



SHERINGDALE

**Design Technology
Medium Term Planning
2024-2025**

'High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.' National Curriculum

For each unit:

Unit overview for most structures, systems and textiles units:



- ➔ Work to be completed in the front of the child's sketchbook. There should be a title page for each unit.
- ➔ First lesson to be an *explore lesson* where children are introduced to a designer, as well as products that support the learning of the unit. Key components of the product are highlighted by the teacher. Children are invited to explore these products and produce notes about how they work. Checks should be made on prior knowledge within this lesson and taught before making the product if not known.
- ➔ *Focus task lessons* are used to directly teach substantive and disciplinary knowledge in a practical way, using technically accurate explanations.
- ➔ In the plan and generate lessons, a problem and design brief are introduced using the format below. Children plan with increasing detail before making their product. Use of tools and techniques, including safety expectations, should also be taught in these lessons, usually at the start.
 - Problem: why are we making this product?
 - Design brief: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).
- ➔ Evaluate lessons should have:
 - Image of finished product in books
 - Star diagram completed
 - Explanation of thoughts
 - Explanation of how to improve
- ➔ Look at the Prior knowledge at the start of each unit to know what knowledge to recap.
- ➔ There should be challenge for each lesson.
- ➔ Cooking and Nutrition lessons do not have a set format. The focus should be on cooking.

DT in the EYFS

The most relevant statements for DT are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

Three and Four-Year-Olds	Personal, Social and Emotional Development	<ul style="list-style-type: none"> • Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Physical Development	<ul style="list-style-type: none"> • Use large-muscle movements to wave flags and streamers, paint and make marks. • Choose the right resources to carry out their own plan. • Use one-handed tools and equipment, for example, making snips in paper with scissors.
	Understanding the World	<ul style="list-style-type: none"> • Explore how things work.
	Expressive Arts and Design	<ul style="list-style-type: none"> • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects.

Reception	Physical Development	<ul style="list-style-type: none"> • Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. 	
	Expressive Arts and Design	<ul style="list-style-type: none"> • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills. 	
ELG	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"> • Use a range of small tools, including scissors, paintbrushes and cutlery.

	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used.
	Managing self	Healthy food choices	<ul style="list-style-type: none"> • Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices.

Year 1

Autumn

Making a fruit salad

Cooking and Nutrition

Prior knowledge to include:

- Understanding the importance of healthy food choices (ELG)
- Understand how to wash hands properly
- Become increasingly confident managing basic hygiene and personal needs successfully.
- Know that farms can contain plants and/or animals, and that farms create food.

Key Vocabulary

healthy
varied

Materials Needed:

Fruit (for tasting and final product), chopping boards, knives, plastic containers, fruit juice

Sticky Knowledge:

- We need to eat well and exercise so that we can stay healthy
- Some food is grown (with examples)

WALT understand what makes a healthy and varied diet

- Share definitions for healthy and varied
- Organise foods into simple groups

WALT understand where food comes from

- Look at the 3 main types of farm (dairy, livestock, arable/planting and growing) to understand where food comes from

WALT sample and evaluate ingredients

WALT plan our fruit salad and how to keep clean and safe when preparing food

- Model the use of annotated drawings

WALT make a fruit salad (including safe use of tools)

- Practice and apply basic hygiene practices
- Understand how to wash hands properly and with independence

WALT evaluate our fruit salad

- Image of finished product in books
- Star diagram completed
- Explanation of thoughts
- Explanation of how to improve

Spring

Making a toy vehicle

Structures and Systems - Mechanisms (wheels and axles)

Prior knowledge to include:

Selects resources needed to shape, assemble and join materials they are using. Use simple tools to effect changes to materials.

Handle tools, objects, construction and malleable materials safely and with increasing control

Use scissors accurately.

Can measure using non-standard units

Key Vocabulary

Vehicle

Wheels

Axles

Chassis

Materials Needed:

[TTS set](#) x3

A4 card x 60

Felt tip pens

Colouring pencils

Sticky Knowledge:

- A wheel is a circular object that can help things move
- A vehicle is a machine that is used to move people or things
- An axle is a rod that passes through the centre of a wheel. It can be fixed to the wheel or the vehicle.
- Corners can be reinforced to make them stronger

WALT explore toy vehicles

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label key components

WALT create wheels and axles

- Wheels and axles to be made and can be used in final product

WALT design a toy vehicle

- Share design problem
- Share design brief template and complete with children

WALT make a toy vehicle

- Create chassis and body – corners to be reinforced to make them stronger

WALT make a toy vehicle

- Create body and paint

WALT evaluate a toy vehicle

- Revisit design problem and brief
- Model completion of star diagram for evaluation
- Model explanation of thoughts: things they like about their product and ways to improve
- Challenge: explain effectiveness of design choices

Summer

Puppets

Textiles (running stitch)

Prior knowledge to include:
Experiment with textiles

Key Vocabulary

Textiles
Running stitch
Knot

Materials Needed:

[Pre-cut puppet set x3](#)

[Eye clips](#) x2

Felt

Feathers

Glue gun

PVA glue

Sticky Knowledge:

- Textile is another word for cloth. Its name means 'woven fabric'
- Able to recognise and create the running stitch
- How to tie a knot

WALT explore puppets

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label key components and processes

WALT sew using a running stitch

- Model running stitch and how to thread a needle (can use a needle threader)
- Children to use binka to practice running stitch
- Once confident, children to practice running stitch in felt

WALT design a puppet

- Share design problem
- Share design brief template and complete with children

WALT make a puppet

WALT make a puppet

WALT evaluate a puppet

- Revisit design problem and brief
- Model completion of star diagram for evaluation

- Model explanation of thoughts: things they like about their product and ways to improve
- Challenge: explain effectiveness of design choices

Year 2

Autumn

Making a healthy sandwich

Cooking and Nutrition

Prior knowledge to include:

- Practice and apply basic hygiene practices.
- Understand how to wash hands properly and with independence.
- Understand the basic principles of a healthy and varied diet
- Learn to use hand tools and equipment safely and appropriately with adult support where necessary.
- Start to independently follow a recipe. Prepare ingredients using appropriate cooking utensils.

Key Vocabulary

Flour
Yeast
Bread

Materials Needed:

NB: Please adapt ingredients to cater for any children with allergies.

- Two slices of sliced bread (carbohydrate)
- Protein of choice (vegetarian option needed)
- Lettuce and/or cucumber (vegetable)
- Cheese slices (dairy)
- Butter (fat/oil)
- X30 paper plates
- X5 large tin foil trays (one per table to display all ingredients)
- X30 Napkins

Sticky Knowledge:

Flour is a powder made from grain

Yeast is a tiny organism that can be used to make bread rise and adds flavour

Names of selected bread

The five main food groups are:

- fruit and vegetables that give us vitamins and fibre
- Carbohydrates (pasta, bread and rice) keep our energy levels up
- Proteins (meat, beans and eggs) help us to grow and repair
- Dairy gives us strong teeth and bones
- Fats and oils act as an energy store

WALT understand what makes a healthy and varied diet

- Share definitions for healthy and varied
- Organise foods into simple groups

WALT understand where food comes from
 Look at the 3 main types of farm (dairy, livestock, arable/planting and growing) to understand where food comes from

WALT sample and evaluate ingredients

WALT plan our sandwich and how to keep clean and safe when preparing food
 Model the use of annotated drawings

- WALT make a healthy sandwich (including safe use of tools)
- Practice and apply basic hygiene practices
 - Understand how to wash hands properly and with independence

- WALT evaluate our sandwich
- Image of finished product in books
 - Star diagram completed
 - Explanation of thoughts
 - Explanation of how to improve

Spring Moving Pictures

Structures and Systems - Mechanisms (levers and sliders)

Prior knowledge to include:

Assemble, join and combine materials.

Use a range of construction materials and components including cardboard, textiles with support from an adult.

Learn how to cut, shape and score materials.

Key Vocabulary

Lever
 Pivot
 Slider
 Mechanism

Materials Needed:

X30 A4 plain card
 X30 Plain paper (to make mechanisms)
 Split pins
 Blue tac
 Scissors
 Glue
 Coloured pencils
 Masking tape

Sticky Knowledge:

- A mechanism is a device that is used to create movement
- A pivot is the point at which something turns
- A lever is a rigid beam that turns on a pivot, that is used to lift something

- A slider is a mechanism which makes something move up, down, left or right

WALT explore moving pictures

- Checks made on ensuring prior knowledge is known
- Use a range of pop-up books and resources to show levers and sliders
- Children to explore resources
- Children to complete drawings of mechanisms in books, including explanations of movements

WALT create levers and sliders

WALT design a moving picture

- Share design problem
- Share design brief template and complete with children

WALT make a moving picture

WALT make a moving picture

WALT evaluate a moving picture

- Revisit design problem and brief
- Model completion of star diagram for evaluation
- Model explanation of thoughts: evaluate ideas and products against design criteria
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Summer African Textiles (4 weeks)

Textiles (wax resist and dyeing)

Prior knowledge to include:

Manipulate fabrics in simple ways to create the desired effect.

Strong and Stable Structures (2 weeks)

Structures and Systems – Structures

Prior knowledge to include:

Use a range of construction materials and components including cardboard, textiles with support from an adult.

With help, measure and mark out templates for a product.

Learn how to cut, shape and score materials.

Key Vocabulary

Wax resist

Dyeing

Structures

Reinforce

Wide base

Strength

Stiffness

Materials Needed:

Fabric dye
Wax crayons
A piece of fabric about 20cmx20cm

Paper
Masking tape

Sticky Knowledge:

- Wax resist is where wax can be used to create a pattern.
- Wax resists water and so the dye does not leave a mark where wax is placed.
- Dye is used to change the colour of a textile

- Strength measures how much force is needed for a material to change shape until it breaks or cannot return to its original shape
- Stiffness measures how much force is needed for a material to not change shape until it bends (and still returns to its original shape)
- Adding material can improve strength and stiffness
- Choice of material can improve strength and stiffness
- A wide base makes structures more stable

WALT explore wax resist

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label thoughts on processes

WALT design a wax resist textile

- Share design problem
- Share design brief template and complete with children

WALT make a wax resist textile

WALT evaluate a wax resist textile

- Image of finished product in books
- Star diagram completed
- Explanation of thoughts
- Explanation of how to improve

WALT make a strong structure using reinforcing

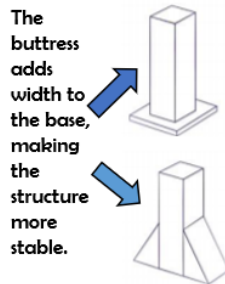
- Review a range of materials to test strength and stiffness
- **Design criteria – Task (above 15cm? tall), made out of paper, has to withstand.. has minimum 3 techniques.**
- Experiment with paper to make them “stronger, stiffer and more stable” + tubes

Designing - What makes a strong, stable, rigid structure?

A structure that is stable is less likely to fall over.

-Structures are more stable when they have a wider base.

-Buttresses can also make a structure more stable. A buttress is something that is built against a structure to give it more stability.



A structure that is strong and rigid is able to support more weight.

-Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.

-Structures can also be made stronger and more rigid by making sure that parts and

materials are properly joined together, e.g. with glue or tape.

-Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.

-
- Children to make a platform (self-standing) to hold increasing weights
- Evaluate how the winners held the most weights.

WALT make a stable structure using a wide base

- Use image of Eiffel tower to look at a structure with a wide base
- Children to make a tall structure using principle of wide base, e.g. competition to see who can make the tallest structure using newspaper and tape

Year 3

Autumn Embroidery

Textiles (back stitch)

Prior knowledge to include:
Sewing using a running stitch

Key Vocabulary

Embroidery
Running stitch
Back stitch
Cross stitch

Materials Needed:

**Felt triangles of various colours,
Threads and needles
Card squares**

Sticky Knowledge:

- Textile is another word for cloth. Its name means 'woven fabric'
- Able to recognise and create the running stitch, back stitch and cross stitch
- How to tie a knot

WALT explore embroidery

- Share examples of embroidery
- Point out examples of running stitch, back stitch and cross stitch
- Children to complete annotated diagrams in books of favourite pieces

WALT sew using a back stitch

- Remind children of running stitch
- Model back stitch and cross stitch
- Children to practice back stitch on binka
- Once confident, children to practice back stitch in felt
- Challenge: cross stitch

WALT design an embroidery stitch bookmark

- Share design problem
- Share design brief template and complete with children

WALT make an embroidery bookmark

WALT make an embroidery bookmark

WALT evaluate an embroidery bookmark

- Revisit design problem and brief
- Model completion of star diagram for evaluation

- Model explanation of thoughts: evaluate ideas and products against design criteria and suggest ways to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Spring

Strong Structures/Bridges

Structures and Systems – Structures

Paddy's recommendation – Start experimenting with paper tubes/cylinders etc before moving onto dowels + glue guns.

Prior knowledge to include:

- Strength measures how much force is needed for a material to change shape until it breaks or cannot return to its original shape
- Stiffness measures how much force is needed for a material to not change shape until it bends (and still returns to its original shape)
- Adding material can improve strength and stiffness
- Choice of material can improve strength and stiffness
- A wide base makes structures more stable

Key Vocabulary

- Rigidity/stiffness – a material's resistance to bending (during the period it can return to its original shape)
- Strength – a material's resistance to changing shape or breaking (when it cannot return to its original shape)
- Hardness – a material's resistance to surface scratching (Y5 science)
- Brittle – a material that is hard and rigid but not strong
- Stable – a structure's resistance to moving

Materials Needed:

Newspapers or scrap paper x loads of masking tape

Square cross section dowel, glue guns

Sticky Knowledge:

- Rigidity/stiffness – a material's resistance to bending (during the period it can return to its original shape)
- Strength – a material's resistance to changing shape or breaking (when it cannot return to its original shape)
- Hardness – a material's resistance to surface scratching (Y5 science)
- Brittle – a material that is hard and rigid but not strong
- Stable – a structure's resistance to moving

- WALT explore features of bridges

WALT create stiff structures using triangles and explore the effect of length on strength

- Truss bridge
- Build across a table with a light weight, explore length it takes to break.
Use glue guns and lollipop sticks?

- WALT design a bridge based on design criteria

WALT make a truss bridge

- Using glue guns/ lollipop sticks?
- Look at how to reinforce

WALT make a truss bridge



WALT: evaluate a truss bridge against design criteria



Summer

Pasta

Cooking and Nutrition

Prior knowledge to include:

Understand the importance of good personal hygiene.

Understand that all food comes from plants or animals

Understand what a balanced plate looks like. Name and sort foods into the five groups.

Use and combine a range of ingredients

Measure and weigh ingredients to the nearest gram and millilitre.

Key Vocabulary

Pasta

Pesto

Knead

Fruit and vegetables

Vitamins

Minerals

Carbohydrates

Protein

Dairy

Fats and oils

Materials Needed:

For making pasta: zip lock bags, rolling pins, wheat, 00 flour, eggs, bowls, forks, knives, vegetable peelers, chopping board, pasta, seasonal vegetables,

For pasta salad: 100g of dry pasta per group of 3 children (cooked and prepared at home by teacher the night before) peppers, tinned sweetcorn, carrot, basil, spring onions, cherry tomatoes, celery, rocket (plus small Tupperware containers with lids (to take home)

Sticky Knowledge:

The five main food groups are:

- fruit and vegetables that give us vitamins, minerals and fibre
- Carbohydrates (pasta, bread and rice) keep our energy levels up
- Proteins (meat, beans and eggs) help us to grow and repair
- Dairy gives us strong teeth and bones
- Fats and oils act as an energy store

How to prepare and store food hygienically

Mould is a type of fungus that can grow on food. Mould makes food decay and spoil.

Decay means to rot, decompose or break down.

WALT make pasta

<ul style="list-style-type: none"> • In groups, children to make pasta • Demonstrate hygienic food preparation and storage (such as storing food effectively and learning about mould and decay).
<p>WALT know what a healthy diet is</p> <ul style="list-style-type: none"> • Review 5 food groups work, with a focus on vitamins and minerals
<p>WALT know where food comes from</p> <ul style="list-style-type: none"> • Look at food lifecycles, including <ul style="list-style-type: none"> ○ Seed to fruit ○ Grain to bread
<p>WALT make pesto (check allergies) – double lesson</p> <ul style="list-style-type: none"> • Look at recipe for making pesto • Share where ingredients are grown • Children to make pesto • Add pasta for tasting
<p>WALT make pesto (check allergies) – double lesson</p>
<p>WALT evaluate our pesto pasta</p> <ul style="list-style-type: none"> • Image of finished product in books • Star diagram completed • Explanation of thoughts • Explanation of how to improve

Year 4

Autumn

Pizza

Cooking and Nutrition

Prior knowledge to include:

Demonstrate hygienic food preparation and storage (such as storing food effectively and learning about mould and decay).

Understand where food comes from (food lifecycles – seed to fruit, grain to bread)

Understand the further principles of a healthy and varied diet (vitamins and minerals in foods)

Key Vocabulary

Seasonality

Origin

Muscle

Brain

Fruit and vegetables

Carbohydrates

Protein

Dairy

Fats and oils

Materials Needed:

- Pizza boxes
- Baking paper
- Scales
- Bowls x 15
- Tomato paste
- Dough- flour, yeast, oil, salt, water
- Toppings

Sticky Knowledge:

The five main food groups are:

- fruit and vegetables that give us vitamins, minerals and fibre
- Carbohydrates (pasta, bread and rice) keep our energy levels up
- Proteins (meat, beans and eggs) help us to grow and repair
- Dairy gives us strong teeth and bones
- Fats and oils act as an energy store

When, where and how ingredients to a pizza are grown (seasonality and origin)

- Origin of food is where it is from [and can give examples]
- Seasonality of food is when it is grown or available [and can give examples]

WALT understand when, where and how food is grown in the UK.

- Review ingredients of a pizza
- Introduce terms seasonality and origin
- Locate where and how key ingredients are grown

WALT understand how different foods impact on muscle and brain performance

WALT design a seasonal pizza for the UK

WALT design engaging packaging for our pizza

- Review pizza box designs for effectiveness
- List key items to include on boxes and model the design process
- Children to design pizza box

WALT create a seasonal pizza for the UK

WALT evaluate our pizza

- Image of finished product in books
- Star diagram completed
- Explanation of thoughts
- Explanation of how to improve

Spring Torches

Structures and Systems - Electrical Systems

Prior knowledge to include:

Creating a series circuit using bulbs (Y4 science)

Create structures knowing how to reinforce, strengthen and stiffen

Know that cylinders are the strongest shape in compression

Know that choice of material and size (length and thickness) of material affect strength

Know how to reinforce structures

Know that triangles are strong and stable, especially equilateral triangles

Key Vocabulary

Switch
Bulb
Strengthen
Stiffen
Reinforce

Materials Needed:

- Card
- Tin foil
- Switch: pins, paper clip
- Circuit: bulb, 3 x wires, battery and holder

Sticky Knowledge:

- Recognise a series circuit
- Apply understanding of how to strengthen, stiffen and reinforce more complex structures.

WALT explore torches

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label key components

WALT make a switch

- Remind children of a circuit, as well as safety consideration of short circuits
- Share with children how to make a range of switches
 - Push/doughnut switch using foil
 - Pressure switch using foil
 - Clothes peg switch
 - Paperclip switch
- Children to make switches and check use

WALT design a torch

- Share design problem
- Share design brief template and complete with children

WALT make a torch

WALT make a torch

WALT evaluate a torch

- Revisit design problem and brief
- Model completion of star diagram for evaluation
- Model explanation of thoughts: evaluate ideas and products against design criteria and suggest ways to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Summer Mountain Applique

Textiles (running and blanket stitch)

Prior knowledge to include:

Textile is another word for cloth. Its name means 'woven fabric'
Able to recognise and create the running stitch, back stitch and cross stitch
How to tie a knot

Key Vocabulary

Applique
Textile
Running stitch
Blanket stitch
Satin stitch

Materials Needed:

- Needles
- Thread
- Fabric
- Tote bags

Sticky Knowledge:

- Textile is another word for cloth. Its name means 'woven fabric'
- Able to recognise and create the running stitch, back stitch, cross stitch, blanket stitch and satin stitch
- How to tie a knot

WALT explore applique

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label thoughts on processes

WALT: use running and blanket stitch to join fabric

WALT: use a Satin stitch to decorate

WALT design a decoration for a bag using applique

- Share design problem
- Share design brief template and complete with children

WALT make a decoration for a bag using applique

WALT make a decoration for a bag using applique

WALT evaluate a decoration for a bag using applique

- Revisit design problem and brief
- Model completion of star diagram for evaluation
- Model explanation of thoughts: evaluate ideas and products against design criteria and suggest ways to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Year 5

Autumn

Pasties

Cooking and Nutrition

Prior knowledge to include:

Apply the rules for basic food hygiene and other safe practices.
Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world.
Understand different foods impact on muscle and brain performance.

Key Vocabulary

Food nutrition
Origin
Seasonality
Risk
Hazard

Materials Needed:

Beef
Potato
Onion
Flour
Eggs
Salt
butter

Sticky Knowledge:

- Good nutrition means your body gets all the nutrients, vitamins, and minerals it needs to work its best.
- Origin of food is where it is from [and can give examples]
- Seasonality of food is when it is grown or available [and can give examples]
- Can identify risks and hazards when preparing and cooking
- Able to give examples of food that is local and food that is from overseas

WALT know what our local foods are

WALT read and understand food nutrition labels

WALT understand where, when and how food is grown (Y4 recap)

WALT understand the risks and hazards in the kitchen

WALT make a local food

WALT evaluate our food

- Image of finished product in books
- Star diagram completed
- Explanation of thoughts
- Explanation of how to improve

Spring
Moving Toys

Structures and Systems – Mechanical Systems (cams)

Note: this unit complements the Computing unit. WALTs below are for both Computing and DT.

Prior knowledge to include:

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

Understanding of forces (from science)
<p align="center"><u>Key Vocabulary</u></p> <p align="center">Cam Follower</p>
<p align="center"><u>Materials Needed:</u></p> <p align="center">Cardboard Cam set including: Cams Rods Toy frames gluegun</p>
<p><u>Sticky Knowledge:</u></p> <ul style="list-style-type: none"> • A cam mechanism is a linkage system which has a follower to convert rotary movement to linear movement • Different cams produce different linear movements • A follower is the part of a machine in sliding or rolling contact with a rotating cam and given motion by it.
<p>WALT explore moving toys</p> <ul style="list-style-type: none"> • Checks made on ensuring prior knowledge is known • Related products are explored with diagrams drawn to label key components
<p>WALT understand the effects of a cam</p> <ul style="list-style-type: none"> • Children to understand that a cam is a linkage system which has a follower to convert rotary movement to linear movement. • Children to explore the effect of different shape cams and the associated movement to the follower
<p>WALT: Recap our 3D design skills</p> <ul style="list-style-type: none"> • Logging into TinkerCAD, manipulating, moving etc. • Start a print in the lesson so children can see the process <p>Use year 6 first few lessons for some slides/graphics</p>
<p>WALT design a moving toy using a cam</p> <ul style="list-style-type: none"> • Share design problem • Share design brief template and complete with children • Must include a 3d printed part • In books
<p>WALT: model our design in CAD software</p> <ul style="list-style-type: none"> • 2 Lessons
<p>WALT: design part of my moving toy in TinkerCAD</p>
<p>WALT: 3D print part of my moving toy</p> <ul style="list-style-type: none"> • Exporting and printing • 2 Lessons
<p>WALT make a moving toy using a cam</p> <ul style="list-style-type: none"> • 2 Lessons
<p>WALT evaluate a moving toy using a cam</p> <ul style="list-style-type: none"> • Revisit design problem and brief

- Model completion of star diagram for evaluation
- Model explanation of thoughts: evaluate ideas and products against design criteria and consider views of others to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Summer Weaving

Textiles (weaving and weaving looms)

Prior knowledge to include:

Textile is another word for cloth. Its name means 'woven fabric'
Able to recognise and create the running stitch, back stitch, cross stitch, blanket stitch and satin stitch
How to tie a knot

Key Vocabulary

Weave
Loom
Textile

Materials Needed:

Cardboard squares
Loads of wool

Sticky Knowledge:

- Weaving is to make cloth by repeatedly crossing a single thread through two sets of long threads on a loom
- A loom is a frame or machine used to weave

WALT explore weaving

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label thoughts on processes

WALT weave

- Model using paper strips
- Children to practice weaving using paper strips

WALT design a coaster using weaving

- Share design problem
- Share design brief template and complete with children

WALT make a coaster using weaving

- Model to children how to create a loom out of cardboard. Model how to weave using the loom. Show how to create diagonal designs for challenge option.

WALT make a coaster using weaving

WALT evaluate a coaster using weaving

- Revisit design problem and brief
- Model completion of star diagram for evaluation

- Model explanation of thoughts: evaluate ideas and products against design criteria and consider views of others to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Year 6

Autumn

Upcycling Clothes

Textiles (applying known stitches)

Prior knowledge to include:

Textile is another word for cloth. Its name means 'woven fabric'
 Able to recognise and create the running stitch, back stitch, cross stitch, blanket stitch and satin stitch
 How to tie a knot
 How to weave

Key Vocabulary

Upcycle
 running stitch, back stitch, satin stitch, blanket stitch

Materials Needed:

Binkas
 Needles
 Thread
 Needle threaders
 t-shirt
 material squares

Sticky Knowledge:

- Why it is important to repair clothes
- Textile is another word for cloth. Its name means 'woven fabric'
- Able to recognise and create the running stitch, back stitch, cross stitch, blanket stitch and satin stitch
- How to tie a knot

WALT explore upcycling

- Checks made on ensuring prior knowledge is known
- Related products are explored with diagrams drawn to label key components

WALT sew using a range of stitches

- Review previously taught stitches: running stitch, back stitch, satin stitch, blanket stitch
- Children to practice on scrap cloth

WALT design an upcycled piece of clothing

- Share design problem

- Share design brief template and complete with children

WALT make an upcycled piece of clothing

WALT make an upcycled piece of clothing

WALT evaluate an upcycled piece of clothing

- Revisit design problem and brief
- Model completion of star diagram for evaluation
- Model explanation of thoughts: evaluate ideas and products against design criteria and consider views of others to improve work
- Challenge: explain effectiveness of design choices based on the properties of materials and choice of joining

Spring

Programming B – Creating Real World Appliances Using Sensors (with Computing) Structures and Systems – Computing Systems

Note: this unit complements the Computing unit – full planning to be found in computing unit. DT lessons to be used to create a product that uses the programming learnt in Computing. WALTs below are for both Computing and DT.

Materials Needed

Crumble packs
 Glue guns
 Cardboard
 Card paper
 Paint
 Paper
 Paper clips
 Computers
 iPads

WALT: write a program using appropriate inputs

WALT: write a program that include count-controlled loops

WALT: connect and program sensors attached to crumbles

WALT: use sensors to stop loops when conditions are met

WALT: design a real-world project that uses a controllable device

WALT: create and programme a project that uses a controllable device

WALT: make and finalise the design of our project

WALT: present and evaluate my project

Summer

World Food Study

Cooking and Nutrition

Prior knowledge to include:

Understand and risk assess hazards relating to the use of ovens, utensils and kitchen appliances.

<p>Apply understanding of when where and how food is grown when planning and designing food products.</p> <p>Read and understand food nutrition labels.</p> <p>Use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven.</p>
<p style="text-align: center;"><u>Key Vocabulary</u></p> <p style="text-align: center;">Grown Reared Caught Grill Bake Boil</p>
<p style="text-align: center;"><u>Materials Needed:</u></p> <p style="text-align: center;"><u>Potatoes</u> <u>eggs</u></p>
<p style="text-align: center;"><u>Final Product:</u></p>
<p><u>Sticky Knowledge:</u></p> <ul style="list-style-type: none"> • Understand national food hygiene regulations (such as best before and use by dates, allergy information and cross contamination). • Know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Apply understanding of food nutrition labels in planning and preparing dishes. • To grill is to heat food using a part of a cooker that directs heat downwards • To bake is to heat food using dry heat, usually in an oven • To boil is to cook food in boiling water, or other water-based liquids (such as stock or milk).
<p>WALT understand national food hygiene regulations</p>
<p>WALT understand and apply food nutrition labels</p>
<p>WALT know, explain and give examples of food that is grown in the UK and wider world</p>
<p>WALT bake</p> <ul style="list-style-type: none"> • Discuss safety aspects of baking • Cook food using baking
<p>WALT boil</p> <ul style="list-style-type: none"> • Discuss safety aspects of boiling • Cook food using boiling
<p>WALT evaluate our foods</p> <ul style="list-style-type: none"> • Image of finished product in books • Star diagram completed • Explanation of thoughts • Explanation of how to improve

Note - Apply understanding of food nutrition labels in planning and preparing dishes.

<u>Design Technology Overview</u>			
	<u>Term</u>	<u>Unit Title</u>	<u>Strand</u>
Year 1	Autumn	Making a fruit salad	Cooking and Nutrition
	Spring	Making a toy vehicle	Structures and Systems - Mechanisms (wheels and axles)
	Summer	Puppets	Textiles (running stitch)
Year 2	Autumn	Making a healthy sandwich	Cooking and Nutrition
	Spring	Moving Pictures	Structures and Systems - Mechanisms (levers and sliders)
	Summer	African Textiles (4 weeks) Stable Structures (2 weeks)	Textiles (wax resist and dyeing) Structures and Systems - Structures
Year 3	Autumn	Embroidery	Textiles (back stitch)
	Spring	Strong Structures	Structures and Systems – Structures Do as 2 sections – tower and bridge (cylinders, wide base, triangle)
	Summer	Pasta	Cooking and Nutrition
Year 4	Autumn	Pizza	Cooking and Nutrition
	Spring	Torches	Structures and Systems - Electrical Systems
	Summer	Mountain Applique	Textiles (running and blanket stitch)
Year 5	Autumn	Local Food Study	Cooking and Nutrition
	Spring	Moving Toys	Structures and Systems – Mechanical Systems (cams)
	Summer	Weaving	Textiles (weaving and weaving looms)
Year 6	Autumn	Upcycling Clothes	Textiles (applying known stitches)
	Spring	Programming in Products	Structures and Systems – Computing Systems
	Summer	World Food Study	Cooking and Nutrition