



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanisms	Pupils will know- Common uses of sliders Different methods to create card sliders How sliders can create simple mechanisms	Pupils will know- How wheels and axles work together The size and position of wheels affects how they move	Pupils will know- Types of levers and linkages Key terminology relating to levers and linkages How levers and linkages can change the direction of movement	Pupils will know- Types of hinges and the related terminology Common uses for hinges	Pupils will know- Types of gears and terminology relating to gears Common uses of pulleys and gears How pulleys and gears can change the direction of movement	Pupils will know- Types of pulley systems and gears Common uses of pulleys and gears How pulleys and gears can create simple mechanisms and change direction of movement
	Pupils will be able to- Design and make a slider product Evaluate the success of their outcomes and recommend improvements	Pupils will be able to- Create a simple wheel mechanism Use wheel mechanisms to propel a simple vehicle	Pupils will be able to- Design and make simplistic lever and linkage products Evaluate the success of their outcomes and recommend improvements	Pupils will be able to- Make a variety of model hinges Make and evaluate hinged products using modelling materials	Pupils will be able to- Design and make products that use pulleys and gears to lift loads Evaluate the success of their outcomes and recommend improvements	Pupils will be able to- Design and make a model Ferris wheel powered by gears Evaluate the success of their outcomes and recommend improvements
Structures	Pupils will know- A freestanding structure is a structure that stands on its own foundation or base without attachment to anything else	Pupils will know- Paper becomes stronger when it is folded A load is the amount of weight a structure must carry	Pupils will know- Bridges are structures that allow people and vehicles to cross over an open space Towers, piers and arches provide strength to a bridge	Pupils will know- Triangles provide stability in a structure Structural engineers work with architects to ensure structures withstand forces	Pupils will know- Engineers use a range of methods to strengthen and reinforce structures	Pupils will know- Structures can be supported with guy lines and flying buttresses The shorter the piece of spaghetti, the stronger it will be
	Pupils will be able to- Build structures that are freestanding using a range of different materials	Pupils will be able to- Fold paper to increase strength and stability Test and record how much weight paper can hold	Pupils will be able to- Design and build a beam bridge that can hold the weight of 100 pennies Identify and name parts of a bridge	Pupils will be able to- Make triangles to form and join trusses Identify the forces that affect structures	Pupils will be able to- Identify and describe ways that frames are strengthened and reinforced	Pupils will be able to- Construct a flying buttress to support a tower Use appropriate lengths of spaghetti to increase strength and stability
Food and Nutrition	Pupils will know- Why colourful food can be healthier How different foods can affect their senses The importance of including a range of vegetables in a diet	Pupils will know- Why vegetables are so important to our health What processed foods are The difference between fresh food and ultra-processed foods	Pupils will know- What is meant by the term balanced Why fresh foods are better How food can help their body and mind How to prepare and cook a range of vegetables	Pupils will know- Processed foods have many added ingredients That cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food	Pupils will know- Some foods and key ingredients from other cultures How other cultures' food can be nutritious How foods can be used as medicines How eating food from different countries can help us be healthy	Pupils will know- What street foods are How snacks can be good foods to eat The difference between slow release and quick release carbohydrates How food can improve their mood and energy levels
	Pupils will be able to- Peel, chop and grate a selection of vegetables Modify food to suit their food senses Peel, grate, season and breadcrumb a range of vegetables	Pupils will be able to- Prepare a range of salad vegetables Shape and season a bread snack Shape and form ingredients to make delicious food	Pupils will be able to- Make a fruit and yoghurt dessert Make homemade chips Flavour foods to increase their sensory qualities Peel and grate a range of vegetables	Pupils will be able to- Make, roll and shape bread dough Make a soup Peel, grate and chop vegetables to make economical, tasty and healthy food	Pupils will be able to- Make, roll and cook a flatbread Prepare a range of vegetables Present foods to a high standard Roll and shape ingredients Slice and ribbon a range of vegetables	Pupils will be able to- Make a burrito Make and roll bread dough Make a savoury pastry Dice, slice, peel, grate and cook a range of vegetables Make a sauce and a stock

		Use a range of culinary techniques	Add flavour and texture to foods		Stir-fry vegetables	Use height and colour to improve the visual appeal of food
Understanding materials	Pupils will know- Building materials have different properties which enable them to be used for different purposes	Pupils will know- Materials can be modified to become waterproof Origami comes from the Japanese words: ori – folding and kami – paper				
	Pupils will be able to- Identify, sort and select materials that can be used in construction Combine materials	Pupils will be able to- Make paper waterproof Transform flat paper by folding and creasing to form a hat				
Textiles	Pupils will know- Fabric can be joined together using a running stitch The types and names of tools needed for sewing	Pupils will know- How to cut out shapes which have been created by using a template How to use a range of basic sewing skills	Pupils will know- Fabric can be stiffened Stiffened fabric can hold a form	Pupils will know- Fastenings have different functions A shank provides a small amount of space between the button and fabric	Pupils will know- How to waterproof cotton fabric Which fabrics are both functional and hardwearing	Pupils will know- Plastic waste can be recycled and repurposed into practical, useful items
	Pupils will be able to- Create a running stitch Select tools for sewing Thread a needle	Pupils will be able to- Use a template to transfer a pattern Cut out and join fabric shapes using a template	Pupils will be able to- Select and apply solutions to stiffen fabric Make a box using stiffened fabric	Pupils will be able to- Select appropriate fastenings and attach them to fabric Make a shank for a button	Pupils will be able to- Use beeswax to waterproof cotton fabric Repurpose a pair of jeans	Pupils will be able to- Make a crochet hook out of a chopstick Use plastic bags and snack packets to create practical items
Systems and electrical systems			Pupils will know- Different types of energy Why designers need to carefully consider energy sources	Pupils will know- A switch is an interruption in a circuit Switches are widely used in a range of products	Pupils will know- Technology can be used to program and control a product	Pupils will know- More than one switch can be used to change the functionality of a product
			Pupils will be able to- Identify how things are powered Suggest appropriate energy sources for design problems	Pupils will be able to- Incorporate different types of switches into circuits to perform a function	Pupils will be able to- Combine elements of their design knowledge to fulfil a brief	Pupils will be able to- Use switches to adapt a product in response to a design brief