Beacon

Shine brightly Year 6 with Design Technology - Autumn

Enquiry Question	Is it possible to design an electrical structure to generate energy?	**Focus:**	Renewal energy – wind turbine

Be Brilliant **CULTURAL DIVERSITY**
Enables our children to develop a growth mindset, by exposure to challenging experiences that allow our children to question and explore opportunities that will enable them to become confident and resilient in all areas of their lives.

Believe **POSSIBILITIES**
Allows our children to explore the world around them, knowing that the experiences they gain will enhance their lives and open doors to new adventures.

Bebrave **ADVENTURE**
Exposes our children to a rich and diverse world that is full of colour, music, creativity and celebration. Providing our children with the opportunity to see a world beyond their own, that will inspire and influence their future choices.

	Sequence of lesson	Outcome - from overview	Skills used (NC)
1	As designers, we are researching different sources of renewable energy	Children will research renewable sources of energy, with special consideration towards anemometers and wind turbines.	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.
2	As designers, we are researching and designing anemometers	Children to research and draw a design of an anemometer and label with materials that they intend to use for each part.	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.
3	As designers, we are creating and evaluating our anemometer designs	Children to create their anemometer and evaluate its suitability and durability for purpose	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
4	As designers, we are researching and designing wind turbines	Children to research and draw a design of a wind turbine and label with materials that they intend to use for each part.	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.
5	As designers, we are creating and evaluating our wind turbines	Children to create and evaluate their wind turbine prototypes.	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
6	As designers, we are creating our final wind turbine models	Children to create their final wind turbine models.	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Composite: Children to create and test their own wind turbines.

Beacon — Shine brightly Year 5 with Design Technology - Spring

Enquiry Question	The Sewing Bee Challenge!	Focus:	Textiles- refashioned fashion

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	Sequence of lessons	Outcome	Skills used (NC)
1	*As designers, we are researching the design process of making clothes*	Children look at fashion websites, catalogue and MYON to research different garments	Use research and develop design criteria to inform the design of functional items
2	*As designers, we are learning how to design / repurpose textiles to create something new* Children bring in some old clothing to study	Children discuss why it is good to recycle clothing and watch Sewing Bee extract on transforming an existing garment into another item of clothing for fashion show. Children study their items of clothing an begin to design an idea	Generate, develop, model and communicate their ideas through discussion, annotated sketches, pattern pieces and computer-aided design
3	*As designers, we are learning about sewing techniques and fastenings*	Children complete their pattern using paper before looking at different ways to join and shape textiles	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, joining and finishing], accurately Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities
4	*As designers, we are learning to make a garment*	Children use their sketchbook ideas, old clothing and techniques to start transforming their recycled garment	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, joining and finishing], accurately Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities
5/6	*As designers, we are learning to complete a garment*	Children continue transforming their recycled garment and make evaluations to improve their design. They make adjustments	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Composite
Lesson 6 – the final garment in a fashion show - choose a backdrop pose - show to be post on FaceBook

Beacon

Shine brightly Year 5 Summer with Design Technology

Enquiry Question	How can a cam mechanism make something move up and down?	Focus:	Mechanisms – Cam automation

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Be brave **ADVENTURE**
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	Sequence of lessons	Outcome - from overview	Skills used (NC)
1	As designers, we are learning to research what a cam is.	Knowledge Harvest: What do you already know about cams? Research what a cam is and how it works. Draw an annotated sketch of how a cam works.	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
2	As designers, we are learning evaluate the use of cams in a range of products to create a design criteria. Study web images and animations of automata and moving toys. Which parts turn/move? How are the different parts attached to allow free movement? How are the moving parts guided into place? Look at the moving part-why has the designer chosen this idea? Discuss the importance of the decoration surrounding the mechanism which gives the product its finished quality.	Analyse a range of moving toys and discuss what are the important features and why. Using annotated sketches, create a design criteria for a new toy that uses a cam mechanism.	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 Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
3	As designers, we are learning make a cam mechanism.	Construct a cam using doweling and cardboard. Test out different cams and record the change in movement.	Select from and use a wider range of tools and equipment to perform practical tasks Understand and use mechanical systems in their products
4	As designers, we are learning to design a moving toy that uses a cam mechanism.	Sketch and annotate a design for a toy intended for a particular person. Deciding on all materials and final finishes. Gather materials and start construction.	Understand and use mechanical systems in their products Generate, develop, model and communicate their ideas through discussion, annotated sketches
5	As designers, we are learning to make a moving toy with a cam mechanism.	Use a range of tools and joining techniques to construct a moving toy following the design.	Select from and use a wider range of tools and equipment to perform practical tasks Select from and use a wider range of materials and components, according to their functional properties and aesthetic qualities
6	As designers, we are learning to evaluate our moving toy against the design criteria.	Present final toys and evaluate their success against the design criteria.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

Composite: Lesson 6 – children make a toy from scratch and use them in small groups