Worksop Priory C of E Primary Academy

DT Long Term Planning Overview

Term	Autumn		Spring		Summer	
Year 1	**Mechanisms** **Learn**: Explore slider mechanisms and the movement they output, to design, make and evaluate a moving storybook from a range of templates. Lesson 1: Exploring sliders and movement https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Design https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Construction https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Testing and evaluation https://www.kapowprimary.com/documents/generated/pdf.php **Outcome: Making a moving story book**		**Textiles** **Learn**: Explore methods of joining fabric. Design and make a character-based hand puppet using a preferred joining technique, before decorating. Lesson 1: Joining fabrics https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Designing my puppet https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Making and joining my puppet https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Decorating my puppet https://www.kapowprimary.com/documents/generated/pdf.php **Outcome: Design and make a puppet**	**Mechanisms** **Learn**: Learn about the key parts of a wheeled vehicle, to develop an understanding of how wheels, axles and axle holders work. Design and make a moving vehicle. Lesson 1: How do wheels move? https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Fixing broken wheels https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Designing a vehicle https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Wacky races https://www.kapowprimary.com/documents/generated/pdf.php **Outcome: Make a moving vehicle**	**Food and Nutrition** **Learn**: Learn to distinguish between fruit and vegetables and where they grow. Lesson 1: Fruit or vegetable? https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Where fruit and vegtables grow https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Smoothie ingredients tasting https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Making smoothies https://www.kapowprimary.com/documents/generated/pdf.php **Outcome: Design a fruit and vegetable smoothie and accompanying packaging.**	**Structures** **Learn**: Inspired by the song, 'Mouse in a windmill', design and construct a windmill for a client (mouse) to live in. Explore various types of windmill, how they work and their key features. Lesson 1: Designing the structure https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Assembling the structure https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Assembling the windmill https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Testing and evaluating https://www.kapowprimary.com/documents/generated/pdf.php **Outcome: Construct a windmill**
Year 2	**Food** **Learn**: Learn about the food groups (carbohydrates, proteins, fruits and vegetables, dairy, oils and spreads) to understand a balanced diet to develop a healthy wrap.	**Structures** **Learn**: Explore stability and methods to strengthen structures, to understand Baby Bear's chair weaknesses and develop an improved solution for him to use. Lesson 1: Exploring stability https://www.kapowprimary.com/documents/generated/pdf.php	**Textiles** **Learn**: Learn how to sew a running stitch ready to design, make and decorate a pouch using a template. Lesson 1: Running stitch https://www.kapowprimary.com/documents/generated/pdf.php	**Mechanisms** **Learn**: Design and create a functional Ferris wheel, learn how different components fit together so that the wheel rotates and the structure stands freely.	**Mechanisms** **Learn:** Explore levers, linkages and pivots through existing products and experimentation, use this research to construct and assemble a moving monster. Lesson 1: Pivots, levers and linkages https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Making linkages https://www.kapowprimary.com/documents/generated/pdf.php	

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	Lesson 1: Hidden sugars in drinks https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Taste test combinations https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Desiging and making a wrap https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Making and evaluating https://www.kapowprimary.com/documents/generated/pdf.php Outcome:Make a healthy wrap	Lesson 2: Strengthening materials https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Making Baby Bear's chair https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Fixing and testing Baby Bear's chair https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Make Baby Bear's chair	Lesson 2: Using a template https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Making a pouch https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Decorating a pouch https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Design and make a pouch	Lesson 1: Design a ferris wheel https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Planning the build https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Building the frame and wheels https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Adding pods and decoration https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Design and build a ferris wheel	Lesson 3: Designing my monster https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Making my monster https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Make a moving monster	
Year 3	**Food** **Learn**: Learn about various fruits and vegetables, and when, where and why they are grown in different seasons. Discover the relationship between colour and health benefits. Lesson 1: Where in the world? https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: British seasonal foods https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Rainbow food https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Making tarts https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Make a tart	**Electrical systems** **Learn:** Explore the science behind static electricity and apply this new knowledge to generate ideas for and make a static-electricity game. Lesson 1: Static magic https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Electrostatic game design https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Electrostatic game manufacture https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Electrostatic game evaluation https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Design and make an electrostatic game	**Mechanisms** **Learn:** Explore pneumatic systems, then apply this understanding to design and make a pneumatic toy including thumbnail sketches and exploded diagrams. Lesson 1: Exploring pneumatics https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Designing a pneumatic toy https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Making pneumatic toys https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Decorating and assembling my toy https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Make a pneumatic toy	**Structures** **Learn:** Identify and learn about the key features of a castle, before designing and making a recycled-material castle (structure). Lesson 1: Features of a castle https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Designing a castle https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Nets and structures https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Building a castle https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Build a castle	**Digital world** **Learn:** Design, develop a program, house and promote a Micro:bit electronic charm to use in low-light conditions. Lesson 1: Smart wearables https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Programming eCharm https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: eCharm pouches https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Point of sales displays https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Design and make an eCharn pouch	**Textiles** **Learn:** Learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion. Lesson 1: Cross-stitch and applique https://www.kapowprimary.com/documents/generated/pdf.php Lesson 2: Cushion design https://www.kapowprimary.com/documents/generated/pdf.php Lesson 3: Decorating my cushion https://www.kapowprimary.com/documents/generated/pdf.php Lesson 4: Assembling my cushion https://www.kapowprimary.com/documents/generated/pdf.php Outcome: Design and make a cushion

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DT Long Term Planning Overview

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Year 4	**Electrical systems** **Learn:** Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design. Lesson 1: Electrical products Lesson 2: Evaluating torches Lesson 3: Torch design Lesson 4: Torch assembly Outcome: Design and make a torch	**Structures** **Learn:** Investigate and model frame structures to improve their stability, then apply this research to design and create a stable, decorated pavilion. Lesson 1: Exploring frame structures Lesson 2: Designing a pavilion Lesson 3: Pavillion frame Lesson 4: Pavillion cladding Outcome: Build a frame structure	**Food** **Learn:** Work in groups to adapt an existing biscuit recipe, whilst taking into account the cost of the ingredients and other expenses against a set budget. Lesson 1: Following a recipe Lesson 2: Testing ingredients Lesson 3: Final design and budget Lesson 4:Biscuit bake off Outcome: Bake a biscuit	**Mechanisms** **Learn:** Using a range of materials, design and make a car with a working slingshot mechanism and house the mechanism using a range of nets. Lesson 1: Chassis and lauch mechanism Lesson 2: Designing the car body Lesson 3: Making the car body Lesson 4: Assembly and testing Outcome: Make a slingshot car	**Textiles** **Learn:** Analyse and evaluate a range of existing fastenings, then devise a list of design criteria to design, generate templates and make a fabric book sleeve. Lesson 1: Evaluating fastenings Lesson 2: Designing my book sleeve Lesson 3: Paper mock-up and preparing Lesson 4: Assembling my book sleeve Outcome: Design and make a book sleeve	**Digital world** **Learn:** Explore what is meant by mindfulness and write design criteria to fulfil a brief to develop a programmed product for timing a mindful moment. Lesson 1: Mindfullness and existing technology Lesson 2: Programming timers Lesson 3: Prototypes Lesson 4: Brand identity Outcome: Create a mindful moment timer
Year 5	**Textiles** **Learn:** Design a stuffed toy and make decisions on materials, decorations and attachments (appendages), after learning how to sew a blanket stitch. Lesson 1: Designing a stuffed toy Lesson 2: Blanket stitch Lesson 3: Details and appendages Lesson 4: Stuffed toy assembly Outcome: Design and make a stuffed toy	**Electrical systems** **Learn:** Learn about the development of exchanging personal messages, to the invention of the Penny Black stamp. Develop an electronic greeting card, using paper-applicable circuit components. Lesson 1: Greetings card Lesson 2: Series circuits Lesson 3: Inspired design Lesson 4: Electronic greeting card Outcome: Design and make a greetings card	**Food** **Learn:** Discover the farm to fork process, understand the key welfare issues for rearing cattle. Compare the nutritional value of existing sauces and develop a healthier recipe. Lesson 1: From farm to fork Lesson 2: What does healthy look like Lesson 3: Adapting and improving a recipe Lesson 4: Mamma mia! What a tasty, healthy Bolognese! Outcome: Create a healthy recipe	**Structures** **Learn:** Test and analyse various types of bridge to determine their strength and stability. Explore material properties and sources, before marking, sawing and assembling a wooden truss bridge. Lesson 1: Arch and beam bridges Lesson 2: Spaghetti truss bridges Lesson 3: Building bridges Lesson 4: Finalising bridges Outcome: Make a wooden bridge	**Mechanisms** **Learn:** Create a functional four-page pop-up storybook design, using lever, sliders, layers and spacers to create paper-based mechanisms. Lesson 1: Pop-up book page design Lesson 2: Making my pop-up book Lesson 3: Using layers and spacers Lesson 4: Writing and illustration Outcome: Design and make a pop-up book	**Digital world** **Learn:** Apply Computing knowledge and understanding to program a Micro: bit animal monitoring device. Develop 3D CAD skills by learning how to navigate the Tinkercad interface and essential tools to combine multiple objects. Lesson 1: Monitoring devices Lesson 2: Programming an animal Lesson 3: Plastic Lesson 4: 3D CAD skills Outcome: Program a Micro: bit animal monitoring device

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DT Long Term Planning Overview

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Year 6	**Food** **Learn:** Develop a three-course menu focused on three key ingredients, as part of a paired challenge to develop the best class recipes. Explore each key ingredient's farm to fork process. Lesson 1: Three ingredients; three courses Lesson 2: To start… Lesson 3: The main course Lesson 4: Dessert Outcome: Create a menu	**Textiles** **Learn:** Using a combination of textiles skills such as attaching fastenings, appliqué and decorative stitches, design, assemble and decorate a waistcoat for a chosen purpose. Lesson 1: Waistcoat design Lesson 2: Preparing fabric Lesson 3: Assembling my waistcoat Lesson 4: Decorating my waistcoat Outcome: Design and make a waistcoat	**Mechanisms** **Learn:** Develop a functional automata window display, to meet the requirements in a design brief. Explore and create cam, follower and axle mechanisms to mimic different movements. Lesson 1: Automatas Lesson 2: Frame assembly Lsson 3: Experimenting with cams Lesson 4: Finishing touches Outcome: Make an automata car	**Structures** **Learn:** Research existing playground equipment and their different forms, before designing and developing a range of apparatus to meet a list of specified design criteria. Lesson 1: Design a new playground Lesson 2: Building structures Lesson 3: Perfecting structures Lesson 4: Playground landscape Outcome: Design and make a playground	**Electrical systems** **Learn:** Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard. Lesson 1: Developing through play Lesson 2: Game plan Lesson 3: Base building Lesson 4: Electronics and assembly Outcome: Design and make a hand game	**Digital world** **Learn:** Design and program a navigation tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel. Lesson 1: Navigating the world Lesson 2: Programming a navigation tool Lesson 3: Product concept Lesson 4: 3D CAD models Lesson 5: Product pitch Outcome: Program a navigation tool