



The DT Curriculum

Year 4

National Curriculum Objectives

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

4 Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where

Year 4		Autumn 1 – Textiles (Book Covers)	
National Curriculum			
National Curriculum objectives: <ul style="list-style-type: none">Investigate and analyse a range of existing products.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 groupsEvaluate their ideas and products against a design criteriaBuild structures, exploring how they can be made stronger, stiffer or more stableSelect from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualitiesSelect and use a wider range of tools and equipment to perform a practical task.			
Cross-Curricular Links:			
<ul style="list-style-type: none">British Values: Mutual Respect			
Prior Learning		Future Learning	
EYFS: <ul style="list-style-type: none">Develop threading and weaving skills.Develop their fine motor skills so that they can use a range of tools competently, safely and confidently.Practice and apply weaving skills to specific materials.Created a product using a design.Reflected on what they have achieved. Year 1 <ul style="list-style-type: none">Know joining technique means connecting two pieces of materials.Know that there are various methods of joining fabric e.g., glue, pins or staples.Know that a template is used to cut out the same shape multiple times.Know that a design is useful to see how an idea will look.		Year 5 <ul style="list-style-type: none">Know that a blanket stitch is useful to reinforce edges of fabric or join two fabrics together.Know small, neat stitches which are pulled taut see important to ensure the toy is strong and holding stuffing securely.	
Design	Make	Evaluate	Technical Knowledge
<ul style="list-style-type: none">Writing design criteria for a product, articulating decisions made.Designing a personalised book sleeve.	<ul style="list-style-type: none">Making and testing a paper template with accuracy and in keeping with the design criteria.Measuring, marking and cutting fabric using a paper template.Selecting a stitch style to join fabric.Working neatly by sewing small, straight stitches.Incorporating a fastening to a design.	<ul style="list-style-type: none">Testing and evaluating an end product against the original design criteria.Deciding how many of the criteria should be met for the product to be considered successful.Suggesting modifications for improvement.Articulating the advantages and	<ul style="list-style-type: none">To know that a fastening is something which holds two pieces of material together.To know that different fastening types are useful for different purposes.

		disadvantages of different fastening types.			
Substantive Knowledge Acquired in the Unit					
<ul style="list-style-type: none">Know that a fastening is something that holds two pieces of material together.Know that different fastening types are useful for different purposes.					
Disciplinary Knowledge Acquired in the Unit					
Fixing and Joining <ul style="list-style-type: none">Joining and reinforcing fabricsDemonstrating fabric can be joined in a number of different ways – sewing using a range of stitches. Finishing <ul style="list-style-type: none">Using a widening range of decorative techniques such as dyeing and embroidery, embellishing, applique, fabric paints, fastenings (buttons, buckles, press studs, hooks and eyes, Velcro, safety pins, zip, ties					
Key Skills Acquired in the Unit					
<ul style="list-style-type: none">Writing a design criteria for a product articulating decisions made.Designing a personalised book sleeve.Making and testing a paper template with accuracy.Measure, make and cut fabric using a paper template.Select a stitch type to join fabric.Sew neatly using a regular stitch.Test and evaluate an end product.					
Misconceptions					
Some children may think: <ul style="list-style-type: none">Zips are the only form of fastening.You can only fasten two items.					
By the end of this unit pupils will:					
<ul style="list-style-type: none">Identify the features, benefits and disadvantages of a range of fastening types.Write design criteria and design a sleeve that satisfies the criteria.Make a template for their book sleeve.Assemble their case using any stitch they are comfortable with.					
Medium Term Planning					
	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Retrieval	Flashback 4 Question 1: What is the person in the picture doing? (Threading, weaving , cutting, gluing) Question 2: What is the picture of? (fabric, needle , template, thread)	Flashback 4 Question 1: What do we call something that holds two pieces of fabric together securely? (assemble, template, fastening , stitch) Question 2: Which one of these would not be used as a fastening? (glue , button, Velcro, buckle)	Flashback 4 Question 1: What is the person in the picture doing? (Threading , weaving, cutting, gluing) Question 2: What word best describes when we put parts together? (Design, evaluation, assemble , template)	Flashback 4 Question 1: What is the name of a stencil you can use to help you draw the same shape more easily onto different materials? (audience, assemble, template , fastening) Question 2: Which word is used to describe when a	Flashback 4 Question 1: What do we call something that holds two pieces of fabric together securely? (assemble, template, fastening , stitch) Question 2: What word do we use to describe adding decorations to the product?

	<p>Question 3: What word is missing? 'A running stitch is a style of sewing in a ____ line with no overlapping. (curvy, wavy, straight, round)</p> <p>Question 4: What do you call the part of the needle you put the thread through? (nose, eye, ear, mouth)</p>	<p>Question 3: What is the first step when sewing a running stitch? (knot the needle, start the stitch from the bottom going up and down, thread the needle, knot the last stitch)</p> <p>Question 4: What is the second step when sewing a running stitch? (knot the needle, start the stitch from the bottom going up and down, thread the needle, knot the last stitch)</p>	<p>Question 3: What is the third step when sewing a running stitch? (knot the needle, start the stitch from the bottom going up and down, thread the needle, knot the last stitch)</p> <p>Question 4: What is the final step when sewing a running stitch? (knot the needle, start the stitch from the bottom going up and down, thread the needle, knot the last stitch)</p>	<p>product is aimed at a group? (target audience, fastening, evaluation, design)</p> <p>Question 3: Why do we evaluate a product? (to help us write down our ideas, to put parts together, to improve a product, to draw round a product)</p> <p>Question 4: When sewing a running stitch, stitches should be ____ and close together so they are strong. (large, small, round, together)</p>	<p>(threading, knotting, shaping, embellish)</p> <p>Question 3: What can you use to join fabrics together? (Glue, staples, pins, thread)</p> <p>Question 4: What tool do you use to sew with? (Scissors, glue stick, stapler, needle)</p>
Learning Objective:	To identify and evaluate different types of fastenings	To design a product to meet design criteria.	To make and test a paper template.	To assemble a book sleeve.	To evaluate a book jacket.
Key vocabulary	<p>Tier 2</p> <ul style="list-style-type: none"> Identify Advantage Disadvantage Benefits Manufacture <p>Tier 3</p> <ul style="list-style-type: none"> Fabric Fastening 	<p>Tier 2</p> <ul style="list-style-type: none"> Product Criteria <p>Tier 3</p> <ul style="list-style-type: none"> Fabric Fastening Measurements Decorations 	<p>Tier 2</p> <ul style="list-style-type: none"> Template Assemble Sections <p>Tier 3</p> <ul style="list-style-type: none"> Fabric Fastening 	<p>Tier 2</p> <ul style="list-style-type: none"> Template Assemble Attach <p>Tier 3</p> <ul style="list-style-type: none"> Fabric Fastening Applique Needle Thread 	<p>Tier 2</p> <ul style="list-style-type: none"> Audience Purpose Improve <p>Tier 3</p> <ul style="list-style-type: none"> Fabric Fastening Measurements Decorations
Possible outcome	Children will look at fastenings products and consider the advantages and disadvantages for each fastening type	Show a range of book sleeve examples. Children will decide who their book sleeve will be for. They will plan colours, materials, ideas and characters they would include in their design.	Children will cut their paper templates out (to size) and assemble using pins, checking that the joins work as they should and that the shape is as per their design. Once children are happy with their template, they will pin it to their fabric ready to be cut out	Children will assemble their book jackets using the envelope or jacket style. They will use the applique stitch to attach shapes, sequins and beads.	Children will evaluate the purpose of their book jacket. Children will decide if the book jacket meet each point on the design criteria which was planned earlier in the unit.

Year 4		Spring 1 – Electrical Systems (Torches)	
National Curriculum			
National Curriculum objectives <ul style="list-style-type: none">Investigate and analyse a range of existing productsUnderstand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]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.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, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.			
Cross-Curricular Links:			
<ul style="list-style-type: none">Science: Identify common appliances that run on electricityScience: Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzersScience: Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a batteryScience: Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuitScience: Recognise some common conductors and insulators, and associate metals with being good conductor.			
Prior Learning		Future Learning	
Nursery <ul style="list-style-type: none">Explore how things work.		Year 6 (Science) <ul style="list-style-type: none">Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.Use recognised symbols when representing a simple circuit in a diagram.	
Design	Make	Evaluate	Technical Knowledge
<ul style="list-style-type: none">Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas	<ul style="list-style-type: none">Making a torch with a working electrical circuit and switch.Using appropriate equipment to cut and attach materials.Assembling a torch according to the design and success criteria.	<ul style="list-style-type: none">Evaluating electrical products.Testing and evaluating the success of a final product.	<ul style="list-style-type: none">To understand that electrical conductors are materials which electricity can pass through.To understand that electrical insulators are materials which electricity cannot pass through.To know that a battery contains stored electricity that can be used to power products.To know that an electrical circuit must be complete for electricity to flow.To know that a switch can be used to complete and break an electrical

				circuit.	
Substantive Knowledge Acquired in the Unit					
<ul style="list-style-type: none">Know that electrical conductors are materials which electricity passes through.Know that electrical insulators are materials that electricity cannot pass through.Know that a battery contains stored electricity that can be used to power products.Know that an electrical circuit must be completed for electricity to flow.Know that a switch can be used to complete and break an electrical circuit.					
Disciplinary Knowledge Acquired in the Unit					
Mechanisms and control <ul style="list-style-type: none">Applying knowledge about electrical circuits in designing and making product.					
Key Skills Acquired in the Unit					
<ul style="list-style-type: none">Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.Making a torch with a working electrical circuit and switch.Using appropriate equipment to cut and attach materials.Assembling a torch according to the design criteria.Evaluating a electrical product.Testing and evaluating the success of a final product.					
Misconceptions					
Some children may think: <ul style="list-style-type: none">electricity flows to bulbs, not through themelectricity flows out of both ends of a batteryelectricity works by simply coming out of one end of a battery into the component.					
By the end of this unit pupils will:					
<ul style="list-style-type: none">Identify electrical products and explain why they are useful.Help to make a working switch.Identify the features of a torch and how it works.Describe what makes a torch successful.Create suitable designs that fit the success criteria and their own design criteria.Create a functioning torch with a switch according to their design criteria.					
Medium Term Planning					
	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Retrieval		Flashback 4 Question 1: Look at the pictures - which of these items does not require electricity to work? Question 2: What is the name of something that has two or more cells put together to provide electrical energy to power a	Flashback 4 Question 1: Look at the pictures – which of these items does require electricity to work? Question 2: What is the name of a material that allows electricity to flow through it?	Flashback 4 Question 1: Look at the pictures – which of these items does require electricity to work? Question 2: Look at the diagram. What is symbol showing? (battery, buzzer, switch, wire)	Flashback 4 Question 1: Look at the diagram. What is symbol showing? (battery, buzzer, switch, wire) Question 2: What is the name of a material that allows electricity to flow through it?

		<p>circuit? (bulb, buzzer, battery, switch)</p> <p>Question 3: What is the name of something that is made from glass or plastic and gives out light when electricity passes through? (bulb, buzzer, battery, switch)</p> <p>Question 4: What is the name of something that is part of a circuit and you can open or close to allow electricity to flow through? (bulb, buzzer, battery, switch)</p>	<p>(switch, battery, conductor, insulator)</p> <p>Question 3: What is the name of a material that doesn't allow electricity to flow through it? (switch, battery, conductor, insulator)</p> <p>Question 4: What is the name of something that makes a buzzing noise when electricity passes through? (battery, buzzer, bulb, switch)</p>	<p>Question 3: Look at the diagram. What is symbol showing? (battery, buzzer, switch, wire)</p> <p>Question 4: Look at the diagram. What is symbol showing? (battery, buzzer, switch, wire)</p>	<p>(switch, battery, conductor, insulator)</p> <p>Question 3: What is the name of a material that doesn't allow electricity to flow through it? (switch, battery, conductor, insulator)</p> <p>Question 4: Why do we evaluate a product? (to help us write down our ideas, to put parts together, to improve a product, to draw round a product)</p>
Learning Objective:	To learn about electrical items and how they work.	To analyse and evaluate electrical products.	To design a product to fit a set of user needs.	To make a torch.	To evaluate the torch.
Key vocabulary	<p>Tier 2</p> <ul style="list-style-type: none"> • Diagram • Insulator • Conductor • Product <p>Tier 3</p> <ul style="list-style-type: none"> • Battery • Bulb • Buzzer • Electricity • Switch • Circuit 	<p>Tier 2</p> <ul style="list-style-type: none"> • Component • Criteria • Diagram • Audience • Model <p>Tier 3</p> <ul style="list-style-type: none"> • Battery • Bulb • Circuit • Electricity • LED • Shape 	<p>Tier 2</p> <ul style="list-style-type: none"> • Criteria • Component • Recyclable • Theme • Input • Product <p>Tier 3</p> <ul style="list-style-type: none"> • Circuit • Switch 	<p>Tier 2</p> <ul style="list-style-type: none"> • Assemble • Criteria • Aesthetics • Diagram • Insulator • Model • Properties <p>Tier 3</p> <ul style="list-style-type: none"> • Battery • Bulb • Circuit • Conductor • Electricity • Equipment • Shape • Sketch • Switch • Test 	<p>Tier 2</p> <ul style="list-style-type: none"> • Assemble • Criteria • Aesthetics • Diagram • Insulator • Model • Properties <p>Tier 3</p> <ul style="list-style-type: none"> • Battery • Bulb • Circuit • Conductor • Electricity • Equipment • Shape • Sketch • Switch • Test
Possible outcome	Children will build a range of electrical circuits using a buzzer and switch.	Children will evaluate torch products, focusing on the shape, the possible use and whether the design is fit for purpose.	Children will sketch a torch design, focusing on each point of the design criteria. Children will consider: what materials they will use to be effective and how they will keep the circuit safe and secure inside the housing.	Children will use a plastic bottle to create their torches by creating the house, making the switch, making the reflector, securing the bulb, positioning the circuitry and adding the extras.	<p>Discuss the questions below to help the children test if their torch is fit for purpose:</p> <ul style="list-style-type: none"> • Does the torch light up? • Can the torch be switched on and off?

					<ul style="list-style-type: none">Does the circuit remain securely in place when carrying the torch?
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Year 4		Summer 1 - Mechanical Systems (Making a Slingshot Car)	
National Curriculum			
National Curriculum objectives: <ul style="list-style-type: none">• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately• Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities• Investigate and analyse a range of existing products• Understand how key events and individuals in design and technology have helped shape the world• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]• 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			
Prior Learning		Future Learning	
EYFS <ul style="list-style-type: none">• Know how to use a range of basic tools competently, safely and confidently.• know how to explore a range of materials and use senses to explore and investigate them e.g. construction kits: wheels and axles have movable parts.• know how to construct using a wider range of construction kits using different techniques to fasten and connect things together.• know that different objects and materials can represent things in my pretend play: e.g. I can use a cereal box to represent my house; or use a 3D block as a chair.• know and use appropriate vocabulary to name and describe my models by talking and explaining about my model, how it works and what materials I have used.• know more about using a range of different media (natural and manmade) to construct basic models to represent transport vehicles. Year 1 <ul style="list-style-type: none">• A wheel needs to be round to rotate.• A wheel must be attached to a rotating axle to move.• An axel moves within an axel holder.• A frame of a vehicle (chassis) needs to be balanced.		Year 6 <ul style="list-style-type: none">• Know that the mechanism in an automata uses a system of cams, axles and followers.• Know that different shaped cams produce different outputs.• Know that an automata is a hand-powered mechanical toy.• Know that a cross-sectional diagram shows the inner workings of a product.	
Design	Make	Evaluate	Technical Knowledge
<ul style="list-style-type: none">• Designing a shape that reduces air resistance.• Drawing a net to create a structure from.• Choosing shapes that increase or decrease speed as a result of air resistance.• Personalising a design.	<ul style="list-style-type: none">• Measuring, marking, cutting and assembling with increasing accuracy.• Making a model based on a chosen design.	<ul style="list-style-type: none">• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance	<ul style="list-style-type: none">• To understand that all moving things have kinetic energy.• To understand that kinetic energy is the energy that something (object/person) has by being in motion.• To know that air resistance is the level of drag on an object as it is

			<ul style="list-style-type: none"> forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance.
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Substantive Knowledge Acquired in the Unit

- Know that products change and evolve over time.
- Know that aesthetics means how an object or product looks in design and technology.
- Know that a template is a stencil you can use to help you draw the same shape accurately.
- Know that a birds-eye view means a view from a high angle (as if a bird in flight).
- Know that graphics are images which are designed to explain or advertise something.
- Know that it is important to assess and evaluate design ideas and models against a list of design criteria.

Disciplinary Knowledge Acquired in the Unit

Fixing and Joining

- Relate a mechanism to its purpose and select for a desired type of movement

Mechanisms and Control

- Understanding linkage mechanisms and the type of movement they produce

Key Skills Acquired in the Unit

- Designing a shape that reduces air resistance.
- Drawing a net to create a structure from.
- Choosing shapes that increase or decrease speed as a result of air resistance.
- Personalise a design.
- Measuring, making, cutting and assembling with increasing accuracy.
- Making a model based on a chosen design.
- Evaluating the speed of the final product.

Misconceptions

Some children may think:

- The smaller the car the quicker it will travel.
- The bigger the wheels the quicker the car will travel.
- The shape of the car doesn't impact the speed.

By the end of this unit pupils will:

- Work independently to produce an accurate, functioning car chassis.
- Design a shape that is suitable for the project.
- Attempt to reduce air resistance through the design of the shape.
- Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed.
- Construct car bodies effectively.
- Conduct a trial accurately and draw conclusions and improvements from the results.

Medium Term Planning

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Retrieval	Flashback 4	Flashback 4	Flashback 4	Flashback 4	Flashback 4

	<p>Question 1: What is this a picture of? (Axel, axel holder, vehicle, wheel)</p> <p>Question 2: What is this a picture of? (Axel, axel holder, vehicle, wheel)</p> <p>Question 3: What is this a picture of? (Axel, axel holder, vehicle, wheel)</p> <p>Question 4: What is this a picture of? (Axel, axel holder, vehicle, wheel)</p>	<p>Question 1: Which word is missing? 'Wheels are circular ____ (axle, discs, axle holder, vehicle)</p> <p>Question 2: Which word is missing? 'Wheels are attached by the ____' (axle, discs, axle holder, vehicle)</p> <p>Question 3: Which word is missing? 'The axle moves inside the ____' (axle, discs, axle holder, vehicle)</p> <p>Question 4: Which word is missing? 'The axle holder is attached to the body of the ____ (axle, discs, axle holder, vehicle)</p>	<p>Question 1: Vehicles need ____ wheels to balance the body. (square, rectangular, round, triangular)</p> <p>Question 2: The wheels need to be attached to the ____ (discs, axle, axle holder, body)</p> <p>Question 3: The axle needs to be inside the ____ ((discs, axle, axle holder, body)</p> <p>Question 3: What do you call the body of a car? (axle, axle holder, discs, chassis)</p> <p>Question 4: 'The level of drag on an object as it is forced through the air.' What is this called? (chassis, air resistance, structure, kinetic energy)</p>	<p>What do we call the body of the car? (axle, axle holder, wheel, chassis)</p> <p>Question 2: Which word is missing? 'Wheels are attached by the ____' (axle, discs, axle holder, vehicle)</p> <p>Question 3: What is the energy that causes an object to move called? (air resistance, kinetic energy, chassis, structure)</p> <p>Question 4: Which word is used to describe when we put something together? (Structure, rigid, manipulate, assemble)</p>	<p>Question 1: Which word is missing? 'The axle holder is attached to the body of the ____ (axle, discs, axle holder, vehicle)</p> <p>Question 2: What is this a picture of? (Axel, axel holder, vehicle, wheel)</p> <p>Question 3: Why do we evaluate a product? (to help us write down our ideas, to put parts together, to improve a product, to draw round a product)</p> <p>Question 4: 'The level of drag on an object as it is forced through the air.' What is this called? (chassis, air resistance, structure, kinetic energy)</p>
Learning Objective:	To build a car chassis.	To design a shape that reduces air resistance.	To make a model based on a chosen design.	To assemble my completed product.	To test my completed product.
Key vocabulary	<p>Tier 2</p> <ul style="list-style-type: none"> • Kinetic • Construction • Mechanism <p>Tier 3</p> <ul style="list-style-type: none"> • Chassis • Energy 	<p>Tier 2</p> <ul style="list-style-type: none"> • Structure • Resistance • Research • Model • Template <p>Tier 3</p> <ul style="list-style-type: none"> • Chassis • Air 	<p>Tier 2</p> <ul style="list-style-type: none"> • Structure • Resistance • Research • Model • Template • Graphics <p>Tier 3</p> <ul style="list-style-type: none"> • Chassis • Air 	<p>Tier 2</p> <ul style="list-style-type: none"> • Structure • Resistance • Research • Model • Template • Graphics • Assemble <p>Tier 3</p> <ul style="list-style-type: none"> • Chassis • Air 	<p>Tier 2</p> <ul style="list-style-type: none"> • Structure • Resistance • Research • Model • Template • Graphics • Assemble <p>Tier 3</p> <ul style="list-style-type: none"> • Chassis • Air
Possible outcome	Children will use the demonstration video to create their own car chassis.	Children will use the design brief to create five design criterias. Children will communicate their ideas by drawing their car bodies from different angles.	Children will create all their panels and apply the graphics to them, either by drawing their designs and colouring them or gluing different coloured paper/card onto the panels. Children will construct the car, assembling each panel using a glue gun.	Children will assemble their car bodies to the chassis.	In their groups, children will carry out the time trials and record the results in a table.