? Why do some have parts that move/light up?.</li> <li>Identify parts of vehicles – wheel, axels, chassis, body, cab</li> <li>Look at images/video of component parts of a space suit</li> <li>Discuss types of fabric used and their properties</li> </ul>	<ul style="list-style-type: none"> <li>Explore simple ways to add features to bring products( puppets) to life/understand how a user would interact with a product</li> <li>Look at pictures in books and magazines and sort products into Venn Diagrams based on parts identified</li> <li>Become familiar with paint or draw software package</li> </ul>	<ul style="list-style-type: none"> <li>Making design choices based on the properties of different materials to make a produce for a particular occasion or user</li> <li>Making clear labelled drawings to communicate design ideas</li> <li>Evaluating the final product against the design brief</li> </ul>



# 3. Overview: Vertical concepts

	Investigate, disassemble, evaluate	Focused practical task	Design and make, evaluate
Y3	<ul style="list-style-type: none"> <li>Investigate free standing items – why is it important they are stable? How does this relate to their purpose? Would they work if they were not strong and stable?</li> <li>Consider how photo frames stand up, look at range of examples</li> <li>Consider design features relating to a product's purpose .</li> <li>Identify component parts and label drawings</li> <li>Look at objects that use air to make them work &amp; demonstrate simple pneumatic systems with a balloon and tubing, x2 syringes</li> <li>Understand the 'balanced plate' model of food groups, name the groups</li> <li>Look at a range of packaged products and evaluate appearance, taste, smell, texture</li> <li>Survey the most popular choice and consider reasons for choices made, display results in range of charts/tables</li> </ul>	<ul style="list-style-type: none"> <li>Use construction kit to investigate building stable structures</li> <li>Make free standing frame shape from pipe cleaners and a sheet of card/paper</li> <li>Explore making a pneumatic system with either balloons or syringes and tubing</li> <li>Revise making hinges</li> <li>Practise using knife to cut and slice</li> <li>Use a grater safely and correctly</li> </ul>	<ul style="list-style-type: none"> <li>Making design choices based on the properties of different materials to make a produce for a particular occasion or user</li> <li>Making clear and precise labelled drawings to communicate design ideas</li> <li>Developing design proposals and ways to proceed</li> <li>Consider the limitations on scale and scope of design ideas</li> <li>Evaluating the final product against the design brief</li> </ul>
Y4	<ul style="list-style-type: none"> <li>Look at pop up books and greetings cards with pop ups and moving parts – spinners, levers, tabs, sliders. How do the parts move? What are the mechanisms and how do they work? Number of parts? How are parts joined? What is the impact made?</li> <li>Look at layout, size, font used for text and how pictures, colour has been used?</li> <li>Look at a collection of purses, wallets and belt bags. Consider the seams, seam allowance, fastenings and identify key parts – gusset, strap, hem. What sort of fabric is used? How does this relate to its purpose? How is it reinforced? Who is it used by?</li> <li>Discuss examples of alarm systems – when and where they are used and what for.</li> <li>Discuss dangers of mains electricity</li> <li>Look at and take apart a range of commercially produced switches which work in different ways – slide, reed, tilt, push to make, push to break</li> </ul>	<ul style="list-style-type: none"> <li>Model different types of mechanism using paper/card, split pins, paper clips, drawing pins</li> <li>Practise running stitch, back stitch, starting and finishing, weaving and knitting on pieces of fabric – Which is strongest and why?</li> <li>Discuss the properties of different types of fabric and select one suitable for the task</li> <li>Practise with different types of fastening and select one suitable for the task</li> <li>Experiment with producing circuits that are triggered in some way e.g. someone treading on something or lifting something, including using a computer programme</li> <li>Discuss the idea of 'feedback' in an alarm system e.g. motion sensors trigger bell to ring</li> </ul>	<ul style="list-style-type: none"> <li>Making design choices based on the properties of different materials to make a produce for a particular occasion or user</li> <li>Making clear and precise labelled drawings to communicate design ideas</li> <li>Begin to develop alternative ideas, using drawings, plans and models and make choices between them</li> <li>Evaluating the final product against the design brief</li> </ul>





# 3. Overview: Vertical concepts

	Investigate, disassemble, evaluate	Focused practical task	Design and make, evaluate
Y5	<ul style="list-style-type: none"> <li>Discuss a range of products ( musical instruments/bread) – what are they made of ? What is the structure ( solid or hollow), does it have a box/stem/arm? What part makes the noise? Which parts need to be strong? How can the sounds be varied?</li> <li>Why are instruments/food stuffs so important to different cultures? Listen to the sounds they make/music from different cultures showcasing the different instruments, discuss taste, ingredients, texture</li> <li>Survey product preferences in different user groups and select method of recording and displaying results that is appropriate to the task</li> <li>Investigate toys with cams – which parts turn, move and how are the parts attached?</li> <li>Look at the decoration around the mechanism</li> <li>Make models using construction kits and consider the use of a specific mechanism ( cam )</li> <li>Understand how bread fits into the concept of a balanced diet</li> </ul>	<ul style="list-style-type: none"> <li>Experiment with making sounds using a range of containers and other resources that can be combined to create shakers, scrapers, strings, drums</li> <li>Discuss the properties of the material, how they can be strengthened and the sounds made when they are combined</li> <li>Try assembling different shaped cams using card and split pins and observe their movement- how does it change depending on the shape of the cam?</li> <li>Discuss and demonstrate safety aspects of using a bench hook, Gcramp and drill</li> <li>Demonstrate need to measure accurately when mounting the mechanism, how to keep cam in place and how to use a wheel to make a handle</li> <li>Experiment adding holes for fixings with opened out cardboard boxes</li> <li>Experiment with different types of flour and adding different ingredients to bread dough – raisins, choc chips. Try shaping dough and adding different toppings, e.g. seeds</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the working characteristics of materials and how this links to the product’s intended purpose , selecting appropriately</li> <li>Beginning to make choices about the way design ideas are presented, creating own design specifications</li> <li>Begin to develop alternative ideas, using drawings, plans and models and make choices between them</li> <li>Reviewing and adjusting design ideas mid process</li> <li>Planning ahead, anticipating future actions e.g. using nets to pre drill holes</li> <li>Evaluating the final product against the design brief</li> </ul>
Y6	<ul style="list-style-type: none"> <li>Investigate a range of structures – What materials used? Why? How have they been used? What do the different parts do? Which structures are the strongest?</li> <li>Research structure of aqueducts – produce labelled drawings</li> <li>Experiment with controllable vehicles and consider – Where does the power come from? Compare similarities and differences</li> <li>How are the models constructed and component parts joined together? Draw and label diagrams from a range of angles ( include example of an airboat)</li> <li>Collect and discuss a range of T shirts – Who are they for? How do you know? What are they made of? How have they been finished? Consider how designs deal with warmth, fit, appearance, practicality, function, cost and safety</li> </ul>	<ul style="list-style-type: none"> <li>Investigate strengthening a square structure with diagonals and triangles, test</li> <li>Experiment with ways of joining materials-plastic, paper, wood , fabric</li> <li>Investigate a range of switches and how they work – build examples</li> <li>Investigate using a motor to power a fan – how can this produce forward motion? Experiment with paper, motors to create forward motion, how can we change speed and direction? Demonstrate the use of equipment, e.g. wire cutters/strippers, mounting clips, connector strips</li> <li>Discuss how patterns, templates are used to create garments and how stencils , dyeing, and embellishments are used to decorate them</li> <li>Practice sewing a button, sequins, braid, a pocket to a piece of fabric and stenciling a word by painting inside and around stencil</li> </ul>	<ul style="list-style-type: none"> <li>Producing several clear design ideas and working diagrams with step by step instructions and resources needed</li> <li>Draw and label diagrams from different view points to own design brief</li> <li>Understand that designers must address a range of needs when designing clothing – warmth, fit, appearance, practicality, function, cost and safety</li> <li>Begin to develop alternative ideas, using drawings, plans and models and make choices between them</li> <li>Reviewing and adjusting design ideas mid process</li> <li>Planning ahead, anticipating future actions e.g. using nets to pre drill holes</li> <li>Evaluating the final product against the design brief</li> </ul>



# 4. Transitions and ensuring continuity

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## Moving to a new curriculum

- As we transition to a new curriculum, we are aware that there will be some gaps in pupils' knowledge and conceptual understanding.
- Teachers will take this into account at the start of a new unit when they check for prior knowledge.
- Units will need to be adapted slightly at the start to take account of this, but teachers should ensure that the key knowledge and concepts from the new unit are applied and understood by pupils.

## Dos and don'ts

### Do

- Stick to one scheme
- Ensure that staff are teaching what the curriculum says

### Don't

- Mix and match between schemes
- Change units between year groups

### Consider

- If you are changing your curriculum, any interim units must be for this year only.
- Full planning **must** be in place for September 2020.