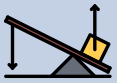
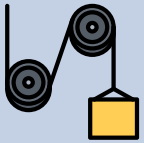
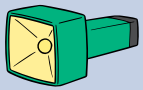
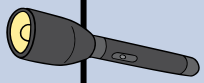
MTP Autumn Conflict	Engages with Debate	Vocabulary	Technical Knowledge	Research	Design	Make	Evaluate
KS1	 **How can we build a durable castle?**	Durable Materials Safety/ly Tools Measure Mark Fold Tear Cut Curl	Know how to cut materials safely using tools. Know how to measure and mark out to the nearest centimetre. Know how to use a range of cutting, folding and joining techniques	Establish the necessary features of a castle Research different models of castles Discuss and agree the qualities a castle needs to be durable	 Design a castle that can withstand water, vibrations and wind	Make a product, refining the design as work progresses. 	Evaluate a design against a success criteria.
KS2	 **How can we use mechanics to simplify manual labour?** 	Convert Rotary motion Linear motion Cams Transference of forces Mechanisms Levers Pulleys Winding mechanisms Gears	Know how to convert rotary motion to linear using cams. Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). How to use a wider range of tools and equipment to perform practical tasks [for example: cutting, shaping, joining and finishing] accurately.	 Compare a range of simple mechanical systems used throughout history 	Design with the user in mind, a functional product that is fit for purpose (a device to simplify manual labour) Create a set of design criteria for a mechanical implement	Make a product through stages of prototypes, making continual refinements	Evaluate their product against the set design criteria.

MTP Spring Plant Earth	Consortium Develop • Create • Engage Engages with Debate	**Vocabulary**	**Technical Knowledge**	**Research**	**Design**	**Make**	**Evaluate**
KS1	**What does a healthy meal look like to you?** 	 Cut Peel Grate Ingredients Safely Hygienic Healthy Varied diet Measure Weigh Electronic scales	Know how to cut, peel or grate ingredients safely and hygienically. Know the basic principles of a healthy and varied diet to prepare dishes. Know how to measure or weigh using measuring cups or electronic scales.	Identify a range of meals enjoyed by children Discuss the healthy food groups Sort meals/ ingredients into healthy and unhealthy groups		Make a meal by assembling or cooking ingredients	Evaluate their meal against a design criteria. 
KS2	**How does sustainability impact a human diet?** 	Sustainable Microorganisms Ratios Scale Variety Processed Savoury Aesthetic Environmental Accurate Ingredients Recipe	Know where and how a variety of ingredients are grown, reared, caught and processed. Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.	Understand what sustainability means in relation to food	Design a savoury dish with sustainable ingredients	Make and refine a recipe for a sustainable savoury dish	Evaluate the savoury dish so as to suggest improvements to taste and aesthetic qualities.

MTP Summer Britain	Consortium Develop•Create•Engage Engages with Debate	**Vocabulary**	**Technical Knowledge**	**Research**	**Design**	**Make**	**Evaluate**
KS1	 **What clothes would be fit for a Queen?**	**Thread** **Needle** **Decorate** **Textiles** **Templates** **Stitch** **Running stitch** **Technique** **Purpose** **Join**	Children know: how to shape textiles using templates. How to thread a needle. How to join textiles using running stitch. How to colour and decorate textiles using a number of techniques.	 Research clothing items discussing designs and simple construction (The Queen's Knickers) 	Design clothing for a purpose and specific user.	Make a product, refining the design as work progresses.	Evaluate their product against, a given design criteria.
KS2	 **What is a traditional British meal?** 	Sustainable Microorganisms Ratios Scale Processed Savoury Aesthetic Environmental Accurate Calculate Ingredients Recipe Variety	Children know what sustainability means in relation to food. Children Understand the importance of correct storage and handling of ingredients Children measure accurately and calculate ratios of ingredients to scale up or down from a recipe.	Children use their geographical knowledge to investigate how a variety of ingredients are grown, reared, caught and processed. Children research meals from a range of cultures in Britain	 Design a savoury dish with consideration of sustainable ingredients. Design a dish that reflects British traditions	 Make and refine a recipe for a sustainable, savoury, traditional British dish. 	Evaluate the savoury dish so as to suggest improvements to taste and aesthetic qualities.

MTP Autumn Human Kind	Consortium Develop•Create•Engage Engages with Debate	**Vocabulary**	**Technical Knowledge**	**Research**	**Design**	**Make**	**Evaluate**
KS1	**What instrument would Mr Noisy play?**	Drill Screw Glue Cut Nail Safely Strengthen Tools Product Designs User	Know how to drill, screw, glue and nail materials to make and strengthen products. Know how to cut materials safely using tools.	Research a range of instruments recognising how volume can be changed	Design a product that has a clear purpose and an intended user.	Make a product, refining the design as work progresses.	Evaluate existing designs, saying what they like and dislike before designing their own.
KS2	**What is the most effective way to save the islander?**	Aesthetic qualities Functional properties Innovative Durable Construction Materials Components Shaping Joining Finishing Accurate	Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding) Choose suitable techniques to construct products or to repair items. Know how to build models using a range of materials that can be manipulated.	Research a range of rafts built using a variety of materials	Design, with the user in mind, a functional product that is fit for purpose i.e build a raft for the "man" in The Island	Make a product that is effective for the purpose intended (i.e a raft that floats)	Evaluate their own and their peers' designs against a design criteria and say how the design could be improved.

MTP Spring Inventions	Consortium Develop•Create•Engage Engages with Debate	**Vocabulary**	**Technical Knowledge**	**Research**	**Design**	**Make**	**Evaluate**
KS1	**How can electricity be used to help us?** 	Circuit Electricity Faults Batteries Design Wire Component	Know what a series circuit is. Know that the cell or battery provides the power. How to find faults in circuits and battery operated devices	Invent a battery powered product to help people in everyday life 	Design a functional product based on a design criteria.	Make a product, selecting and using a range of materials and components.	 Evaluate their product against a design criteria.
KS2	**Why are torches all different shapes and sizes?** 	Series circuit Parallel circuit Symbols Circuits Components Exploded diagram Prototypes Continual refinements Electronic kits	Know how series and parallel circuits work. Draw circuits in designs using the correct symbols. Know to draw an exploded diagram.	Research a variety of torches and understand why they are constructed differently 	 Design with the user in mind, a functional product that is fit for purpose I.e. a reading light that is compact or a general torch that is bright	Make a product through stages of prototypes, making continual refinements.	Evaluate the design of products, to improve the user experience

MTP Summer Civilisations	Consortium Develop • Create • Engage Engages with Debate	**Vocabulary**	**Technical Knowledge**	**Research**	**Design**	**Make**	**Evaluate**
KS1	**How can we improve the speed of a vehicle?**	Levers Sliders Wheels Axles Mechanisms Design criteria Product	How to create products using mechanisms, such as levers, sliders, wheels, axles. 	 Research a range of wheeled vehicles Identify which what makes a vehicle fast and reliable	Design a product that has a clear purpose and an intended user	Make a product, refining the design as work progresses.	Evaluate their product against a design criteria. 
KS2	 **What uses do cams and cranks have?**	Aesthetic qualities Functional properties Innovative Durable Cams Cranks Moving element Construction Materials Components	How to strengthen materials using suitable techniques. How to use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.	Research existing cam and crank products and toys.	Design a product with a moving element.	Make a product using innovative designs that use cams and cranks to create movement. Refine the design as work progresses	Evaluate the design of the product in relation to movement and durability.