

CurriculumPRO

[Subject narrative](#)
[Year group narrative](#)
[Subject sequence](#)
[Big idea interconnections](#)
[Concept search](#)
[Subject vocabulary](#)

Childhood

1 Programme of study, 1 skills and 1 knowledge statement

Year 1 [Driver subject](#) [History](#) [Structures](#)



Y1 [Skill](#) **Build structures, exploring how they can be made stronger, stiffer and more stable.**

[Broad knowledge](#)

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Everyday Materials

1 Programme of study, 1 skills and 1 knowledge statement

Year 1 [Driver subject](#) [Science](#) [Structures](#)



Y1 [Skill](#) **Build structures, exploring how they can be made stronger, stiffer and more stable.**

[Core knowledge](#)

- Different materials can be used for different purposes, depending on their properties.

[Broad knowledge](#)

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

☒ Hide

Shade and Shelter

7 Programmes of study, 8 skills and 10 knowledge statements

Year 1 [Driver subject](#) [Design and technology](#) [Compare and contrast](#) [Evaluation](#) [Everyday products](#) [Generation of ideas](#) [Materials for purpose](#) [Staying safe](#) [Structures](#)



Y1 [Skill](#) **Design purposeful, functional, appealing products for themselves and other users based on design criteria.**

[Core knowledge](#) **2**

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

[Broad knowledge](#)

Design criteria are the explicit goals that a project must achieve.

[Hinterland](#)

A play den is a shelter, usually built outside. It is a temporary structure made from found or readily available materials. It can be used for imaginative play or to provide protection from the weather.

Y1 [Skill](#) **Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.**

[Core knowledge](#) **2**

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

[Broad knowledge](#)

Design criteria are the explicit goals that a project must achieve.

[Hinterland](#)

A play den is a shelter, usually built outside. It is a temporary structure made from found or readily available materials. It can be used for imaginative play or to provide protection from the weather.

Y1 [Skill](#) **Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**

[Broad knowledge](#)

Different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows.

Y1 [Skill](#) **Explore and evaluate a range of existing products.**

[Broad knowledge](#)

☒ Hide

Two products can be compared by looking at a set of criteria and scoring both products against each one.

Skill

Core knowledge

- A shelter is a structure designed to give protection from weather or danger.

Broad knowledge

Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose.

Hinterland

A shelter is a structure designed to give protection from weather or danger. A bus shelter, office block, garage, carport, tent, bird table, shed, conservatory, house, kennel and caravan are all examples of shelters. A shelter can be permanent, like a house or garage, or temporary, like a tent or gazebo.

Y1 **✓ Evaluate their ideas and products against design criteria.**

Skill

Core knowledge

- A strength is something that is good about a piece of work.
- A weakness is an area that could be improved.

Broad knowledge

A strength is a good quality of a piece of work. A weakness is an area that could be improved.

Y1 **✓ Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Broad knowledge

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Hinterland

A structure should have strong, sturdy supports that are joined so that they do not move. The roof and walls should have a covering for protection against the weather, and there should be an entry point.

Y1 **✓ Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.**

Skill

Core knowledge

- Rules are made to keep people safe from danger.
- Safety rules include always listening carefully, following instructions and using equipment only when told to.

Broad knowledge

Rules are made to keep people safe from danger. Safety rules include always listening carefully and following instructions, using equipment only as and when directed, wearing protective clothing if appropriate and washing hands before touching food.

Human Senses

Hide

2 Programmes of study, 2 skills and 2 knowledge statements

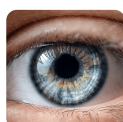
Year 1

Driver subject

Science

Food prep & cooking

Structures



Y1 **✓ Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Core knowledge

- Different materials can be used for different purposes, depending on their properties.

Broad knowledge

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Y1 **✓ Use the basic principles of a healthy and varied diet to prepare dishes.**

Skill

Broad knowledge

Using non-standard measures is a way of measuring that does not involve reading scales. For example, weight may be measured using a balance scale and lumps of plasticine. Length may be measured in the number of handspans or pencils laid end to end.

Funny Faces and Fabulous Features

Hide

2 Programmes of study, 2 skills and 2 knowledge statements

Year 1

Driver subject

Art and design

Cut and join

Decorating textiles



Y1 **✓ Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).**

Skill

Core knowledge

- A running stitch is made by passing a needle in and out of fabric.
- Running stitches are made at equal distances apart.

Broad knowledge

Scissors are used to cut fabrics. Glue and simple stitches, such as running stitch, can be used to join fabrics. Running stitch is made by passing a needle in and out of fabric at an even distance.

- Y1** ✓ **Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**

Skill

Core knowledge

- Decorations can be attached to fabric by gluing, stapling or tying.

Broad knowledge

Fabric can be decorated using materials and small objects, such as buttons and sequins. Decorations can be attached to the fabric by gluing, stapling or tying.

Bright Lights, Big City

1 Programme of study, 1 skills and 1 knowledge statement

Year 1

Driver subject

Geography

Structures



- Y1** ✓ **Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Broad knowledge

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Seasonal Changes

1 Programme of study, 1 skills and 1 knowledge statement

☒ Hide

Year 1

Driver subject

Science

Structures



- Y1** ✓ **Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Core knowledge

- Different materials can be used for different purposes, depending on their properties.

Broad knowledge

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Taxi!

5 Programmes of study, 6 skills and 8 knowledge statements

☒ Hide

Year 1

Driver subject

Design and technology

Compare and contrast

Evaluation

Everyday products

Generation of ideas

Mechanisms & movement



- Y1** ✓ **Design purposeful, functional, appealing products for themselves and other users based on design criteria.**

Skill

Core knowledge

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

Broad knowledge

Design criteria are the explicit goals that a project must achieve.

- Y1** ✓ **Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.**

Skill

Core knowledge

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

Broad knowledge

Design criteria are the explicit goals that a project must achieve.

- Y1** ✓ **Explore and evaluate a range of existing products.**

Skill

Core knowledge

- Two products can be compared by looking at a set of criteria and scoring both products against each one.

Broad knowledge

Two products can be compared by looking at a set of criteria and scoring both products against each one.

Hinterland

Axles and wheels can be attached to chassis in different ways: an axle fixed to a chassis has freely moving wheels, whereas a freely moving axle has fixed wheels.

Skill

Core knowledge

- An axle is a rod that is connected to the centre of a wheel, which allows it to turn.
- A chassis is the frame of a vehicle.

Broad knowledge

Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose.

Hinterland

A wheel is a circular object that is connected to an axle that makes vehicles and machines move. An axle is a rod that is connected to the centre of a wheel, which allows it to turn. A chassis is the frame of a vehicle.

Y1 ▾ Evaluate their ideas and products against design criteria.

Skill

Core knowledge

- A strength is something that is good about a piece of work.
- A weakness is an area that could be improved.

Broad knowledge

A strength is a good quality of a piece of work. A weakness is an area that could be improved.

Y1 ▾ Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.

Skill

Core knowledge 2

- Most vehicles that move on land have axles and wheels that are fixed to a chassis.
- An axle fixed to a chassis has freely moving wheels.
- A freely moving axle has fixed wheels.

Broad knowledge

An axle is a rod or spindle that passes through the centre of a wheel to connect two wheels.

Hinterland

Most vehicles that move on land have axles and wheels that are fixed to a chassis.

School Days

1 Programme of study, 1 skills and 1 knowledge statement

Year 1

Driver subject

History

Structures



Y1 ▾ Build structures, exploring how they can be made stronger, stiffer and more stable.

Skill

Broad knowledge

Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.

Chop, Slice and Mash

7 Programmes of study, 8 skills and 9 knowledge statements

☒ Hide

Year 1

Driver subject

Design and technology

Evaluation

Food prep & cooking

Generation of ideas

Investigation

Nutrition

Origins of food

Staying safe



Y1 ▾ Design purposeful, functional, appealing products for themselves and other users based on design criteria.

Skill

Core knowledge

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

Broad knowledge

Design criteria are the explicit goals that a project must achieve.

Y1 ▾ Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Skill

Core knowledge

- A product or project is usually guided by a set of design criteria.
- The project or product must meet the design criteria to be successful.

Broad knowledge

Design criteria are the explicit goals that a project must achieve.

Y1 ▾ Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).

Skill

Core knowledge

- Some foods need to be prepared before eating.
- Peeling, slicing, chopping, grating, tearing or mashing are different methods of preparing foods.

Broad knowledge

Specific tools are used for particular purposes. For example, scissors are used for cutting and glue is used for sticking.

Hinterland

Knives are used for slicing and chopping, a grater is used for grating, a vegetable peeler is used for peeling and a masher is used for crushing.

Y1 ▾ Evaluate their ideas and products against design criteria.

Skill

Broad knowledge

A strength is a good quality of a piece of work. A weakness is an area that could be improved.

Y1 ▾ Use the basic principles of a healthy and varied diet to prepare dishes.

Skill

Core knowledge

- Fruits and vegetables can be mixed to make a healthy salad.
- Salad dressings can improve the flavour of salads.

Broad knowledge

Using non-standard measures is a way of measuring that does not involve reading scales. For example, weight may be measured using a balance scale and lumps of plasticine. Length may be measured in the number of handspans or pencils laid end to end.

Skill

Core knowledge

- Fruit and vegetables are an important part of a healthy diet.
- It is recommended that people eat at least five portions of fruit and vegetables every day.

Broad knowledge

Fruit and vegetables are an important part of a healthy diet. It is recommended that people eat at least five portions of fruit and vegetables every day.

Hinterland

Fruits and vegetables can be mixed to make a healthy salad. Salad dressings can improve the flavour of salads.

Y1 ▾ Understand where food comes from.

Skill

Core knowledge

- Some foods come from animals, such as meat, fish and dairy products.
- Some come from plants, such as fruit and vegetables.

Broad knowledge

Some foods come from animals, such as meat, fish and dairy products. Other foods come from plants, such as fruit, vegetables, grains, beans and nuts.

Y1 ▾ Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.

Skill

Core knowledge

- Rules are made to keep people safe from danger.
- Safety rules include always listening carefully, following instructions and using equipment only when told to.

Broad knowledge

Rules are made to keep people safe from danger. Safety rules include always listening carefully and following instructions, using equipment only as and when directed, wearing protective clothing if appropriate and washing hands before touching food.

Movers and Shakers

☒ Hide

2 Programmes of study, 2 skills and 2 knowledge statements

Year 2

Driver subject

History

Investigation

Materials for purpose



Y2 ▾ Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).

Skill

Broad knowledge

Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that can cut through thin materials.

Y2 ▾ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Skill

Core knowledge

- Properties of components and materials determine how they can and cannot be used.

Broad knowledge

Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint.

Remarkable Recipes

☒ Hide

8 Programmes of study, 10 skills and 9 knowledge statements

Year 2

Driver subject

Design and technology

Evaluation

Food prep & cooking

Generation of ideas

Investigation

Nutrition

Origins of food

Significant people

Staying safe



Y2 ∨ Design purposeful, functional, appealing products for themselves and other users based on design criteria.

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

Hinterland

School kitchen staff are important people because they provide healthy, nutritious, appealing and balanced meals.

Y2 ∨ Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

Hinterland

School kitchen staff are important people because they provide healthy, nutritious, appealing and balanced meals.

Y2 ∨ Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).

Skill

Core knowledge

- Tools have characteristics that make them suitable for specific purposes. For example, a knife is good for cutting food because it has a sharp metal edge.

Broad knowledge

Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that can cut through thin materials.

Skill

Broad knowledge

Some ingredients need to be prepared before they can be cooked or eaten. There are many ways to prepare ingredients: peeling skins using a vegetable peeler, such as potato skins; grating hard ingredients, such as cheese or chocolate; chopping vegetables, such as onions and peppers and slicing foods, such as bread and apples.

Y2 ∨ Explore and evaluate a range of existing products.

Skill

Core knowledge

- School kitchen staff are important people because they design and provide healthy meals.

Broad knowledge

Many key individuals have helped to shape the world. These include engineers, scientists, designers, inventors and many other people in important roles.

Y2 ∨ Evaluate their ideas and products against design criteria.

Skill

Broad knowledge

Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.

Y2 ∨ Use the basic principles of a healthy and varied diet to prepare dishes.

Skill

Broad knowledge

Some ingredients need to be prepared before they can be cooked or eaten. There are many ways to prepare ingredients: peeling skins using a vegetable peeler, such as potato skins; grating hard ingredients, such as cheese or chocolate; chopping vegetables, such as onions and peppers and slicing foods, such as bread and apples.

Skill

Core knowledge

- A healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables.

Broad knowledge

A healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables.

Y2 ∨ Understand where food comes from.

Skill

Core knowledge

- Food comes from two main sources: animals and plants.
- Milk comes mainly from cows but also from goats and sheep.
- Eggs belong to the animal product category.
- They are laid by female animals. The most common types eaten by humans include chicken and duck eggs.
- Honey is made by bees.
- Most edible oils are made from plant parts.
- Olive oil, vegetable oil and coconut oil are all made from plant sources.
- Sugar is made from plants called sugar cane and sugar beet.
- Plants also give us nuts, such as almonds, walnuts and hazelnuts.

Broad knowledge

Food comes from two main sources: animals and plants. Cows provide beef, sheep provide lamb and mutton and pigs provide pork, ham and bacon. Examples of poultry include chickens, geese and turkeys. Examples of fish include cod, salmon and shellfish. Milk comes mainly from cows but also from goats and sheep. Most eggs come from chickens. Honey is made by bees. Fruit and vegetables come from plants. Oils are made from parts of plants. Sugar is made from plants called sugar cane and sugar beet. Plants also give us nuts, such as almonds, walnuts and hazelnuts.

Y2 ▾ **Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.**

Skill

Core knowledge

- Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills.

Broad knowledge

Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills.

Coastline

Hide

1 Programme of study, 1 skills and 1 knowledge statement

Year 2

Driver subject

Geography

Structures



Y2 ▾ **Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Core knowledge

- Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares.

Broad knowledge

Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.

Beach Hut

Hide

6 Programmes of study, 6 skills and 6 knowledge statements

Year 2

Driver subject

Design and technology

Evaluation

Generation of ideas

Investigation

Materials for purpose

Structures



Y2 ▾ **Design purposeful, functional, appealing products for themselves and other users based on design criteria.**

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

Y2 ▾ **Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.**

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

Y2 ▾ **Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).**

Skill

Broad knowledge

Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that can cut through thin materials.

Hinterland

Tools for working with wood include a junior hacksaw, for cutting; a bench hook, for supporting the wood and as a guide to cut; and a G clamp, for holding the bench hook and wood securely.

Y2 ▾ **Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**

Skill

Core knowledge

- Properties of components and materials determine how they can and cannot be used.

Broad knowledge

Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint.

Y2 ▾ **Evaluate their ideas and products against design criteria.**

Skill

Broad knowledge

Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.

Y2 ▾ **Build structures, exploring how they can be made stronger, stiffer and more stable.**

Skill

Core knowledge

- Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares.

Broad knowledge

Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.

Magnificent Monarchs

☐ Hide

1 Programme of study, 1 skills and 1 knowledge statement

Year 2

Driver subject

History

Materials for purpose



- Y2** **▼ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**

Skill

Core knowledge

- Properties of components and materials determine how they can and cannot be used.

Broad knowledge

Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint.

Cut, Stitch and Join

☐ Hide

6 Programmes of study, 10 skills and 13 knowledge statements

Year 2

Driver subject

Design and technology

Compare and contrast

Cut and join

Decorating textiles

Evaluation

Everyday products

Generation of ideas

Investigation

Materials for purpose

Significant people



- Y2** **▼ Design purposeful, functional, appealing products for themselves and other users based on design criteria.**

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

- Y2** **▼ Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.**

Skill

Broad knowledge

Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.

- Y2** **▼ Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).**

Skill

Broad knowledge

Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that can cut through thin materials.

Hinterland

A sewing pattern is a template of the parts needed to make a garment or product. Pattern pieces are usually made from paper.

Skill

Core knowledge

- A running stitch is a basic stitch used to join two pieces of fabric.

Broad knowledge

A running stitch is a basic stitch that is used to join fabric. It is made by passing a needle in and out of fabric at an even distance.

- Y2** **▼ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**

Skill

Core knowledge

- Properties of components and materials determine how they can and cannot be used.

Broad knowledge

Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint.

Skill

Core knowledge

- Embellishment is a decorative detail or feature added to something to make it more attractive.

Broad knowledge

Embellishment is a decorative detail or feature added to something to make it more attractive.

Y2 ▾ Explore and evaluate a range of existing products.**Skill****Core knowledge**

- A brand is a name, term, design, or symbol identifying a seller's products or services.

Broad knowledge

Products can be compared by looking at particular characteristics of each and deciding which is better suited to the purpose.

Skill**Core knowledge**

- There are many home products made from fabric.
- Examples of fabric based products in the home include cushions, curtains, blinds and carpets.

Broad knowledge

Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.

Hinterland

There are many fabric home products. These include bedding, tea towels, cushions, tea cosies, toiletry bags and other containers.

Skill**Core knowledge**

- The Cath Kidston brand was an important British brand which began in the 1990s.
- It was easily recognisable for its floral patterned fabric and use of classic British iconography including the Red London Bus and London black cab.

Broad knowledge

Many key individuals have helped to shape the world. These include engineers, scientists, designers, inventors and many other people in important roles.

Hinterland

A brand is a name, term, design, or symbol identifying a seller's products or services. Famous brands include Coca Cola, Kellogg's and Apple.

Hinterland

Cath Kidston is an influential British home products brand famous for making textiles, clothing, and furnishings. The Cath Kidston brand is significant as her products are popular worldwide, inspiring modern craftspeople and designers.

Y2 ▾ Evaluate their ideas and products against design criteria.**Skill****Core knowledge**

- A finished product can be checked against design criteria to see how successfully it has been made or to evaluate how well it works.
- Improvements can then be planned.

Broad knowledge

Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.

Push and Pull

☒ Hide

4 Programmes of study, 4 skills and 9 knowledge statements

Year 2

Driver subject

Design and technology

Evaluation

Everyday products

Materials for purpose

Mechanisms & movement

**Y2** ▾ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.**Skill****Core knowledge**

- Properties of components and materials determine how they can and cannot be used.

Broad knowledge

Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint.

Hinterland

Moving mechanisms are made using stiff materials, such as card, plastic or metal, so as not to bend or break when force is applied. Materials should be cut, joined and finished carefully and appropriately to make sure the product works, looks appealing and achieves the design criteria.

Y2 ▾ Explore and evaluate a range of existing products.**Skill****Core knowledge**

- Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.

Broad knowledge

Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.

Y2 ▾ Evaluate their ideas and products against design criteria.**Skill****Core knowledge**

- A finished product can be checked against design criteria to see how successfully it has been made or to evaluate how well it works.
- Improvements can then be planned.

Broad knowledge

Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.

Y2 **Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.**

Skill

Core knowledge

- People build machines to make their work easier.
- A machine is made up of different parts that all work together to perform a task.
- Individual parts of a machine are called components.
- The part of a machine that brings about movement is called the mechanism.

Core knowledge

- A slider mechanism moves in a straight line.
- Real-life examples of slider mechanisms include door bolts and drawers.

Core knowledge

- A lever mechanism is a bar that moves around a fixed point called a pivot.
- Real-life uses of levers include scissors and seesaws.

Core knowledge

- A linkage mechanism combines levers and sliders.
- Real-life uses of linkages include toolboxes and scissor lifts.

Broad knowledge

A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do. Mechanisms include sliders, levers, linkages, gears, pulleys and cams.

Hinterland

People build machines to make their work easier. A machine is made up of different parts that all work together to perform a task. Individual parts of a machine are called components. The part that brings about movement is called the mechanism.

Hinterland

A slider mechanism moves in a straight line. This can be up and down or from side to side. It is made up of a slider and slider support to direct the movement. Real-life examples of slider mechanisms include door bolts and drawers.

Hinterland

A lever mechanism is a bar that moves around a fixed point called a pivot. The amount of movement depends on the position of the pivot. Levers move an object in an arc shape. Real-life uses of levers include scissors and seesaws.

Hinterland

A linkage mechanism combines levers and sliders. It consists of two or more bars joined together by pivots. Fixed pivots attach the linkage mechanism to a fixed base to keep the joint still. Moving pivots join two bars together, but the bars can still move freely. Real-life uses of linkages include toolboxes and scissor lifts.

Cook Well, Eatwell

☒ Hide

8 Programmes of study, 8 skills and 10 knowledge statements

Year 3

Driver subject

Design and technology

Evaluation

Food prep & cooking

Generation of ideas

Nutrition

Origins of food

Significant people

Staying safe



Y3 **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.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

Hinterland

Tacos are a traditional Mexican street food made from wheat or corn tortillas, filled with a meat or vegetarian filling and topped with salsa, lettuce or cheese.

Y3 **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

Hinterland

Tacos are a traditional Mexican street food made from wheat or corn tortillas, filled with a meat or vegetarian filling and topped with salsa, lettuce or cheese.

Y3 **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Broad knowledge

Asking questions can help others to evaluate their products, such as asking them whether the selected materials achieved the purpose of the model.

Y3 **Understand how key events and individuals in design and technology have helped shape the world.**

Skill

Broad knowledge

Key inventions in design and technology have changed the way people live.

Y3 **Understand and apply the principles of a healthy and varied diet.**

Skill

Core knowledge

- There are five main food groups: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads).
- Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet.

Broad knowledge

There are five main food groups that should be eaten regularly as part of a balanced diet: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet.

Y3 **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.**

Skill

Core knowledge

- Preparation techniques for savoury dishes include peeling, chopping, deseeding, slicing, dicing, grating, mixing and skinning.

Broad knowledge

Preparation techniques for savoury dishes include peeling, chopping, deseeding, slicing, dicing, grating, mixing and skinning.

Hinterland

Slow cookers cook food on a low heat over several hours.

Hinterland

Ratatouille is a vegetarian dish made from onions, aubergines, courgettes, peppers and tomatoes.

Y3 **Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

Skill

Broad knowledge

The types of food that will grow in a particular area depend on a range of factors, such as the rainfall, climate and soil type. For example, many crops, such as potatoes and sugar beet, are grown in the south-east of England. Wheat, barley and vegetables grow well in the east of England.

Y3 **Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.**

Skill

Core knowledge

- Safety rules must be followed when using electricity. Fingers and other objects must not be put into electrical outlets, anything with a cord or plug should never be used around water and a plug should never be pulled out by its cord.

Broad knowledge

Electrical appliances must only be used under the supervision of an adult. Safety rules must also be followed when using electricity: fingers and other objects must not be put into electrical outlets, anything with a cord or plug should never be used around water and a plug should never be pulled out by its cord.

Making It Move

 Hide

7 Programmes of study, 7 skills and 9 knowledge statements

Year 3 **Driver subject** **Design and technology** **Evaluation** **Everyday products** **Generation of ideas** **Investigation** **Materials for purpose** **Mechanisms & movement**



Y3 **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.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

Hinterland

Automata are machines that seem to move on their own and are intended to intrigue and delight an audience.

Y3 **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.

- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

Hinterland

Automata are machines that seem to move on their own and are intended to intrigue and delight an audience.

Y3 ✓ **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Broad knowledge

Specific tools can be used for cutting, such as saws. Wood can be joined using glue, nails, staples, or a combination of these. Safety rules must be followed to prevent injury from sharp blades. These rules include using a bench hook to keep the wood still, using a junior hacksaw with a pistol grip and working under adult supervision.

Y3 ✓ **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.**

Skill

Core knowledge

- Materials for a specific task must be selected on the basis of their properties. For example greenhouses need transparent or translucent materials. Availability and cost have also got to be considered.

Broad knowledge

Materials for a specific task must be selected on the basis of their properties. These include physical properties as well as availability and cost.

Y3 ✓ **Investigate and analyse a range of existing products.**

Skill

Broad knowledge

Particular products have been designed for specific tasks, such as nail clippers, the spinning top and the cool box.

Y3 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Asking questions can help others to evaluate their products. For example, asking someone whether the materials selected helped achieve the purpose of the model.

Broad knowledge

Asking questions can help others to evaluate their products, such as asking them whether the selected materials achieved the purpose of the model.

Y3 ✓ **Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).**

Skill

Core knowledge 2

- Cams are devices that can convert circular motion into up-and-down motion.

Core knowledge

- The cam is fixed to the axle and the follower sits on the cam. When the axle is rotated, the follower moves up and down, following the shape of the cam.
- Different shaped cams produce different patterns of movement in the follower.

Broad knowledge

Levers consist of a rigid bar that rotates around a fixed point, called a fulcrum. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down, and are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up-and-down motion.

Hinterland

Cam mechanisms consist of an axle, a cam and a follower. The cam is fixed to the axle and the follower sits on the cam. When the axle is rotated, the follower moves up and down, following the shape of the cam. Cams are used in many machines. In engines, cams open and close valves. They can also be used to make carousel horses move up and down.

Hinterland

Different shaped cams produce different patterns of movement in the follower. A pear cam makes the follower stationary for half a turn, then it gently rises and falls. It is used for carousel horses. An off-centre circular cam produces a smooth, continuous up and down movement. It is used for steam engine pistons. A heart cam makes a jerky, irregular up and down movement. A snail cam makes the follower stationary for half a turn, then gently rise and quickly fall.

Beautiful Botanicals

2 Programmes of study, 2 skills and 2 knowledge statements

 Hide

Year 3 **Driver subject** **Art and design** **Cut and join** **Decorating textiles**



Y3 ✓ **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Core knowledge

- Weaving involves interlacing pieces of thread or yarn or other materials.

Broad knowledge

A loom is a piece of equipment that is used for making fabric by weaving wool or thread. Weaving involves interlacing pieces of thread or yarn.

- Y3** ✓ **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.**

Skill

Broad knowledge

A loom weaving is a piece of fabric that has been woven on a loom by interlacing threads. An embellishment is a decorative detail or feature, such as a silk flower, tassel or bow, added to something to make it more attractive.

Greenhouse

Hide

8 Programmes of study, 8 skills and 12 knowledge statements

Year 3 Driver subject Design and technology Compare and contrast Evaluation Everyday products Generation of ideas Investigation Materials for purpose Structures



- Y3** ✓ **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.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

- Y3** ✓ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Design criteria are the exact goals a project must achieve to be successful.
- These criteria might include the product's use, appearance, cost and target user.

Broad knowledge

Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.

- Y3** ✓ **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Broad knowledge

Specific tools can be used for cutting, such as saws. Wood can be joined using glue, nails, staples, or a combination of these. Safety rules must be followed to prevent injury from sharp blades. These rules include using a bench hook to keep the wood still, using a junior hacksaw with a pistol grip and working under adult supervision.

Hinterland

A hot glue gun can join materials, including wood, some plastics, metal, fabric and paper. The advantages of a hot glue gun are that it allows glue to go onto a surface smoothly, the user can direct the glue to exactly where it is needed, and the glue hardens quickly. Safety rules must be followed to prevent burns.

- Y3** ✓ **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.**

Skill

Core knowledge

- Materials for a specific task must be selected on the basis of their properties. For example greenhouses need transparent or translucent materials. Availability and cost have also got to be considered.

Broad knowledge

Materials for a specific task must be selected on the basis of their properties. These include physical properties as well as availability and cost.

Hinterland

Materials, such as glass and plastic are suitable for making greenhouse roofs and walls because they are transparent, waterproof and hardwearing.

- Y3** ✓ **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- Particular products are designed for specific tasks. For example designing a product to help grow plants will require certain materials.

Broad knowledge

Particular products have been designed for specific tasks, such as nail clippers, the spinning top and the cool box.

Hinterland

A greenhouse is a building where plants can grow in a warm and protected environment. Greenhouses let light in through transparent or translucent walls and roofs. Windows, vents or fans provide ventilation.

Y3 ∨ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Asking questions can help others to evaluate their products. For example, asking someone whether the materials selected helped achieve the purpose of the model.

Broad knowledge

Asking questions can help others to evaluate their products, such as asking them whether the selected materials achieved the purpose of the model.

Y3 ∨ **Understand how key events and individuals in design and technology have helped shape the world.**

Skill

Core knowledge

- Work from different designers can be compared by assessing specific criteria, such as their visual impact, fitness for purpose and target market.

Broad knowledge

Work from different designers can be compared by assessing specific criteria, such as their visual impact, fitness for purpose and target market.

Hinterland

There are similarities and differences between the Great Conservatory of Chatsworth House and the Eden Project biomes. Both greenhouses were built to house tropical plants and have a frame structure. However, the frameworks are made of different materials and the greenhouses are heated in different ways.

Y3 ∨ **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

Skill

Core knowledge

- Diagonal struts create triangular shapes within a frame structure.
- Adding diagonal struts to a frame structure adds strength and stability.

Broad knowledge

Shell structures are hollow, 3-D structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components, such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure.

Hinterland

Diagonal struts create triangular shapes within a frame structure. Adding diagonal struts adds strength and stability.

Fresh Food, Good Food

☒ Hide

11 Programmes of study, 11 skills and 14 knowledge statements

Year 4 **Driver subject** **Design and technology** **Evaluation** **Everyday products** **Food prep & cooking** **Generation of ideas** **Materials for purpose** **Nutrition**
Origins of food **Significant people** **Staying safe** **Structures**



Y4 ∨ **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.**

Skill

Core knowledge

- Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ∨ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ∨ **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.**

Skill

Broad knowledge

Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

Y4 ∨ **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- Design features are the aspects of a product's design that the designer would like to emphasise. For example, the use of a particular material or a feature that makes the product durable.

Broad knowledge

Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

Y4 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made.
- The evaluation process can include suggesting improvements and explaining why they should be made.

Broad knowledge

Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

Y4 ✓ **Understand how key events and individuals in design and technology have helped shape the world.**

Skill

Core knowledge

- Food deteriorates due to the growth of microorganisms.
- Significant scientists such as Louis Pasteur and inventors such as Nicolas Appert have ensured decay can be prevented or delayed by preservation methods, such as drying, salting, pickling, canning, pasteurising, refrigerating or freezing the food.
- The 'use by' date shows when the food is no longer safe to eat.
- The 'best before' date shows the date after which the food will lose some flavour or texture.

Broad knowledge

Significant designers and inventors can shape the world.

Hinterland

Food deteriorates due to the growth of microorganisms. Decay can be prevented or delayed by preservation methods, such as drying, salting, pickling, canning, pasteurising, refrigerating or freezing the food.

Hinterland

Food packaging plays an important role in keeping foods fresh. The 'use by' date shows when the food is no longer safe to eat. The 'best before' date shows the date after which the food will lose some flavour or texture.

Y4 ✓ **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

Skill

Core knowledge

- A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials.

Broad knowledge

A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).

Hinterland

Most cardboard packaging is produced from a net. Packages can be strengthened by using thicker cardboard or multiple layers.

Y4 ✓ **Understand and apply the principles of a healthy and varied diet.**

Skill

Core knowledge

- Foods need packaging to keep them fresh, safe to eat and free from damage.
- Food packaging also provides nutritional information about the food inside.

Broad knowledge

Healthy snacks include fresh or dried fruit and vegetables, nuts and seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.

Hinterland

Foods need packaging to keep them fresh, safe to eat and free from damage. Food packaging also provides nutritional information about the food inside, 'use by' and 'best before' dates, and the materials and recyclability of the packaging.

Y4 ✓ **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.**

Skill

Core knowledge

- Cooking techniques include baking, boiling, frying, grilling and roasting.

Broad knowledge

Cooking techniques include baking, boiling, frying, grilling and roasting.

Y4 ✓ **Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

Skill

Core knowledge

- Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.

Broad knowledge

Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.

Y4 ✓ **Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.**

Skill

Core knowledge

- Chemicals are used in the home every day. They include cleaning products, such as bleach and disinfectant, but also paints, glues, oils, pesticides and medicines.
- Chemicals should only be used under adult supervision.

Broad knowledge

Chemicals are used in the home every day. They include cleaning products, such as bleach and disinfectant, but also paints, glues, oils, pesticides and medicines. Most chemical products carry a hazard symbol showing in what way the chemical could be harmful. Chemicals should only be used under adult supervision. Appropriate safety precautions, such as wearing goggles and gloves, working in a well-ventilated room, wiping up spills and tying back long hair, should be taken.

Warp and Weft

☒ Hide

1 Programme of study, 1 skills and 2 knowledge statements

Year 4

Driver subject

Art and design

Materials for purpose



Y4 ✓ **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.**

Skill

Core knowledge

- Visual qualities of a yarn can include its colour, elasticity, pattern and texture.

Broad knowledge

Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

Hinterland

Visual elements of yarn include the colour, appearance, shape, texture, elasticity and type.

Misty Mountain, Winding River

☒ Hide

2 Programmes of study, 2 skills and 2 knowledge statements

Year 4

Driver subject

Geography

Everyday products

Materials for purpose



Y4 ✓ **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.**

Skill

Core knowledge

- Characteristics of materials, such as rigidity, strength and smoothness will affect the success of a working model.

Broad knowledge

Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

Y4 ✓ **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- Design features are the aspects of a product's design that the designer would like to emphasise. For example, the use of a particular material or a feature that makes the product durable.

Broad knowledge

Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

Functional and Fancy Fabrics

☒ Hide

7 Programmes of study, 10 skills and 14 knowledge statements

Year 4

Driver subject

Design and technology

Compare and contrast

Cut and join

Decorating textiles

Evaluation

Everyday products

Generation of ideas

Investigation

Materials for purpose

Significant people



Y4 ∨ **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.**

Skill

Core knowledge

- Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Hinterland

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ∨ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Hinterland

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ∨ **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Broad knowledge

Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult supervision and safety rules must be followed.

Hinterland

Joining tools to use with fabric include needles, pins and clips, cutting tools include a variety of scissors such as pinking shears, finishing tools include an iron and ironing board.

Skill

Core knowledge

- A hem runs along the edge of a piece of cloth or clothing. It is made by turning under a raw edge and sewing to give a neat and quality finish.

Broad knowledge

A hem runs along the edge of a piece of cloth or clothing. It is made by turning under a raw edge and sewing to give a neat and quality finish.

Y4 ∨ **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.**

Skill

Core knowledge

- Fabrics can be natural or synthetic.
- Natural fabrics include cotton, silk and wool.
- Synthetic fabrics include Lycra, polyester and nylon.

Broad knowledge

Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

Hinterland

Fabrics can be natural or synthetic. Natural fabrics include cotton, silk and wool. Synthetic fabrics include Lycra, polyester and nylon.

Skill

Core knowledge

- Block printing and fabric paint are used to create decorative, repeated patterns on fabrics.

Broad knowledge

Block printing techniques and fabric paint are used to create decorative, repeated patterns on fabrics.

Y4 ∨ **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- A comparison table is an organised way to compare products.

Broad knowledge

A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.

Skill

Core knowledge

- Design features are the aspects of a product's design that the designer would like to emphasise. For example, the use of a particular material or a feature that makes the product durable.

Broad knowledge

Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

Hinterland

Design features include purpose and function, appearance, quality, material, size, colour, pattern, embellishment, durability and usability.

Y4 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made.
- The evaluation process can include suggesting improvements and explaining why they should be made.

Broad knowledge

Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

Y4 ✓ **Understand how key events and individuals in design and technology have helped shape the world.**

Skill

Core knowledge 2

- William Morris was a British textile designer, artist and socialist activist associated with the British Arts and Crafts Movement.
- William Morris was a significant contributor to the revival of traditional British textile arts and methods of production.
- William Morris' motifs consisted mainly of leaves, flowers, fruits and birds.

Broad knowledge

Significant designers and inventors can shape the world.

Hinterland

William Morris was a British textile designer, artist and socialist activist associated with the British Arts and Crafts Movement. He was a significant contributor to the revival of traditional British textile arts and methods of production.

Electrical Circuits and Conductors

☒ Hide

6 Programmes of study, 7 skills and 9 knowledge statements

Year 4

Driver subject

Science

Compare and contrast

Electricity

Evaluation

Everyday products

Generation of ideas

Use of ICT



Y4 ✓ **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.**

Skill

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ✓ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Broad knowledge

Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.

Y4 ✓ **Investigate and analyse a range of existing products.**

Skill

Broad knowledge

A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.

Skill

Core knowledge

- A switch makes or breaks a circuit.
- When a switch is closed or 'on', the circuit is complete.
- When a switch is open or 'off', the circuit is incomplete.

Core knowledge

- A programmable device is a machine that is provided with coded instructions for the automatic performance of a task.

Broad knowledge

Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

Hinterland

A switch makes or breaks a circuit. When a switch is closed or 'on', the circuit is complete. When a switch is open or 'off', the circuit is incomplete.

Hinterland

A programmable device is a machine that is able to be provided with coded instructions for the automatic performance of a task.

Hinterland

A nightlight is a small electric light that gives out a dim glow. Design features of nightlights include a switch, light source and an attractive casing.

Y4 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Broad knowledge

Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

Y4 ✓ **Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors).**

Skill

Broad knowledge

Components can be added to circuits to achieve a particular goal. These include bulbs for lighthouses and torches, buzzers for burglar alarms and electronic games, motors for fairground rides and motorised vehicles and switches for lights and televisions.

Y4 ✓ **Apply their understanding of computing to program, monitor and control their products.**

Skill

Core knowledge

- Remote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device.

Broad knowledge

Remote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device, such as a light, speaker or buzzer.

Tomb Builders

☒ Hide

3 Programmes of study, 3 skills and 7 knowledge statements

Year 4

Driver subject

Design and technology

Evaluation

Materials for purpose

Mechanisms & movement



Y4 ✓ **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.**

Skill

Core knowledge

- Characteristics of materials, such as rigidity, strength and smoothness will affect the success of a working model.

Broad knowledge

Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.

Hinterland

Characteristics of materials, such as rigidity, strength and smoothness will affect the success of a working model.

Y4 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made.
- The evaluation process can include suggesting improvements and explaining why they should be made.

Broad knowledge

Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

Y4 ✓ **Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).**

Skill

Core knowledge 3

- Simple machines make physical jobs easier by changing the strength or direction of a force.
- There are six simple machines: pulley, lever, wheel and axle, wedge, inclined plane and screw.
- Simple machines can be combined to make complex, compound machines. For example, a wheelbarrow combines a lever with a wheel and axle.

Broad knowledge

Mechanisms can be used to add functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets; linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems and cams in 3-D moving toys or pictures.

Hinterland

Simple machines make physical jobs easier by changing the strength or direction of a force. There are six simple machines: pulley; lever; wheel and axle; wedge; inclined plane; and screw. Simple machines can be combined to make complex, compound machines.

Hinterland

Simple machines make physical jobs easier by changing the strength or direction of a force.

Hinterland

Simple machines including pulleys, levers, wheels and axles and inclined planes can be combined to make a machine that can move heavy objects.

Moving Mechanisms

 Hide

6 Programmes of study, 7 skills and 12 knowledge statements

Year 5

Driver subject

Design and technology

Compare and contrast

Evaluation

Investigation

Materials for purpose

Mechanisms & movement

Staying safe

Structures



Y5  **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Broad knowledge

There are many rules for using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting edge pointing away from their body. All tools should be cleaned and put away after use, and should not be used if they are loose or cracked.

Y5  **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.**

Skill

Broad knowledge

Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques.

Y5  **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Evaluations can be made by asking product users a selection of questions to obtain data on how the product has met its design criteria.

Broad knowledge

A focus group is a small group of people whose reactions and opinions about a product are taken and studied. Evaluations can be made by asking product users a selection of questions to obtain data on how the product has met its design criteria.

Skill

Core knowledge 2

- Testing a product against the design criteria will highlight anything that needs improvement or redesign.

Broad knowledge

Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.

Hinterland

Design is an iterative process, meaning that once an initial prototype has been designed it is continually tested and improved until the final product is deployed.

Y5  **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

Skill

Core knowledge

- Mechanisms and systems can work together to perform a function.
- A strong and stable structure is necessary to support mechanisms in a machine.

Broad knowledge

Various methods can be used to support a framework. These include cross braces, guy ropes and diagonal struts. Frameworks can be built using lolly sticks, skewers and bamboo canes.

Hinterland

Different mechanisms and systems can work together to perform a function. A strong and stable structure is necessary to support different mechanisms in a machine.

Y5  **Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).**

Skill

Core knowledge 2

- A pneumatic system uses compressed air to exert a force.

Core knowledge

- Pneumatic systems can be used to lift heavy loads, raise and lower platforms or soften a force by acting as a shock absorber.

Broad knowledge

Pneumatic systems use energy that is stored in compressed air to do work, such as inflating a balloon to open a model monster's mouth. These effects can be achieved using syringes and plastic tubing.

Hinterland

Pneumatic systems can be used to lift heavy loads, raise and lower platforms or soften a force by acting as a shock absorber.

Hinterland

A pneumatic system uses air to exert a force. This force is used in pneumatic jacks to lift vehicles, in paint sprayers to force paint out at high speed, in jackhammers to break up pavements and in train and bus brakes.

Hinterland

Pneumatic systems are low maintenance, compact and safe as only air can leak from the system.

YS **✓ Critique, evaluate and test their ideas and products and the work of others.**

Skill

Broad knowledge

Safety features are often incorporated into products that might cause harm. Some examples include the child-safety caps on medicine bottles, seatbelts in cars, covers for electrical sockets and finger guards on doors.

Sow, Grow and Farm

☒ Hide

1 Programme of study, 1 skills and 1 knowledge statement

Year 5

Driver subject

Geography

Origins of food



YS **✓ Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

Skill

Core knowledge

- Buying seasonal food is beneficial for many reasons. These include the food having higher nutritional value, reducing transportation and supporting local growers.

Broad knowledge

Seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes better; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper.

Eat the Seasons

☒ Hide

3 Programmes of study, 3 skills and 7 knowledge statements

Year 5

Driver subject

Design and technology

Food prep & cooking

Nutrition

Origins of food



YS **✓ Understand and apply the principles of a healthy and varied diet.**

Skill

Core knowledge

- A balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions.

Broad knowledge

A balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions.

YS **✓ Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.**

Skill

Core knowledge 2

- Sweet dishes are usually desserts, such as cakes, fruit pies and trifles.
- Savoury dishes usually have a salty or spicy flavour rather than a sweet one.

Broad knowledge

Sweet dishes are usually desserts, such as cakes, fruit pies and trifles. Savoury dishes usually have a salty or spicy flavour rather than a sweet one.

Hinterland

Food hygiene is important to prevent the spread of disease-causing microorganisms.

Hinterland

Foods can be prepared and cooked in different ways to achieve different results.

YS **✓ Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

Skill

Core knowledge

- Seasonality is the time of year when the harvest or flavour of a type of food is at its best.

Broad knowledge

Seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes better; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper.

Hinterland

Food hygiene is important to prevent the spread of disease-causing microorganisms.

Hinterland

Foods can be prepared and cooked in different ways to achieve different results.

Mixed Media

 Hide

2 Programmes of study, 2 skills and 2 knowledge statements

Year 5 Driver subject Art and design Cut and join Decorating textiles



Y5  **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Core knowledge

- Applique is a technique where pieces of material are attached to another material by stitching or gluing.

Broad knowledge

Applique is a technique where pieces of material are attached to another material by stitching or gluing.

Y5  **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.**

Skill

Core knowledge

- A collage is artwork made by sticking materials, such as scraps of paper or fabric, onto a background.

Broad knowledge

A collage is artwork made by sticking materials, such as scraps of paper or fabric, onto a background. A mixed media collage is made using various materials and media, such as ink and paint.

Architecture

 Hide

7 Programmes of study, 7 skills and 9 knowledge statements

Year 5 Driver subject Design and technology Evaluation Everyday products Generation of ideas Materials for purpose Significant people Structures



Y5  **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.**

Skill

Core knowledge

- Computer-aided design (CAD) is the use of specialised computer software to design objects.
- CAD designs can also be made into objects using 3-D printers.

Broad knowledge

A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.

Hinterland

Computer-aided design (CAD) is the use of specialised computer software to design objects. CAD can help designers to create better quality, clearer designs and make changes easily. CAD designs can also be made into objects using 3-D printers.

Y5  **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Core knowledge

- Computer-aided design (CAD) is the use of specialised computer software to design objects.
- CAD designs can also be made into objects using 3-D printers.

Broad knowledge

A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.

Hinterland

Computer-aided design (CAD) is the use of specialised computer software to design objects. CAD can help designers to create better quality, clearer designs and make changes easily. CAD designs can also be made into objects using 3-D printers.

Y5  **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.**

Skill

Broad knowledge

Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques.

Y5  **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- The design of products needs to take into account the culture of the target audience.

Core knowledge

- The ancient Greeks developed the Classical form of architecture that has been copied for thousands of years.

Broad knowledge

Culture is the language, inventions, ideas and art of a group of people. A society is all the people in a community or group. Culture affects the design of some products. For example, knives and forks are used in the western world, whereas chopsticks are used mainly in China and Japan. The design of products needs to take into account the culture of the target audience. For example, colours might mean very different things in different cultures.

Hinterland

The ancient Greeks developed the Classical form of architecture. They used columns to support roofs, which had three main orders; Doric, Ionic and Corinthian. Ancient Greek buildings were symmetrical and beautiful. Roofs had a triangular shaped part, called the pediment, and a wide horizontal part, usually decorated with a frieze, called the entablature. Greek buildings were usually made from limestone or marble.

- Y5** ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- Testing a product against the design criteria will highlight anything that needs improvement or redesign.

Broad knowledge

Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.

- Y5** ✓ **Understand how key events and individuals in design and technology have helped shape the world.**

Skill

Core knowledge

- A Roman architect called Vitruvius said that successful buildings should have firmitas (stability), utilitas (useful space) and venustas (an attractive appearance).

Broad knowledge

Many new designs and inventions influenced society. For example, labour-saving devices in the home reduced the amount of housework, which was traditionally done by women. This enabled them to have jobs.

- Y5** ✓ **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

Skill

Core knowledge

- Support, stiffness and stability can be created by using triangular shapes to create strong frameworks, columns to support roofs and overlapping brickwork patterns.

Broad knowledge

Various methods can be used to support a framework. These include cross braces, guy ropes and diagonal struts.

Frameworks can be built using lolly sticks, skewers and bamboo canes.

Hinterland

Support, stiffness and stability can be created by using triangular shapes to create strong frameworks, columns to support roofs and overlapping brickwork patterns.

Food for Life

Hide

5 Programmes of study, 6 skills and 12 knowledge statements

Year 6

Driver subject

Design and technology

Compare and contrast

Evaluation

Everyday products

Food prep & cooking

Nutrition

Origins of food



- Y6** ✓ **Investigate and analyse a range of existing products.**

Skill

Broad knowledge

Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.

Hinterland

Sliced bread is processed. It can contain many more ingredients than homemade bread, including preservatives and artificial ingredients.

Hinterland

Yeast is a leavening agent that makes bread rise. Kneading is a technique used to make bread dough. Proving means to leave bread dough, which contains yeast, to rise.

Skill

Core knowledge

- Sliced bread is processed. It can contain many more ingredients than homemade bread, including preservatives and artificial ingredients.

Core knowledge

- A processed food is changed during preparation and includes processes, such as cooking, freezing, pasteurising, or the addition of ingredients.
- Processed foods can be convenient and increase availability, but often lack of nutrients and contain unhealthy ingredients when compared to whole foods.

Broad knowledge

People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids.

Hinterland

A processed food is changed during preparation and includes processes, such as cooking, freezing, pasteurising, or the addition of ingredients. Pros of processed foods include convenience and availability. Cons include a lack of nutrients and unhealthy ingredients.

Hinterland

There are different categories of processed foods. Ultra-processed foods have been through significant changes, have added ingredients and often a low nutritional value.

Y6 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- An iterative process starts with requirements and continues by creating a product, testing it, and revising it before creating a better version.
- The iterative process is a series of steps that are repeated, improving the product with each cycle.

Broad knowledge

Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.

Y6 ✓ **Understand and apply the principles of a healthy and varied diet.**

Skill

Core knowledge

- Eating a balanced diet is a positive lifestyle choice that should be sustained over time.
- Food packaging provides important nutritional information about the food inside.

Broad knowledge

Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet.

Y6 ✓ **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.**

Skill

Core knowledge 3

- Ingredients can usually be bought at supermarkets, but specialist shops may stock different items such as specialist vegetables or coffees.
- Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual prepared foods, as well as cold meats and cheeses.

Broad knowledge

Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual prepared foods, as well as cold meats and cheeses.

Hinterland

A recipe provides information to prepare a dish, including ingredients, quantities and a method. They may also contain nutritional information.

Hinterland

Techniques include preparation techniques, such as chopping, slicing, dicing, kneading and mashing, and cooking techniques, such as boiling, roasting, frying and baking.

Y6 ✓ **Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

Skill

Core knowledge

- Whole foods have not been changed from their natural form.
- Organic whole foods are grown without the use of man-made fertilisers, pesticides, growth regulators or animal feed additives.

Broad knowledge

Organic produce is food that has been grown without the use of human-made fertilisers, pesticides, growth regulators or animal feed additives. Organic farmers use crop rotation, animal and plant manures, hand-weeding and biological pest control.

Electrical Circuits and Components

 Hide

6 Programmes of study, 7 skills and 7 knowledge statements

Year 6

Driver subject

Science

Electricity

Evaluation

Generation of ideas

Staying safe

Use of ICT



Y6 ✓ **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.**

Skill

Broad knowledge

Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Y6 ▾ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill

Broad knowledge

Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Y6 ▾ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill

Core knowledge

- An iterative process starts with requirements and continues by creating a product, testing it, and revising it before creating a better version.
- The iterative process is a series of steps that are repeated, improving the product with each cycle.

Broad knowledge

Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.

Y6 ▾ **Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors).**

Skill

Broad knowledge

Computer programs can control electrical circuits that include a variety of components, such as switches, lamps, buzzers and motors.

Y6 ▾ **Apply their understanding of computing to program, monitor and control their products.**

Skill

Core knowledge

- Many devices that we see in our homes and elsewhere use programmable sensors that monitor environmental variables, such as light, sound, movement and temperature.

Broad knowledge

Computer monitoring uses sensors as a scientific tool to record information about environmental changes over time.

Computer monitoring can also log data from sensors and record the resulting information in a table or graph.

Hinterland

Many devices that we see in our homes and elsewhere use programmable sensors that monitor environmental variables, such as light, sound, movement and temperature.

Hinterland

Micro:bit can be programmed to switch on an LED in a circuit when light level falls below a certain value.

Skill

Broad knowledge

Computer programs can control electrical circuits that include a variety of components, such as switches, lamps, buzzers and motors.

Y6 ▾ **Critique, evaluate and test their ideas and products and the work of others.**

Skill

Core knowledge

- The safety of the user has to be taken into account when designing a new product.

Broad knowledge

The safety of the user has to be taken into account when designing a new product. Methods to help keep users safe include providing clear instructions for use; clear indication of the age range for which it is designed; safety features (such as child-resistant packaging); warning symbols and electrical safety checks.

Engineer

 Hide

7 Programmes of study, 8 skills and 11 knowledge statements

Year 6 **Driver subject** **Design and technology** **Compare and contrast** **Evaluation** **Everyday products** **Generation of ideas** **Materials for purpose** **Significant people**

Structures



Y6 ▾ **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.**

Skill

Core knowledge

- Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Broad knowledge

Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Y6 ▾ **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Skill**Core knowledge**

- Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Broad knowledge

Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Y6 ✓ **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.**

Skill**Core knowledge**

- It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.

Broad knowledge

It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.

Y6 ✓ **Investigate and analyse a range of existing products.**

Skill**Broad knowledge**

Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.

Hinterland

The four main bridge types are the beam bridge, arch bridge, truss bridge and suspension bridge. They each spread forces in different ways to remain strong and stable.

Skill**Core knowledge**

- Bridge structures have changed over time. This is due to factors such as technology, design innovation and new and better access to materials.

Broad knowledge

People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids.

Hinterland

Bridges provide a safe route over obstacles, including roads and rivers. They are used by pedestrians, cars, trains and pipelines.

Hinterland

Bridge structures have changed over time with innovations in design and materials. Significant bridges include the Menai Bridge, Clifton Suspension Bridge and Forth Bridge.

Y6 ✓ **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**

Skill**Core knowledge**

- An iterative process starts with requirements and continues by creating a product, testing it, and revising it before creating a better version.
- The iterative process is a series of steps that are repeated, improving the product with each cycle.

Broad knowledge

Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.

Y6 ✓ **Understand how key events and individuals in design and technology have helped shape the world.**

Skill**Core knowledge**

- Significant engineers have improved, safety, people's lives and trade through their constructions.
- Significant bridges include: the Menai Bridge, Clifton Suspension Bridge and Forth Bridge.

Broad knowledge

The significance of a designer or inventor can be measured in various ways. Their work may benefit society in health, transport, communication, education, the built environment or technology. It may enhance culture in different areas, such as fashion, ceramics or computer games.

Y6 ✓ **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

Skill**Core knowledge**

- Strength can be added to a framework by using multiple layers or changing its shape.

Core knowledge

- Triangles do not collapse or distort easily and so are used in architecture to provide support and stability.

Broad knowledge

Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthened by adding an outer cover.

Hinterland

Triangles are a strong shape used by engineers to add strength to a structure. When a force is applied to a triangle, it is distributed down each side, making triangles difficult to distort or collapse.

Make Do and Mend

 Hide

3 Programmes of study, 6 skills and 10 knowledge statements

Year 6

Driver subject

Design and technology

Compare and contrast

Cut and join

Decorating textiles

Everyday products

Investigation

Materials for purpose



Y6 ▼ **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**

Skill

Core knowledge

- Deconstructing garments identifies how they were made, the materials used and their properties.

Core knowledge

- Hand stitches include running stitch, blanket stitch and whip stitch.

Broad knowledge

Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit together correctly.

Hinterland

Deconstructing garments identifies how they were made, the materials used and their properties.

Hinterland

Hand stitches include running stitch, blanket stitch and whip stitch.

Skill

Broad knowledge

Pinning with dressmaker pins and tacking with quick, temporary stitches holds fabric together in preparation for and during sewing.

Y6 ▼ **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.**

Skill

Core knowledge

- It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.

Broad knowledge

It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.

Skill

Broad knowledge

Fastenings hold a piece of clothing together. Types of fastenings include zips, press studs, Velcro and buttons.

Y6 ▼ **Investigate and analyse a range of existing products.**

Skill

Core knowledge

- Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.

Broad knowledge

Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.

Skill

Core knowledge

- Make Do and Mend was a campaign run by the Ministry of Information during the Second World War to encourage people to recycle and repurpose their old clothes rather than buy new.
- The Make Do and Mend campaigns aimed to limit the amount of labour and materials used in clothes production, so that it could be used to support the greater war effort.

Broad knowledge

People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids.

Hinterland

In 1941, the British government introduced clothes rationing. This was to limit the amount of labour and materials used in clothes production, so that it could be used to support the greater war effort.

Hinterland

Make Do and Mend was a campaign run by the Ministry of Information to encourage people to recycle and repurpose their old clothes rather than buy new.