



Osgodby Primary School Progression of skills and concepts: Design and Technology

EYFS - Characteristics of Effective Learning	EYFS - Early Learning Goals
Show curiosity about objects, events and people. Questions why things happen. Engage in open-ended activity. Thinking of ideas. Find ways to solve problems / find new ways to do things / test their ideas. Use senses to explore the world around them. Create simple representations of events, people and objects. Planning, making decisions about how to approach a task, solve a problem and reach a goal Checking how well their activities are going. Changing strategy as needed. Reviewing how well the approach worked./	Choose the resources they need for their chosen activities. Handle equipment and tools effectively. Children know the importance for good health of a healthy diet They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology.
Designing: Understanding contexts, users and purposes	
By the end of Key Stage 1 children should:	By the end of Key Stage 2 children should:
- work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment Examples of classroom practice: - Children in Y2 are given the problem of designing and making a hat to stop Teddy getting sunburnt in the summer. - Children in Y1 are challenged to design and make a stronger, more stable chair for Baby Bear using construction materials, construction kits and textiles. Other examples of projects carried out within imaginary or story-based contexts include: - Designing and making a trolley to carry the Teddy bears' picnic to the park - Designing and making vehicles for Bob the Builder - Designing and making a coat for Katie the class doll - Designing and making a Shaun the Sheep storyboard with moving pictures - Designing and making a new bridge for Billy Goats Gruff - Designing and making a safety jacket that helps Teddy to be seen at night Examples of classroom practice: - After a class visit to the local park, children in Y2 are given the challenge of turning the park into a playground by designing and making small-scale freestanding play equipment suitable for young children. - Following a visit to the local library, Y1 children design and make books with flaps and sliders that can be displayed and read in the school library. - Following a visit to the local farm, Y2 children are inspired to design and make a range of toy farm vehicles suitable for the children in Nursery and Reception to play with. Other examples of projects carried out within the context of the local community, industry or the wider environment include: - Designing and making fruit drinks for a local supermarket following a class visit - Designing and making a small-scale carnival float for the local parade	- work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment - describe the purpose of their products Examples of classroom practice: Designing and making packaging to protect and market fragile objects that are on sale Designing and making healthy, seasonal soup recipes that the school cook could make for lunch Designing and making bird hides to observe wildlife in the school garden Designing and making an attractive display with moving parts for a shop window Example questions for children: - What is your product for? - What task or tasks will your product perform? - How will your product solve the design problem? - How will your product meet the design challenge? - How will you make your product fit for purpose? - Will your product have to fulfil conflicting requirements? If so, what are they and how will you overcome them? - Where will your product be used? - When will your product be used? - How well do you think your product will meet its intended purpose? • indicate the design features of their products that will appeal to intended users For example: - Designing and making a personalised bag for a teenager – considering the appearance and finishing techniques used - Designing and making savoury scones for grandparents – considering taste, texture, aroma and ingredients used



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• <i>Designing and making toy emergency service vehicles after a visit by the fire brigade</i> • <i>Designing and making toy enclosures for farm animals after a visit to a local farm</i> • <i>Designing and making small-scale park furniture after a visit to the local park</i> • <i>Designing and making greeting cards with simple moving parts to put on sale in the class shop</i> • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas	• <i>Designing and making a desk tidy for younger children – considering cost, size, shape, weight and strength</i> • <i>explain how particular parts of their products work</i> In early KS2 pupils should also: • gather information about the needs and wants of particular individuals and groups Example questions: • <i>What do the intended users need?</i> • <i>What do the users want?</i> • <i>Do the users have any particular interests or hobbies?</i> • <i>Do the users have any particular dietary requirements?</i> • <i>What is the age of the intended users?</i> • <i>What do we know about the users' everyday lives?</i> • <i>What sorts of products do users already find helpful?</i> • <i>What can we do to make the users' lives better?</i> • develop their own design criteria and use these to inform their ideas In late KS2 pupils should also: • carry out research, using surveys, interviews, questionnaires and web-based resources Examples of practice: • <i>Children in Year 5 use a questionnaire to discover the favourite soups of all children in the school before designing and making a seasonal soup for the school cook to prepare and serve at lunchtime.</i> • <i>Using relevant websites, Year 6 children research different bread recipes from a range of cultures and countries as a basis for their own designing and making.</i> • <i>To inform their designing and making, Year 5 children investigate and make annotated sketches of a range of portable and permanent frame structures, e.g. tents, bus shelters, umbrellas. To find out about a wider range of products that use frameworks, they use secondary sources, including web-based research.</i> • <i>Before designing and making a new, small-scale fairground ride, Year 6 children use the internet to carry out research into the most popular rides, why they might appeal to intended users and the type of movement they produce.</i> • identify the needs, wants, preferences and values of particular individuals and groups • develop a simple design specification to guide their thinking
Designing: Generating, developing, modelling and communicating ideas	
By the end of Key Stage 1 children should:	By the end of Key Stage 2 children should:



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• generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mockups • use information and communication technology, where appropriate, to develop and communicate their ideas <i>Examples include:</i> • Children use generic paint software to design a coat for Teddy. • Children use simulation software to model and assemble a structure on the computer screen by clicking, dragging and assembling components from a virtual construction kit.	• share and clarify ideas through discussion • model their ideas using prototypes and pattern pieces Examples include: • In Y3/4, designing and making pattern pieces for pencil cases, story sacks or purses where a single fabric shape is used to create a 3-D textiles product. • In Y5/6, designing and making pattern pieces for hats and bags where several fabric shapes are combined to make the final product. • In Y3/4, developing prototypes from re-cycled card to develop, model and communicate their ideas for the moving parts in a greetings card. • In Y5/6, using a construction kit to build a working prototype for a toy fairground ride intended for younger children. • use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Examples of practice: • Using an annotated sketch to explain the various features of a beach bag e.g. how it is held, where equipment and clothing are stored, how it is fastened. • Using a cross-sectional drawing to show the parts and components in a torch e.g. outer casing, reflector, lens, bulb, battery and switch. • Using an exploded diagram to show the mechanical components and structural parts of a battery-powered toy vehicle and their order of assembly e.g. wheel, pulley, axle, axle holder, chassis and body • use computer-aided design to develop and communicate their ideas Examples include: • Designing an accurate net for packaging, including text and graphics. This may be printed out onto card, cut out and assembled to achieve the final product. This also provides a simple introduction to computer-aided manufacture (CAM). • Using pattern making software to print out and mock-up the parts for a textiles product e.g. hat, bag, apron. • Using simulation software to model and assemble the parts of a construction kit by clicking, dragging, arranging and re-arranging components on the computer screen. In early KS2 pupils should also: • generate realistic ideas, focusing on the needs of the user • make design decisions that take account of the availability of resources In late KS2 pupils should also: • generate innovative ideas, drawing on research • make design decisions, taking account of constraints such as time, resources and cost
Making: Planning	
By the end of Key Stage 1 children should:	By the end of Key Stage 2 children should:
• plan by suggesting what to do next	• select tools and equipment suitable for the task
<i>Examples of next steps might include:</i>	Examples of what children might do:



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• <i>Deciding who they will work with</i> • <i>Choosing where to work</i> • <i>Saying what material or component they need to collect first</i> • <i>Deciding which tool or piece of equipment is needed for a particular task</i> • <i>Saying which practical skill or technique (e.g. sawing or gluing) will be used</i> • <i>Deciding which finishing media to use</i> • <i>Taking a closer look at some existing products</i> • select from a range of tools and equipment, explaining their choices • select from a range of materials and components according to their characteristics	• <i>Ricardo chose a ruler, try square, junior hacksaw, jointing jig and bench hook to measure, mark out, cut and join pieces of square section wood to create the framework for his moving toy. He lightly finished the sawn ends of the wood with glasspaper and used PVA glue with card triangles to make strong, right-angled joints.</i> • <i>When building her battery-powered electrical board game, Yasmin selected automatic wire strippers and a screwdriver to make secure connections between electrical components and wire. She used the wire strippers to remove the insulation from the wire and to cut it to length, and used the screwdriver to attach wire to the screw connections on bulb holders</i> • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities In early KS2 pupils should also: • order the main stages of making In late KS2 pupils should also: • produce appropriate lists of tools, equipment and materials that they need • formulate step-by-step plans as a guide to making
Making: Practical Skills and Techniques	
By the end of Key Stage 1 children should: • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design	By the end of Key Stage 2 children should: • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components In early KS2 pupils should also: • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy In late KS2 pupils should also: • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • use techniques that involve a number of steps • demonstrate resourcefulness when tackling practical problems
Evaluating: Their own work	
By the end of Key Stage 1 children should: • talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • suggest how their products could be improved	By the end of Key Stage 2 children should: • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work In early KS2 pupils should also: • refer to their design criteria as they design and make



	Examples of classroom practice: • <i>The nightlight should be freestanding, provide a soft light, be easy to switch on and off, and interesting for the user.</i> • <i>The souvenir money container should be the appealing to visitors to the museum shop, carry loose coins, be easy to carry and securely fastened.</i> • <i>The packaging should protect the biscuits inside, be made from recyclable materials and be easy to open and close.</i> • <i>The moving greetings card should be entertaining to look at, easy to use, make use of a lever and linkage mechanism that suits the picture, and work reliably.</i> • <i>use their design criteria to evaluate their completed products</i> In late KS2 pupils should also: • critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • evaluate their ideas and products against their original design specification
Evaluating: Existing Products	
By the end of Key Stage 1 children should explore: • what products are • who products are for • what products are for Examples of classroom practice: • <i>Designing and making fruit salads for sports day</i> • <i>Designing and making vegetable kebabs for the class picnic</i> • <i>Designing and making a poster with moving parts for a class display</i> • <i>Designing and making a vehicle to solve a problem for a story character</i> • <i>Designing and making a fabric placemat to protect surfaces</i> • <i>Designing and making a finger puppet for imaginary role-play</i> • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products	By the end of Key Stage 2 children should investigate and analyse: • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants In early KS2 pupils should also investigate and analyse: • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused In late KS2 pupils should also investigate and analyse: • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose • Children should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products Examples of practice: • <i>Linked to their work in history, when children were designing and making hats in Y5 they researched and learnt about significant people in their locality and further afield linked to textiles e.g. William Morris.</i> • <i>When designing and making frame-based products in Y6, children researched related key events and individuals such as Stephen Sauvestre – a designer of the Eiffel Tower and</i>



	<i>Thomas Farnolls Pritchard – designer of the Iron Bridge.</i> • <i>When designing and making a lighting system, Y5/6 children used a timeline to learn about the development of electric torches and lamps, and researched famous inventors related to their project e.g. Thomas Edison – light bulb.</i>
Technical Knowledge	
By the end of Key Stage 1 children should know:	By the end of Key Stage 2 children should know:
• about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable • that a 3-D textiles product can be assembled from two identical fabric shapes • that food ingredients should be combined according to their sensory characteristics • the correct technical vocabulary for the projects they are undertaking	• how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics • that mechanical and electrical systems have an input, process and output • the correct technical vocabulary for the projects they are undertaking In early KS2 pupils should also know: • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures Examples of products children could design and make that require an understanding of shell structures in early KS2 include: • <i>gift boxes/containers</i> • <i>desk tidy</i> • <i>disposable/recyclable lunchboxes</i> • <i>packaging</i> • <i>cool boxes</i> • <i>party boxes</i> • <i>keep safe boxes</i> • <i>mystery boxes</i> • that a single fabric shape can be used to make a 3D textiles product • that food ingredients can be fresh, pre-cooked and processed In late KS2 pupils should also know: • how mechanical systems such as cams or pulleys or gears create movement Across KS2, children should develop and apply the correct technical vocabulary to describe the movement of mechanical systems: • <i>Linear – in a straight line</i> • <i>Reciprocating – backwards and forwards in a straight line e.g. a slider</i> • <i>Rotary – round and round e.g. a wheel, cam, pulley, gear wheel</i> • <i>Oscillating – backwards and forwards in an arc e.g. a lever</i> • how more complex electrical circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products Example of practice:



		<i>When designing and making a burglar alarm, Y5/6 children use commercially produced push-to-make switches, micro-switches and reed switches as input devices connected to a buzzer. Through class discussion, children see the need for a delay between the alarm being activated and the buzzer going off to give time for the system to be switched off. Children connect the switches used in their alarm system to the interface box as input devices and connect a buzzer (with a compatible voltage) as an output device. They then create a sequence of instructions so that when the alarm is activated there is a pause before the buzzer goes off.</i> • how to reinforce and strengthen a 3D framework • that a 3D textiles product can be made from a combination of fabric shapes • that a recipe can be adapted by adding or substituting one or more ingredients
Cookery: Diet		
By end of Key Stage 1 children should:		By end of Key stage 2 children should:
• recognise that food and water are essential for life. • be aware that we all need a balanced and varied diet to grow, be active and maintain health, and that we need to eat more of some foods than others, e.g. as depicted in <i>the eat well guide</i>. <i>Examples of activities to develop children's knowledge and understanding at KS1:</i> • Naming different foods • Discussing what foods might be in each group • Sorting foods into the correct food groups • Identifying the largest groups • Identifying the smallest group • Discussing what this means for the food products children design and make • be aware that being active and looking after yourself are important for health, e.g. brushing teeth twice a day. • know that it is important to eat breakfast every day. • know that some people eat or avoid certain foods for different reasons, e.g. due to allergy/intolerance, religion. • drink plenty and not get thirsty, e.g. drink 6-8 glasses a day.		• make food choices based on the current healthy eating advice and understand that a healthy diet is made up from a variety and balance of different food and drinks, as depicted in <i>the eatwell guide</i>. <i>Examples of what children should know and understand in KS2:</i> • Revisiting learning from KS1 that there are five main food groups in The eatwell plate • Food products are sometimes made from two or more of these food groups • The eatwell plate shows us the proportions of different food groups we should eat, e.g. compared to the other food groups, we should eat more fruit and vegetables and bread, rice, potatoes, pasta and other starchy foods • be aware of the importance of a healthy and balanced diet, good oral health and being physically active for health and wellbeing. • know that food and drinks provide energy and in different amounts • know that a variety of food is needed in the diet because different foods provide different substances required for our health, namely nutrients (carbohydrate, protein, fat, vitamins and minerals), water and fibre. • be aware that food needs change and that some people eat or avoid certain foods, e.g. allergy/intolerance or religious belief.
Cookery: Consumer Awareness, Food Choice and Labelling		
By end of Key Stage 1 children should:		By end of Key stage 2 children should:
• recognise that all food comes from plants or animals. • understand and value where food comes from, e.g. a farm, the sea. • recognise that food can be purchased or grown at home or at school. • be able to talk about which foods they like or dislike. • know that people choose different types of food, based on who they are with, preferences, season, time of day, allergy/intolerance, religion and occasion (including celebrations). • be aware that different settings may affect food and drink choice, e.g. home, school, eating out. • be aware that some foods have labels which provide information to help when making a choice.		• understand where and how a variety of ingredients are grown, reared, caught and processed. • know the basic steps in the producing food. • consider cost when helping to shop for food and cook at home. • explore the factors involved in food and drink choice and how this may be influenced by availability, season, need, cost, minimal packaging, where the food is produced, culture, religion, allergy/intolerance and peer-pressure. • be aware that advertising can influence what they choose to eat. • be aware that it is important to choose an appropriate portion size for their needs. • read and make use of the main information on food and drink labels.



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Cookery: Preparation and Handling Skills						
By end of Key Stage 1 children should:			By end of Key stage 2 children should:			
- recognise and taste a range of familiar ingredients, e.g. fruit, vegetables, cereals, dairy, meat, eggs, fish, potatoes. - name and use a range of basic tools safely, e.g. small knife, chopping board, measuring spoon. - use a range of food preparation skills with supervision, e.g. peeling, slicing, mixing, scooping, grating, spreading. - with help prepare a range of healthy dishes and drinks safely and hygienically. - avoid wasting food during preparation and cooking and recycle food packaging. - be able to eat sociably with others.			- name, taste and prepare a broad range of ingredients and healthy recipes, reflecting cultural diversity. - select and use appropriate tools and equipment safely when preparing and cooking food. - demonstrate an increasing range of food preparation skills, e.g. accurate weighing and measuring, kneading. - know how to store, prepare and cook a variety of predominantly savoury dishes safely and hygienically. - actively minimise food waste, be aware of portion sizes, compost fruit and vegetables and recycle food packaging. - appreciate the value of eating together with family and friends.			
Cookery: Safety						
- recognise the importance of preparing and cooking food safely and hygienically, e.g. handwashing, cleaning up regularly, keep work surfaces clean. - be able to get ready to cook, e.g. tie back long hair, wash hands, wear an apron. - be aware that food purchased or cooked needs to be stored in different ways to keep it safe, e.g. fridge, freezer.			- know that food safety means preventing contamination, spoilage and decay when handling and storing food, so that it is safe to eat. - demonstrate good food safety practices when getting ready to store, prepare and cook food, e.g. keep raw meat away from other food, thorough handwashing. - understand the use of date-marks and storage instructions on food and drink labels.			
Cookery: Knife Skills						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Bridge knife technique: soft foods e.g. strawberry, cherry tomato	- Claw knife technique – soft foods e.g. cucumber - Snipping herbs in a jug using scissors	- Bridge knife technique – harder foods e.g. apple - Hedgehog a mango cheek with a round-bladed knife - Grating soft foods e.g. courgette, cheese	- Claw knife technique – harder foods e.g. carrot - Peeling soft vegetables e.g. courgette	Grating hard foods e.g. carrot, apple	- Simple combination of bridge and claw e.g. onion - Coring an apple - Finer grating e.g. parmesan, nutmeg	- Fine chopping of herbs - Peeling e.g. carrot
Cookery: Weighing and Measuring						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Using measuring spoons and cups - Using balance scales		Using a jug to measure liquids	Using digital or spring balance scales			
Cookery: Baking Skills						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Sieving flour - Kneading - Shaping e.g. bread rolls - Handling and folding	- All-in-one cake method - Scraping out a bowl with a spatula	- Cutting fat into flour - Cracking an egg - Beating an egg - Rubbing fat into flour	Adding liquid to flour	- Separating an egg - Cream fat and sugar - Folding flour into creamed mixture		



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- filo pastry - Cutting out rolled pastry - Glazing e.g. brushing with egg, milk, oil	Dividing mixture into tins e.g. muffins	- Mixing to form a bread dough - Handling and rolling out puff pastry		Handling and rolling shortcrust pastry		
Cookery: Other skills						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Tearing e.g. herbs - Crumbling cheese e.g. feta - Arranging ingredients / toppings - Spreading with the back of a spoon e.g. pizza topping - Scooping e.g. removing mango flesh from hedge-hogged shell, baked potato from jacket - Use a lemon squeezer - Beat ingredients together e.g. salad dressing - Garnish and decorating	mashing	- spreading with a table knife e.g. butter - crushing garlic - shaping e.g. fishcakes / burgers	- coating e.g. with egg and breadcrumbs - shelling a hardboiled egg - draining through a sieve or colander	seasoning to taste	- using a hob (only with adult supervision) e.g. to sweat veg for soup - whisking e.g. egg whites or cream	
Construction						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Handling and describing 3D objects - Stacking 3D shapes - Horizontal construction - Work with kits - Selecting shapes for purpose - Join, assemble 3D materials (including kits) to choose most appropriate fixing method - Use of scissors, glue and tape - Select resources according to shape / texture etc.	- Understand terms: shape, form, texture - Make collections of objects / materials for purpose / theme - Understand 3D shapes as 'form' - Paper scrunching / crumpling to make 'formers' - Laminating (bandaging techniques for building up form - Appropriate use of	- Understand relevance of colour, shape, texture and form to 3Dn work - Use cameras / digital media to record observations - Use rubbings to record texture - Paper folding and curling - Simple joining techniques with glue, tape - Use of simple formers to create basic forms e.g.	- Appropriate selection of materials for a specific purpose e.g. glue / tape - Collecting and sketching ideas in a sketchbook - Correct use of tools – scissors, cutters etc. - How to make simple formers using boxes, rolled paper - How to construct simple assemblages e.g. mobiles - Puppet making -	- Card cutting / tearing to make structures. - Joining techniques such as slotting, tying, pinning, weaving, sewing - Construct more complex assemblages e.g. free standing, relief - Small-scale box models - Puppet making e.g. stick, jointed - Understand the need to decorate surfaces	- Create surface textures e.g. laminating, modroc, collage - Large scale box models - Understand positive and negative space - Mask making – use of moulds - Use of natural materials to create structures	- Use of chicken worw or willow sticks as a former - Select appropriate resources for making formers to create a piece of sculpture - Select appropriate resources for surface textures - Construct scale models - Mask making – explore different techniques



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- Explore 3D objects - Build height, width, enclosures with 3D shapes - Balance 3D shapes - Begin to use appropriate vocabulary around construction - Build a freestanding structure using a construction kit	- glues, pastes, tapes for different purposes - Matching shapes, solids and flats and naming (e.g. square, cube etc.) - Make holes using a hole punch	- animals (box modelling) - Card cutting / tearing - Use of found materials to create structures - Awareness of adherence of paint / ink to different surfaces e.g. the need to turn boxes inside out for painting. - Ensure strength and stability of freestanding structures	glove, finger			
Textiles						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Begin to use scissors and other tools for a particular purpose - Understand concepts of colour and texture - Use ideas involving fitting, overlapping, inside and outside shapes, enclosure and grids - Basic weaving	- Use observations as a basis for textile design work - Group weaving using a range of materials and looms - Thread beads - How to cut fabric - Use of different materials: fabric, string, yarns - Thread a large eye needle (needle to thread)	- Simple dyeing - Basic stitching: running stitch, stabbing stitch using binka and/or hessian - Tying and untying - Tie dye with pegs 'dye painting' e.g. crepe paper prints. - Use paper 'mock ups'	- Sewing on binka and hessian - Blanket stitch, cross stitch, inventing stitches - Weaving using natural made forms eg branches, wire, hoops, netting - Two colour tie dye with string - Puppet making - Understand the need for a seam allowance. - Join textiles with appropriate stitching. - Select the most appropriate techniques to decorate textiles.	- Applique - Embroidery to decorate, e.g. fabrics, prints: sewing buttons, sequins to embellish - Printing on fabric - Two colour tiedye - Simple patchwork	- Sewing as a joining technique for paper / card - Use textiles to create / include in collage and 3D - Batik – 'paint on' technique - Batik – 'dye bath' technique - Practice basic stitchery by incorporating into other work	- Dyeing with natural dyes, e.g. onion, cabbage, beetroot - Printing / painting on fabric - Soft sculptures - Create objects (such as a cushion) that employ a seam allowance. - Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). - Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a



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						cushion).
Electronics						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage)	Create series and parallel circuits	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).	- Use wire strippers and cutters - Use screwdrivers to assemble electrical components - Use handmade switches in circuits - Use toggle switches, reed switches and push-to-make switches	- Construct models with gears and motors - Use handmade pressure pads in models - Use of light dependent resistors - Use of interface boxes and micro-controllers
Woodwork						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
- Explore hammer and nails (supervised) - Independent use of Tap Tap shapes	- Demonstrate a range of cutting and shaping techniques - Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	- Select from a range of tools and equipment. - Measure and mark out to the nearest centimetre. - Cut materials safely using tools provided. - Use a junior hacksaw safely - Use a vice to hold materials for cutting - Measure dowel in standard and non-standard units - Make 'mock ups' using card and masking tape - Combine wooden wheels and axles in a toy vehicle - Use sandpaper for finishing - Use a ruler for measuring	- Choose suitable techniques to construct products or to repair items. - Strengthen materials using suitable techniques. - Cut materials accurately and safely by selecting appropriate tools. - cut within the perimeter of the material (such as slots or cut outs). - Select appropriate joining techniques. - Measure and mark out to the nearest millimetre. - Use a hammer and nails with supervision - Use a bench hook when cutting - Use a set square	- Use a junior hacksaw and vice independently - Use a clamp for gluing / cutting	- Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). - Cut wood with precision and refine the finish with appropriate tools (such as sanding after cutting) - Use a try square for marking corners	- Use a range of tools of measuring and marking out - Use a hammer and nails independently - Use of clamps and hand drills



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Mechanics						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
With support begin to incorporate moving parts into models. For example, use split pins to make body parts move.	- Use sliders and axles. - Construct sliders which move in a straight line	- Create products using levers, wheels and winding mechanisms. - Use paper fasteners as pivots in a simple lever - Construct lever which move in a curve - Construct wheels and axles which turn	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).		Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanics in product designs.	Construct models with cams, pulleys and gears