Design and Technology Progression of Knowledge and Skills

Key to understanding this document: Black = National Curriculum Objectives Blue = Knowledge Red = Skills to be taught Green = Resources to be used

Area of Learning	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	PSE: • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one, which is suggested. (36-48 months) PD: • Use large muscle movements to wave flags and streamers, paint and	Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **Shown in across all topics in DT:** have own ideas explain what I want to do explain what my product is for, and how it will work	Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **Shown in across all topics in DT:** have own ideas and plan what to do next explain what I want to do and describe how I may do it	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Shown in across all topics in DT:**	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Shown in across all topics in DT:**	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Shown in across all topics in DT:**	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Shown in across all topics in DT:**

	make marks(36-48 months) • Choose the right resources to carry out their own plan(36-48 months) • Use one handed tools and equipment(36-48 months) • Progress towards a more fluent style of moving(48-60 months) • Develop their small motor skills so that they can use a range of tools competentl y(48-60 months) • Use their core muscles	use pictures and words to plan, begin to use models design a product for myself following design criteria research similar existing products	explain purpose of product, how it will work and how it will be suitable for the user describe design using pictures, words, models, diagrams, begin to use ICT design products for myself and others following design criteria choose best tools and materials, and explain choices use knowledge of existing products to produce ideas	begin to research others' needs show design meets a range of requirements describe purpose of product follow a given design criteria have at least one idea about how to create product create a plan which shows order, equipment and tools describe design using an accurately labelled sketch and words make design decisions explain how product will work make a prototype	use research for design ideas show design meets a range of requirements and is fit for purpose begin to create own design criteria have at least one idea about how to create product and suggest improvements for design. produce a plan and explain it to others say how realistic plan is. include an annotated sketch make and explain design decisions considering availability of resources explain how product will work	use internet and questionnaires for research and design ideas take a user's view into account when designing begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose create own design criteria have a range of ideas produce a logical, realistic plan and explain it to others. use cross-sectional planning and annotated sketches make design decisions considering time and resources.	draw on market research to inform design use research of user's individual needs, wants, requirements for design identify features of design that will appeal to the intended user create own design criteria and specification come up with innovative design ideas follow and refine a logical plan. use annotated sketches, crosssectional planning and exploded diagrams make design decisions, considering, resources and cost

	strength to achieve posture. (48-60 months) • Use a small range of tolls, including scissors, paintbrushes and cutlery (ELG) UTW:			begin to use computers to show design	make a prototype begin to use computers to show design.	clearly explain how parts of product will work. model and refine design ideas by making prototypes and using pattern pieces. use computer-aided designs	clearly explain how parts of design will work, and how they are fit for purpose independently model and refine design ideas by making prototypes and using pattern pieces use computer-aided designs
Make	• Explore how things work(36-48 months) EAD: • Make imaginative and complex small worlds with blocks and construction kits(36-48 months) • Explore different materials	Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their

	freely, in order to develop their ideas about how to use them and what to make(36-48 months) • Develop their own ideas and then decide which materials to use to express them. (36-48 months) • Create closed shapes with continuous line. (36-48 months) • Explore, use and refine a variety of artistic affects to express their ideas	**Shown in across all topics in DT:** explain what I'm making and why consider what I need to do next select tools/equipment to cut, shape, join, finish and explain choices measure, mark out, cut and shape, with support choose suitable materials and explain choices try to use finishing techniques to make product look good work in a safe and hygienic manner	**Shown in across all topics in DT:** explain what I am making and why it fits the purpose make suggestions as to what I need to do next. Join materials/components together in different ways measure, mark out, cut and shape materials and components, with support. describe which tools I'm using and why choose suitable materials and explain choices depending on characteristics. use finishing techniques to make product look good	functional properties and aesthetic qualities **Shown in across all topics in DT:** select suitable tools/equipment, explain choices; begin to use them accurately select appropriate materials, fit for purpose. work through plan in order consider how good product will be begin to measure, mark out, cut and shape materials/components with some accuracy begin to assemble, join and combine materials and components with some accuracy	functional properties and aesthetic qualities **Shown in across all topics in DT:** select suitable tools and equipment, explain choices in relation to required techniques and use accurately select appropriate materials, fit for purpose; explain choices work through plan in order. realise if product is going to be good quality measure, mark out, cut and shape materials/components with some accuracy assemble, join and combine materials and components with some accuracy	functional properties and aesthetic qualities **Shown in across all topics in DT:** use selected tools/equipment with good level of precision produce suitable lists of tools, equipment/materials needed select appropriate materials, fit for purpose; explain choices, considering functionality create and follow detailed stepby-step plan explain how product will appeal to an audience mainly accurately measure, mark out, cut and shape materials/components	functional properties and aesthetic qualities **Shown in across all topics in DT:** use selected tools and equipment precisely produce suitable lists of tools, equipment, materials needed, considering constraints select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics create, follow, and adapt detailed step-by-step plans explain how product will appeal to audience; make changes to improve quality

	and feelings (48-60 months) • Return to and build on their previous learning, refining ideas and developing their ability to represent them. (48-60 months) • Create collaboratively. (48-60 months) • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function (ELG)		work safely and hygienically	begin to apply a range of finishing techniques with some accuracy	apply a range of finishing techniques with some accuracy	mainly accurately assemble, join and combine materials/components mainly accurately apply a range of finishing techniques use techniques that involve a small number of steps begin to be resourceful with practical problems	accurately measure, mark out, cut and shape materials/components accurately assemble, join and combine materials/components accurately apply a range of finishing techniques use techniques that involve a number of steps be resourceful
Evaluate		Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria **Shown in across all topics in DT:** Talk about my work, linking it to what I was asked to do	Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria **Shown in across all topics in DT:** describe what went well, thinking about design criteria	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals in	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals in	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals in	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals in

	• Share their creations, explaining the process used (ELG)	talk about existing products considering: use, materials, how they work, audience, where they might be used talk about existing products, and say what is and isn't good talk about things that other people have made begin to talk about what could make product better	talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion evaluate how good existing products are talk about what I would do differently if I were to do it again and why	design and technology have helped shape the world **Shown in across all topics in DT:** look at design criteria while designing and making use design criteria to evaluate finished product say what I would change to make design better begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose begin to understand by whom, when and	design and technology have helped shape the world **Shown in across all topics in DT:** refer to design criteria while designing and making use criteria to evaluate product begin to explain how I could improve original design evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose discuss by whom, when and where products were designed	design and technology have helped shape the world **Shown in across all topics in DT:** evaluate quality of design while designing and making evaluate ideas and finished product against specification, considering purpose and appearance. test and evaluate final product evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose	design and technology have helped shape the world **Shown in across all topics in DT:** evaluate quality of design while designing and making; is it fit for purpose? keep checking design is best it can be. evaluate ideas and finished product against specification, stating if it's fit for purpose test and evaluate final product; explain what would improve it and the effect different resources may have had do thorough evaluations of existing products

				where products were designed learn about some inventors/designers / engineers/chefs/ manufacturers of groundbreaking products	research whether products can be recycled or reused know about some inventors/designers / engineers/chefs/manufacturers of ground-breaking products	begin to evaluate how much products cost to make and how innovative they are research how sustainable materials are talk about some key inventors/designers / engineers/ chefs/manufacturers of groundbreaking products	considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose evaluate how much products cost to make and how innovative they are research and discuss how sustainable materials are consider the impact of products beyond their intended purpose discuss some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products
Technical Knowledge: Structures		Build structures, exploring how they can be made stronger, stiffer and more stable.	Build structures, exploring how they can be made stronger, stiffer and more stable	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

		Stable Structures I can identify the features of toy garages. I know what the word 'stable' means. I can make changes to the design of a stable structure t o make it fit for purpose. I can explore a range of materials and evaluate the usefulness of their properties for a particular project. I can explore how to make stable structures that hold a given object. I can follow a design to make a stable structure. I know some ways to make a structure more stable.	I can explain how concrete is used to make structures more stable. I can create a structure strong enough to hold a dictionary using just newspaper and tape.		**Making Mini Greenhouses** I know what a greenhouse is and how they work. I can explore a range of different greenhouses. I know how greenhouses are used today. I can explain how the shape of a structure affects its stability. I know that the weight of the structure needs to be evenly spread on the base to make it secure. I know that the wider a structure's base is, the more stable it will be. I can use 3D nets to explore potential structures for a greenhouse,	**Bridge Building** I know what beams and pillars are and how they are used in bridge construction. I can predict which beams will be strongest from their cross-section. I can test the strength of different beam shapes using paper and card. I can explain what a truss is and how trusses make bridges stronger. I can identify the three types of trusses commonly used in bridge design. I can build a truss bridge spanning a width of 40cm using paper straws.	**Bird Houses** I can investigate the appearance and function of a variety of different bird houses. I can identify what materials have been used to construct a variety of bird houses and suggest how the parts have been joined together. I know what a flat pack diagram is and can use it to identify each part of a structure. I can create a flat pack diagram of a constructed bird house. I can draw an exploded diagram. I can identify the tools associated with basic woodwork.

		I can evaluate my finished structure against a set of given criteria.			assessing their stability. I can investigate ways of making a structure more stable, e.g. by inserting dowelling or adding triangles at the joins. I can experiment with a range of materials to test which would be most appropriate for making the structure of a mini greenhouse. I can design a mini greenhouse using specific design criteria. I can select appropriate tools and materials to make a mini greenhouse. I can follow my design to make a mini greenhouse. I can evaluate my finished mini	I can use a fair test to evaluate the strength of my truss bridge. I can explain how arches work to make bridges stronger. I can test the arch heights to see which can bear the most load. I can make an arch frame. I can explain how suspension bridges use tension forces to work. I can design, make and evaluate a prototype suspension bridge using a scale of 1:100 according to specific design criteria.	I can measure, clamp, saw, sand and join wood. I can use a hand drill to drill a hole in a piece of wood. I know the safety rules I need to follow when doing woodwork. I can design a bird house for a particular bird, taking into account the bird's needs. I can select appropriate tools and materials to use when making a bird house. I can create a sturdy bird house frame using wood. I can evaluate my finished bird house, taking into account the views of others to improve my work.

					greenhouse for stability, effectiveness and visual appeal.		I can use observation to evaluate the effectiveness of my bird house.
Technical Knowledge: Mechanical systems		Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Moving Minibeasts** I can make a sliding mechanism out of card. I know what a pivot and lever are. I can use a pivot and lever mechanism using card and a split pin. I can make a wheel mechanism using card and a split pin. I can match a mechanism to the type of movement they produce. I can design a moving minibeast	Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Vehicles** I can investigate a range of vehicles, identifying and labelling their features. I know what an axle is. I know what a chassis is. I can explore different ways of using axles, chassis and wheels to create a moving base. I can design a vehicle with wheels, axles and	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] **Storybooks** I can explore moving parts in storybooks, suggesting how they work and what purpose they serve. I can explain what the words 'linkage', 'pivot', 'rotate' and 'lever' mean. I can use a paper concertina to make an object pop out of a book. I can arrange and stick paper between pages to create a pop-out.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

		picture to include a variety of moving mechanisms. I can follow a design to create a moving minibeast picture for a particular purpose. I can evaluate my finished moving minibeast picture by identifying things that worked well and things that could be improved.	chassis, as well as a body. I can follow a design to make a moving vehicle. I can evaluate my finished moving vehicle.	I can use levers to create moving parts. I can create moving wheel mechanisms to create different effects. I can experiment with different fonts and graphic design features. I can design pages of a storybook to include moving mechanisms and appropriate graphic features. I can follow my designs to create a storybook with moving mechanisms. I can evaluate how well my moving mechanisms work. I can evaluate the overall effectiveness of my storybook			

Technical Knowledge: Textiles			**Puppets** I can explore a variety of puppets, identifying and labelling their features. I can cut out felt using a simple template. I can stick pieces of felt together to make a finger puppet. I can add pieces of felt and other materials to a finger puppet to create features, such as eyes, hats and mouths. I can use running stitch to join two pieces of fabric together. I can use overstitch to join two pieces of fabric together. I can sew a button onto a piece of fabric.		**Seasonal Stockings** I can explain the difference between the function and visual appeal of a product. I can evaluate the function and visual appeal of a variety of Christmas stockings. I can use pins to temporarily fasten two pieces of fabric together. I can use running stick, back stitch, overstitch and zigzag stitch to join two pieces of fabric together. I can hide the finishing knot. I can identify a variety of decorative techniques that have been used to decorate Christmas stockings.	**Fashion and Textiles** I can explain the process of turning raw cotton into cloth. I know that products that are woven together are called textiles. I know that different textiles have different properties, and can match these to their purpose. I can identify straight stitch, zigzag stitch, whip/blanket stitch, blind stitch, buttonhole stitch and overlock stitch on a variety of ready-made garments. I can describe what the job of a fashion designer entails.	

			I can design a glove puppet for a particular purpose. I can follow a design to make a glove puppet by sewing two pieces of fabric together and adding decorations. I can evaluate my finished glove puppet by identifying what went well and what could be improved.		I can sew a button, bead, sequin or pipe cleaner onto a piece of fabric. I can embroider shapes and patterns into a piece of fabric. I can use appliqué to add decoration to a piece of fabric. I can design a Christmas stocking incorporating a range of decorative techniques. I can use a template to cut out front and back pattern pieces. I can follow a design to create a Christmas stocking. I can evaluate the function and visual appeal of my finished Christmas stocking.	I can sew a basting stitch. I can sew a whip stitch. I can sew a hem. I can sew back stitch. I can sew an appliqué decoration. I can use back stitch to embroider. I know what a pattern piece is and why they are important when designing a garment. I can design a drawstring bag, including the necessary pattern pieces. I can use pattern pieces to measure, mark, cut and sew fabric.	

						I can sew design elements according to design criteria. I can join two pieces of fabric by hand sewing, using an appropriate stitch. I can evaluate my finished product against a set of design criteria.	
Technical Knowledge: Food and Nutrition		Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from. **Eat more Fruit and Vegetables** I can name a variety of fruits and vegetables. I can use adjectives to describe the taste, smell and texture of a variety of fruits and vegetables.	Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from **Pizzas** I can name a variety of pizza toppings. I can use the model of the balanced plate to evaluate how healthy different pizzas are.	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.	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.	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.	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.

		I know that some fruits and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten. I understand basic food hygiene, e.g. washing hands, tying long hair back and keeping surfaces clean. I can use a knife to cut some fruits and vegetables in different ways. I can grate an apple and a carrot. I can peel a banana, apple and cucumber	I can explore different types of bread and evaluate which would work best for a pizza base. I can identify which food group a variety of pizza toppings belong to. I can sort pizza toppings into groups based on different criteria, e.g. animal vs plant products. I can explain why each of the food groups is important for a balanced diet. I can design and make a healthy pizza following given criteria. I can evaluate my finished pizza, saying what I think and feel about it.		**Seasonal Food** I can explain what the term 'seasonal food' means. I know that different parts of the world have different seasonal food. I can discuss the benefits and problems of unseasonal food being available in shops all year round. I know that some foods, like wheat, are available all year round in the UK. I can practise cooking skills including slicing, dicing, beating, whisking, folding, sieving, rolling and grating. I can follow a recipe to make fairy cakes.		**Burgers** I know that most foods we buy have nutrition labels to help us make informed choices about what we eat. I know that calories come from fats, proteins and carbohydrates. I can evaluate how healthy a burger is based on its nutrition label. I can compare different burgers and assess which is healthiest. I can explain some of the different ways in which burger patties are cooked. I can follow a recipe to make a beef, turkey or vegetable burger patty.

					I can describe the cycle of wheat production in the UK. I can distinguish between fruits that are grown in the UK and those that are grown abroad. I know how food producers can speed up or slow down the ripening process to make fruits and vegetables available all year round. I can follow a recipe to make fruit tarts using seasonal fruit. I can follow a recipe to make stuffed peppers. I know some of the nutrients we get from fruits, vegetables, meat,		I can add ingredients to a basic burger patty to reflect global cuisine. I can follow a recipe to make different burger sauces, including salsa, tzatziki and barbecue sauce. I can design a burger menu to incorporate different patties, sides and sauces. I can explore, taste and assess different types of bread and their suitability for a burger bun. I can offer suggestions for some alternatives for bread. I can add mixtures of herbs and spices to a basic bread dough to make

					fish and dairy products. I know when certain meats are in season in the UK and which are available all year round. I can follow a recipe to make meatballs. I know some vegetarian options that provide the same nutrients as meat. I can explain how fish are caught or reared, processed and used in healthy meals. I can use what I have learnt about seasonal food to design healthy meals and menus		flavoured burger buns. I can design a burger for a particular purpose. I can design a burger for someone with particular dietary requirements. I can make and evaluate a burger, following my recipe and design.
Technical Knowledge: Electrical Systems				Understand and use electrical systems in their products [for example, series	Understand and use electrical systems in their products [for example, series	Understand and use electrical systems in their products [for example, series	Understand and use electrical systems in their products [for example, series

				circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products. **Light up Signs** I can explore and analyse illuminated signs. I can create a simple circuit with incandescent bulbs and a switch. I can describe the difference between an LED and an incandescent light bulb. I can create a simple circuit with an LED bulb and a resistor. I can make a circuit with a string of LED lights.	circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products.	circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products.	circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control their products. Programming Pioneers I can explain how computers and computer programs are used in a variety of products. I can explain how modern memory chips work to store information. I can write an algorithm to suggest how various appliances might work. I know what a computer engineer

				I can design an illuminated light box against a set of design criteria. I can select materials, tools and components to create a free-standing structure. I can make a stable, free-standing structure to house an electrical circuit. I can strip, twist and join wire to make permanent connections. I can insert an electrical circuit into a free-standing structure to create an illuminated light box. I can evaluate the effectiveness of my finished product against the design criteria.			is and what they do. I can describe some examples of how computer hardware and software specialists work together to create new products. I can develop and build a prototype pedestrian crossing using computer programming. I can develop, model and communicate ideas for an embedded system which monitors and controls a door, room or both. I can describe the typical design process for computer-controlled electronic products.

							I can debug errors in an algorithm. I can suggest ways to change an algorithm to improve a system. I can select and use electronic components to construct a prototype of an embedded computer-controlled room system. I can evaluate my design for a computer-controlled system and consider the views of others to improve my work.
Technical Knowledge: Inventions and Achievements				**British Inventions** I can explain about the invention of the mackintosh. I can investigate ways of making fabric waterproof.		**Chinese Inventions** I can explain how the invention of paper helped shape the world. I can explain the traditional method for making paper.	I know that Charles Babbage created the first mechanical computer. I know that Ada Lovelace is referred to as the world's first computer programmer.

				I can explain about the invention of the world wide web. I can describe how the invention of the internet has changed the world.		I can test a variety of types of paper for strength, absorbency, opacity, etc. I can make recycled paper. I know how gunpowder was invented. I can explain how the invention of gunpowder helped shape the world. I can explain how the invention of the compass changed the world. I can make a hanging/floating compass. I can design and label my own compass. I can explain what water-powered machines are and how they helped change the world.	I know that Steve Jobs and Steve Wozniak co-founded Apple, Inc. to make the first Apple computers

						I can explain why kites were first invented and how they were made. I can make a variety of kite prototypes and test their effectiveness. I can design, make and evaluate a kite according to specific design criteria.	