

Vertical Concepts



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



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



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

