DESIGN & TECHNOLOGY @ Beacon Rise

What does it mean to be a designer? What does it mean to behave and think like a designer?

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes
- An excellent attitude to learning and independent working
- The ability to use time effectively and work constructively and productively with others
- The ability to carry out through research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely
- A thorough knowledge of which tools, equipment and materials to use to make their products
- The ability to apply mathematical knowledge
- The ability to manage risks exceptionally well to manufacture products safely and hygienically
- A passion for the subject and knowledge of up to date technological innovations in materials, products and systems

Design & Technology - Progression of Skills and Knowledge

	EYFS	1	2	3	4	5	6
	Bridge building (structures)	Textiles (simple sewing and gluing decoration to fabric) Mechanisms (wheels and axles) Structures – free standing	Food Mechanisms (levers and sliders) Structures	Textiles – Orla Kiely Mechanisms (levers and linkages) Structures – Shell structures	Food Electrical systems (series, circuits and bulbs) and link to British inventor Structures (frame)	Textiles Mechanisms andStructures (pulleys / cams/pulleys) (Teach gears as an isolated lesson)	Food Electrical systems (including switches, buzzers and motors) Structures
Design	Design a product through drawings and discussion using a design criteria	Design purposeful, appealing products for themselves through drawing, pictures and words following a design criteria. Generate ideas and communicate their ideas through talking and simple drawings. Work in a range of contexts (imaginary, home, school, wider community, and story based).	Design purposeful, functional, appealing products for themselves and other users based on a design criteria. Develop, model and communicate their ideas through templates and mock-ups. Work confidently in a range of contexts (imaginary, home, school, wider community, and story based).	Use research to inform the design of functional, appealing products that are fit for purpose. Generate their ideas through discussion and an accurately labelled design and in words.	Use research to inform the design of innovative, functional, appealing products that are fit for purpose. Generate more than one idea and develop their ideas through discussion, annotated sketches, designs, in words and prototypes.	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Generate and model their ideas through discussion, annotated sketches, cross-sectional diagrams, and pattern pieces (Textiles Only).	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, and prototypes.
Vocabulary	Learning before create work	Design ideas plan product materials equipment	Design criteria draw label investigate materials equipment product	Design criteria investigate research draw label annotate user purpose	Design purpose annotated sketches prototypes user product investigate research	Design criteria decisions annotated sketches cross sectional pattern pieces mock up	Design criteria decisions annotated sketches cross sectional design exploded diagrams prototypes mock ups innovation
Make	Make a product and share their ideas, resources and skills.	Select from and use a range of given tools and equipment found in the classroom to perform practical tasks [for example,	Select from and use a range of tools and equipment to perform practical tasks [for example,	Use a wider range of tools and equipment to perform practical tasks; making cuts (scissors, snips, saw) and	Use a wider range of tools and equipment to perform practical tasks eg using scales to weigh food, or making a product that uses	Select from and use a wider range of tools and equipment to perform practical tasks accurately (for example stitching,	Select from and use a wider range of tools and equipment to perform practical tasks [measuring ingredients in ml and g, measuring in mm,

		cutting, shaping, joining and finishing].	cutting, shaping, joining and finishing].	holes (punch, drill) accurately.	both electrical and mechanical components.	plaiting, weaving, making holes and combining mechanical components).	cutting and making holes, shaping, joining and finishing], accurately.
	Safely use and explore a variety of materials, tools techniques, experimenting with colour, design, texture, form and function. Use a range of small tools, including scissors and paint brushes.	Select from and use a wide range of given materials and components, including construction materials and textiles according to their characteristics. Explain what is being made and why.	Select from and use a range of materials and components given to meet the design criteria, including construction materials and ingredients, according to their characteristics. Explain what is being made and why the audience will like it.	Select from and use a wider range of materials and components, including construction materials and textiles.	Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties.	Select from and use a wider range of materials and components, including textiles and mechanical components according to their functional properties and aesthetic qualities. Investigate and analyse a range of existing products including carrying out surveys and questionnaires	Select from and use a wider range of materials and components, including construction materials, electrical components and ingredients, according to their functional properties and aesthetic qualities. Use a range of information to inform a design (i.e. market research using surveys, interviews, questionnaires or web-based resources).
Vocabulary	Materials scissors equipment task cards	Materials scissors join stick glue strong equipment needles					
Evaluate	Return to and build on previous learning, refining ideas and developing their ability to represent them.	Explore a range of existing products saying what they like or do not like about them.	Evaluate a range of existing products.	Investigate a range of existing products.	Investigate and compare 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.	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work and make said changes.
		Evaluate their own ideas and products to suit a purpose.	Evaluate their ideas and products against design criteria.	Evaluate their ideas and products against their own criteria.	Evaluate their ideas and products against their own design criteria and consider improvements.	Understand how key events and individuals in design and technology have an impact in the UK.	Understand how key events and individuals in design and technology have helped shape the world.
				Know a British inventor and the invention they produced.	Know a British inventor, the invention they produced and the impact it had.	Know a range of inventors, the invention they produced and the impact it had.	Know a range of inventors, the invention they produced and the impact it had.
Vocabulary	Share follow explain make better	Evaluate make better	Evaluate review change	Evaluate review improve	Evaluate review improve	Evaluate review	
Technical Knowledge		Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example wheels and axles] in their products.	Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example levers and sliders) in their products.	Understand and use mechanical systems in their products [for example levers and linkages].	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Use electrical systems in their products [series circuits incorporating switches, bulbs, buzzers and motors].	Understand and use mechanical systems in their products [gears and cams].	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].
				In textiles, combine materials to strengthen or add visual appeal.		In textiles understands how to make structural changes including weaving or plaiting to make new products. Pin and tack fabrics, use patterns and join fabrics to make quality products.	

Vocabulary		wheel, axle, axle holder, chasis, moving, fixed free, body, cab strong, stand up, cut fold join fix	Slider, lever, pivot, slot, guide, join, pull, push Stable secure strong stiffen	mechanism, lever, linkage, pivot, guide system, linear, rotary fabric (name fabric used), sew, stitch, running stitch, secure, tighten, seam, decorate, strengthen, visual appeal decorate	Strengthen, stiffen, reinforce, join series circuit, fault, connection, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clips	seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, cam	bulb, bulb holder, wire, insulator, doorbell, buzzer, circuit wires batteries, conductor crocodile clip, motors
				Strengthen, stiffen, reinforce, join, secure stiffen, join, accuracy, material, marking out, scoring, assemble, adhesives		frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	
Cooking			Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.		Understand the principles of a healthy and varied diet. Prepare and cook some savoury dishes using simple techniques eg boiling (soups) and frying (pancakes/omelettes etc).		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.
					Know how to change the nature of a raw ingredient through cooking or chilling.		Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Understands food preparation and how to use cooking to alter the flavour and texture of foods. Knows raw foods are not always safe.
Vocabulary			Peel chop knife skewer Ingredients peel core slice Healthy unhealthy Prepare wash clean		Cook fry boil assemble Spread fold ingredients chill bake utensils frozen fresh savory, flavour, stir, mix weigh out Healthy unhealthy varied balanced clean wash hygienic		Boil, simmer cook fry bake, peel, chop, slice, fold, pour stir weigh ojut fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, sour, Flavour, herbs, spices, salt, pepper, bland, utensils, Intolerance, raw, Hygiene, wash , clean, utensils, ingredients Seasons grown reared caught processed tinned fresh frozen