

D&T Learning Journey



Structures: Playgrounds

Children research existing playground equipment and their different forms, before designing and developing a range of apparatus to meet a list of specified design criteria.

Electrical systems: Steady hand games

Children 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.

Food: Come dine with me

Children 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

Year 6

Mechanical systems: Automata toys

Children 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.

Digital World: Navigating the World

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.

Food: What could be healthier?

Children 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.

Mechanical systems: Pop-up books

Children create a functional four-page pop-up storybook design, using lever, sliders, layers and spacers to create paper-based mechanisms.

Electrical systems: Electronic greeting cards

Children 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.

Digital World: Monitoring Devices

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.

Structures: Bridges

Children 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.

Year 5

Mechanical systems: Making a slingshot car

Using a range of materials, children design and make a car with a working slingshot mechanism and house the mechanism using a range of nets.

Structures: Pavilions

Children investigate and model frame structures to improve their stability, then apply this research to design and create a stable, decorated pavilion.

Electrical systems: Torches

Children identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design.

Textiles: Fastenings

Children 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.

Food: Adapting a recipe

Children 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.

Year 4

Mechanical systems: Pneumatic toys

Children explore pneumatic systems, then apply this understanding to design and make a pneumatic toy including thumbnail sketches and exploded diagrams.

Structures: Constructing a castle

Children identify and learn about the key features of a castle, before designing and making a recycled-material castle (structure).

Textiles: Cushions

Children learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion or Egyptian collar.

Food: Eating seasonally

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.

Digital World: Electronic Charm

Children design, develop a program, house and promote a Micro:bit electronic charm to use in low-light conditions.

Year 2

Structures: Baby bear's chair

Explore stability and methods to strengthen structures, to understand Baby Bear's chair weaknesses and develop an improved solution for him to use.

Mechanisms: Moving Monsters

Explore levers, linkages and pivots through existing products and experimentation, use this research to construct and assemble a moving monster.

Textiles: Pouches

Children learn how to sew a running stitch ready to design, make and decorate a pouch using a template.

Mechanisms: Fairground wheel

Children design and create a functional Ferris wheel, learn how different components fit together so that the wheel rotates and the structure stands freely.

Food: A balanced diet

Children learn about the food groups (carbohydrates, proteins, fruits and vegetables, dairy, oils and spreads) to understand a balanced diet to develop a healthy wrap.

Textiles: Puppets

Explore methods of joining fabric. Design and make a character-based hand puppet using a preferred joining technique, before decorating.

Structures: Constructing a windmill

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.

Year 1

Mechanisms: Wheels and axles

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.

Mechanisms: Moving Story book

Explore slider mechanisms and the movement they output, to design, make and evaluate a moving storybook from a range of templates.

Food: Fruit and vegetables

Children learn to distinguish between fruit and vegetables and where they grow. Design a fruit and vegetable smoothie and accompanying packaging.

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