

2014-16 Design and Technology Skills Checklist

Autumn Term	Spring Term	Summer Term
Law and Order	Rome and Pompei	Science and Technology
Design, Evaluate and Improve Materials Enterprise Project Year 6 – Virgin Money Grow £5.00		

Essential Coverage and Opportunities	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge and understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Over the course of an academic year every child/year group will have the opportunity to prepare, cook and develop the skills in cooking either through topic, science or taught discretely.</p> <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed 		
Mile Stone 1 I can/ I know / I understand/I am able Year 2	Mile Stone 2 I can/ I know / I understand/I am able (years 3/4)	Mile Stone 3 I can/ I know / I understand/I am able (years 5 and 6)	Key Questions and examples regarding Activities
To design, make, evaluate and improve	To design, make, evaluate and improve	To design, make, evaluate and improve	Law and Order
<ul style="list-style-type: none"> • Design products that have a clear purpose 	<ul style="list-style-type: none"> • I can discuss the progress of my work as the design 	<ul style="list-style-type: none"> • I can design with the user in mind, motivated 	

<p>and in intended user</p> <ul style="list-style-type: none"> • I can use drawings to record ideas as they develop • I can use pictures and words to convey what they want to design and make • I can use simple pop ups • Make products, refining the design as work progresses • Use software to design • I can say what I like and do not like and attempt to say why • I can talk about their designs as they develop and identify good and bad points • I can talk about changes made during the making process • I can discuss how closely their finished products meet their design criteria 	<p>develops</p> <ul style="list-style-type: none"> • I can design with purpose by identifying opportunities to design • I can make products by designing efficiently (such as by carefully selecting materials) • I can model and develop ideas – mock ups with construction kits and junk materials • I can justify my choices and changes by explaining why. • I can evaluate and make improvements to my construction e.g. making it stronger, stiffer and more stable • I can use a wider range of design and technical vocabulary • Use software to design 	<p>by the service a product will offer (rather than simply for profit)</p> <ul style="list-style-type: none"> • I can make products through stages of prototypes, making continual refinements. • I can shape, join and finish accurately • I can select from a wider range of materials and components, including construction materials looking at functional and aesthetic qualities • I can create a mood board • I can narrow my ideas and making decisions • I can create a final design • I can make choices • I can reflect and make critique on my design 	
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I can/ I know / I understand/I am able	I can/ I know / I understand/I am able (years 3 and 4)	I can/ I know / I understand/I am able (years 5 and 6)	Key Questions and examples regarding Activities
<p>To take inspiration from design throughout history</p> <ul style="list-style-type: none"> • I can explore objects and designs to identify likes and dislikes of the designs • I can suggest improvements to existing designs • I can explore how products have been created 	<p>To take inspiration from design throughout history</p> <ul style="list-style-type: none"> • I can identify some of the great designers in all areas of study (including pioneers in horticultural techniques) to generate ideas for design • I can improve upon existing designs, giving reasons for choices • I can disassemble products to understand how they work 	<p>To take inspiration from design throughout history</p> <ul style="list-style-type: none"> • I can combine elements of design from a range of inspirational designers throughout history giving reasons for choices • I can create innovative designs that improve upon existing products • I can evaluate the design of products so as to suggest improvements to the user experience 	

I can/ I know / I understand/I am able Milestone 1 (Year 2)	I can/ I know / I understand/I am able (years 3 and 4) Milestone 2	I can/ I know / I understand/I am able (years 5 and 6) Milestone 3	In Which topics Do they Appear Key Questions and examples regarding Activities
<p>Food</p> <ul style="list-style-type: none"> • I can design purposefully, functional appealing products for themselves and other users based on design criteria • Generate ideas, model and communicate their ideas through talking, drawing, templates, mock ups and where appropriate, information and communication technology 	<p>Food</p> <ul style="list-style-type: none"> • I can develop a food vocabulary using taste, smell texture and feel • I can use the basic principles of a healthy and varied diet to prepare dishes • I can understand where food comes from • I can cut, peel or grate ingredients safely and hygienically • I can measure or weigh using measuring cups or electronic scales • I can assemble or cook ingredients • I can understand where food comes from around the world (link to science) • I can prepare ingredients hygienically using appropriate utensils • I can follow a recipe • I can measure ingredients (to the nearest gram/ml) 	<ul style="list-style-type: none"> • I can understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms) - link to science • I can measure accurately and calculate ratios of ingredients to scale up or scale down a recipe • I can demonstrate a range of baking and cooking techniques • I can create and refine recipes, including ingredients, methods, cooking times and temperatures 	

	<ul style="list-style-type: none"> • I can understand the need for a variety of foods in a diet • I can group familiar food products. • I can develop a food vocabulary using taste, smell texture and feel 		
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I can/ I know / I understand/ I am able Year 2	I can/ I know / I understand/ I am able (years 3 and 4)	I can/ I know / I understand/ I am able (years 5 and 6)	Key Questions and examples regarding Activities
<p>Materials</p> <ul style="list-style-type: none"> • Manipulates materials to achieve a planned effect. • Constructs with a purpose in mind, using a variety of resources. • Uses simple tools and techniques competently and appropriately. • Selects appropriate resources and adapts work where necessary. • Selects tools and techniques needed to shape, assemble and join materials they are using. 	<p>Materials</p> <ul style="list-style-type: none"> • I can manipulate materials to achieve a planned effect. • I can construct with a purpose in mind, using a variety of resources. • I can use simple tools and techniques competently and appropriately. • I can select appropriate resources and adapt work where necessary • I can cut materials safely using tools provided • I can measure and mark out to the nearest centimetre/millimetre • I can demonstrate a range 	<p>Materials</p> <ul style="list-style-type: none"> • I can use tools safely, independently and with increasing accuracy and confidence • I can check that my equipment is safe and appropriate to use for the activity • I can explore create and join materials to create structures e.g. bridges with a set amount of materials • I can work within a group and understand the roles needed to produce a finished piece of work 	

	<p>of cutting and shaping techniques (such as tearing, cutting, folding and curling)</p> <ul style="list-style-type: none"> • I can demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen) • I can create working hinges • I can cut materials accurately and safely by selecting appropriate tools • 	<ul style="list-style-type: none"> • I can show an understanding of materials to choose appropriate tools to cut and shape (e.g. sharp scissors for fabric/craft knife for stencils/saw for wood dowels/withys) 	
I can/ I know / I understand/ I am able Year 2	I can/ I know / I understand/ I am able (years 3 and 4)	I can/ I know / I understand/ I am able (years 5 and 6)	Key Questions and examples regarding Activities
<p>Textiles</p> <ul style="list-style-type: none"> • Manipulates materials to achieve a planned effect. • Constructs with a purpose in mind, using a variety of resources. • Uses simple tools and techniques competently and appropriately. • Selects appropriate resources and adapts work where necessary. • Selects tools and techniques needed to shape, assemble and 	<p>Textiles</p> <ul style="list-style-type: none"> • I can manipulate materials to achieve a planned effect. • I can construct with a purpose in mind, using a variety of resources. • I can use simple tools and techniques competently and appropriately. • I can select appropriate resources and adapts work where necessary. • I can selects tools and techniques needed to shape, assemble and 	<p>Textiles</p> <ul style="list-style-type: none"> • I can design and use my own template (taking inspiration and looking at other designs) independently 	

<ul style="list-style-type: none"> • join materials they are using. 	<ul style="list-style-type: none"> • join materials they are using. • I can shape textiles using templates • I can join textiles using appropriate stitches, glue, over sewing, tape • I can colour and decorate textiles/fabrics using a number of techniques (such as dying, adding sequins or printing), beads, braids, ribbons • I can design and use my own template (taking inspiration and looking at other designs) independently • I can understand the need for a seam allowance • 		
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<p>Electrics and electronics</p> <ul style="list-style-type: none"> • I can diagnosis faults in battery operated devices (such as low battery, water damage or battery terminal damage) 	<p>Electrics and electronics</p> <ul style="list-style-type: none"> • I can create series and parallel circuits 	<p>Electrics and electronics</p> <p>I can create circuits using electronic kits that employ a number of components (such as LED's, resistors, transistors and chips)</p>	

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<p>Construction</p> <ul style="list-style-type: none"> • I can manipulate materials to achieve a planned effect. • I can construct with a purpose in mind, using a variety of resources. • I can use simple tools and techniques competently and appropriately. • I can select appropriate resources and adapts work where necessary. • I can select tools and techniques needed to shape, assemble and • I can join materials they are using. 	<p>Construction</p> <ul style="list-style-type: none"> • I can use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products • I can cut, strip wood/dowel using a hacksaw and a bench hook with support/1:1 	<p>Construction</p> <ul style="list-style-type: none"> • I can develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding) 	

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Mechanics <ul style="list-style-type: none"> I can create products using levers, wheels and winding mechanisms I can attach wheels to a chassis using an axle 	Mechanics <ul style="list-style-type: none"> I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears) 	Mechanics <ul style="list-style-type: none"> I can convert rotary motion to linear using cams. I can innovative combinations of electronics (for computing) and mechanics in product designs 	

I can/ I know / I understand/I am able Year 2	I can/ I know / I understand/I am able (years 3 and 4)	I can/ I know / I understand/I am able (years 5 and 6)	Key Questions and examples regarding Activities
Computing <ul style="list-style-type: none"> I can research to help ideas using ipads/ICT I can model designs using software 	Computing <ul style="list-style-type: none"> I can control and monitor models using software designed for this purpose 	Computing I can write codes to control and monitor models or products	