HEAP BRIDGE VILLAGE PRIMARY SCHOOL

Design Technology

Long Term Curriculum Planning

&

Assessment Arrangements

Design Technology – National Curriculum Implementation Plan & Knowledge Organiser

Design Technology in the Early Years

The aim of this document is to help all subject leaders understand how the EYFS framework links to the National Curriculum. The EYFS is set out very differently to the National Curriculum, in the way that the EYFS is made up of 7 areas of learning, rather than subjects. The National Curriculum sets out the stages and core subject's children will be able to be taught during their time at school; The Early Years Foundation Stage sets standards for the development, learning and care of children from birth. Although not named 'Design Technology' within the EYFS, children receive the opportunity for developing their creative skills and imagination through the EYFS areas of learning: **Expressive arts and design, Understanding the World** and **Physical Development.**

The EYFS states: *"The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe."*

Statements from the EYFS:

- 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.

How we learn throughout the year:

- Building construction indoors and outdoors and being able to share creations.
- Developing scissor control through using tools safely.
- Exploring different designs, patterns, textures and materials from around the world.
- Looking at different colours, shapes and patterns.
- Through experimenting with colours.
- Celebrations: through observing creative crafts from around the world, e.g. making a Chinese lantern for Chinese New Year.

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Three and Four-Year-Olds	Personal, Social and Emotional Development	• 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	• 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	• Explore how things work.
	Expressive Arts and Design	• 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	• 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	• 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	• Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	• 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.

Expressive art and design

Development Matters	Early Learning Goal	How this achieved in EYFS		By the end of EYFS the children will know…
Reception: 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	**Creating with materials:** 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.	Making/decorating cards for various occasions. Design and build mini-beast houses, adapting work where necessary. Designing and making salt dough decorations. Observe buildings across the UK and design small/giants castles/homes etc linked to key texts Design and create superhero gadgets from junk (WTLT Day) Design and create products for a purpose such as making a wand for a witch or house for a pet. Den making in the outdoor area. Observe the effects of cooking when making Gingerbread men and bread. Create our homes from construction blocks.	**General learning throughout the year:** Child-led activities: Children can self-select from a range of tools and materials in the continuous provision. Children learn by experimenting with tools such as scissors, staplers and hole punches. They make use of fixing and joining materials such as sellotape, masking tape, string, pipe cleaners and glue. Through questioning children are encouraged to talk about what they like about their work and other children's designs and how they would improve it. Help to design and make small worlds in line with topic.	**Knowledge:** I know how to use scissors safely. I can cut along a straight line. I can cut along a wavy line. I can join to items using tape. I can use glue to fix items together I know how draw a plan. I know that I can adapt and change something I have made. I can work with a friend, sharing ideas. I know that some materials are better for building with than others. I can talk about what I have made and say why. **Key Vocabulary:** Scissors, cut, straight, join, hold, fix, glue, shape, safely, colour, design, plan, create, make, explain, why, change, together, features, pieces.

Design Technology – National Curriculum Implementation Plan & Knowledge Organiser

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. **They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art.** Pupils learn how to **take risks**, **becoming resourceful**, **innovative, enterprising and capable citizens**. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. **Schools are not required by law to teach the example content in [square brackets] or the content indicated as being 'non-statutory'.**

Key stage 1

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

When designing and making, pupils should be taught to:

Design

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

Make

- select from and use a range of tools and equipment to perform practical tasks
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

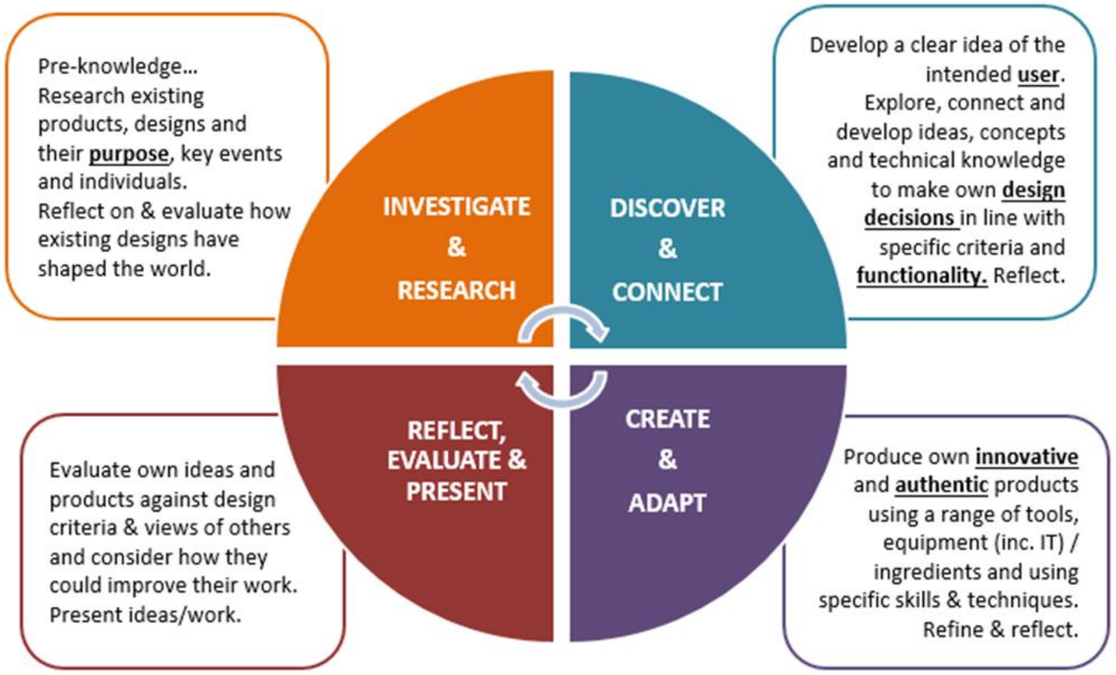
Evaluate

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

Technical knowledge

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

Please note *– in addition to securing the D&T principles (see KS2 section below), it is important to check that other key aspects of teaching and learning are in place e.g. the development of knowledge, understanding and skills through the evaluation of existing products and focused tasks. Please visit www.data.org.uk/for-education/primary for more information and advice.*



Design Technology Curriculum – Overview: Key Stage 1

Knowledge Organiser

National curriculum *links/coverage* **YEAR 1**	**Developing subject knowledge & Subject/Technical vocabulary** **Evaluate**: *explore and evaluate a range of existing products* **Design**: *design purposeful, functional, appealing products for themselves and other users based on design criteria, generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology*. **Technical knowledge**: *build structures, exploring how they can be made stronger, stiffer and more stable, explore and use mechanisms in their products*.	**Application of knowledge:** **Make**: *select from and use a range of tools and equipment to perform practical tasks, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.* **Evaluate:** *explore and evaluate a range of existing products, evaluate their ideas and products against design criteria*
Food – Fruit and Vegetables **Other curriculum links:** *Working scientifically:* *- Identifying and classifying.* *- Using their observations and ideas to suggest answers to questions.* KO-DT-Y1-Fruit-Vegetables-PRINT.pdf	**INVESTIGATE & RESEARCH:** • I can identify and name a variety of fruit and vegetables. • I can determine if something is a fruit or a vegetable and classify them. **DISCOVER & CONNECT:** • I can explain that fruits and vegetables grow in one of three places: -on trees or vines, above the ground or below the ground. • I can explain that we eat different parts of plants and to be able to give examples. **SUBJECT VOCABULARY:** Classify, vines, names of fruit and vegetables, leaves, root, stem, stalk, prepare, appearance, evaluate. Blender, carton, fruit. Healthy, ingredients, peel, peeler, recipe, slice, smoothie, stencil, template, vegetable	**CREATE & ADAPT:** • I can taste fruits and vegetables and describe their: - Appearance/feel - Smell – Taste. • I can follow procedures for safety and hygiene. • I can cut and peel fruit and vegetables to make a smoothie. **REFLECT & EVALUATE:** • I can talk about my design idea and the smoothie that I made. • I can describe what I found hard. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – Sketchbook work/activities, photographs on school blog* *D&C – I can explain where fruit and vegetables grow.* *C&A – I can make a smoothie using fruit and vegetables.* *R&E – I can articulate what I found hard.*
Mechanisms- Wheels and Axles **Other curriculum links:** *Communicate where appropriate, information and communication technology.* *Maths- Measure and begin to record lengths and heights* KO-DT-Y1-Mechanisms-Wheels-and-Axle	**INVESTIGATE & RESEARCH:** • I can explore existing products and identify who they are for. • I can identify what mechanism makes a toy or vehicle roll forwards. • I can understand the movement of mechanisms (wheels and axels - in order for a wheel to move it must be attached to an axle) **DISCOVER & CONNECT:** • I can identify what stops wheels from turning and explain how it could be solved. • I can label my design using appropriate vocabulary to describe which parts are moving or not and I can say how my product will work. • I can design a vehicle that includes wheels, axles and axle holders, generating ideas by drawing on their own experiences. **SUBJECT VOCABULARY:** Wheel, Axel, Axel holder, mechanisms, vehicle, attached, diagram, experiment, circular, chassis. Accurate, design, fix, mechanic, model, test	**CREATE & ADAPT:** • I can select from a range of tools and equipment. • I can make a moving vehicle which works (wheels move correctly). **REFLECT & EVALUATE:** • I can evaluate my design to make it even better. • I can explain how my model works or explain what must be changed so that the vehicle can work. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – I can explain how a wheel works.* *D&C – I can identify what would stop a wheel from turning.* *C&A – I can design and create a moving vehicle.* *R&E – I can articulate how I could make my design better.*
Structures – Baby Bear's Chair **Other curriculum links:** *Identify and describe the properties of two and three-dimensional shapes, including the number of edges, vertices and faces.* *Compare and order lengths.* KO-DT-Y2-Baby-Bears-Chair-PRINT.pdf	**INVESTIGATE & RESEARCH:** • I can identify natural and man-made structures. • I can look at existing products, know how and where they are used. • I can explore the stability of shapes and structures and understand that the shape of the structure affects its strength. **DISCOVER & CONNECT:** • I can explore and test the strength of different structures by exploring materials and by making templates and mock-ups. • I can use existing knowledge of products to design a structure. • I can say how my product will be suitable for the intended user. **SUBJECT VOCABULARY:** Structure, Stable, Man-made, Natural, Shape, Properties, Design Criteria, Stability, Strength, Stiffness Function, stiff, strong, test, weak.	**CREATE & ADAPT:** • I can assemble, join and combine materials to make a structure according to the design criteria. • I can ensure my structure is strong, stiff and stable. • I know how to create joints and structures from paper/card and tape. **REFLECT & EVALUATE:** • I can make simple judgements about my structure according to the design criteria. • I can evaluate the strength, stiffness and stability of the finished structure. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – I can identify natural and man-made structures.* *D&C – I can explore and test the strength of structures.* *C&A – I can make a structure that is strong, stiff and stable.* *R&E – I can evaluate my structure against the design criteria.*

Design Technology Curriculum – Overview: Key Stage 1

Knowledge Organiser

National curriculum *links/coverage* **YEAR 2**	**Developing subject knowledge & Subject/Technical vocabulary** **Evaluate**: *explore and evaluate a range of existing products* **Design**: *design purposeful, functional, appealing products for themselves and other users based on design criteria, generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.* **Technical knowledge**: *build structures, exploring how they can be made stronger, stiffer and more stable, explore and use mechanisms in their products.*	**Application of knowledge:** **Make**: *select from and use a range of tools and equipment to perform practical tasks, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.* **Evaluate:** *explore and evaluate a range of existing products, evaluate their ideas and products against design criteria*
Food- A Balanced Diet **Other curriculum links:** Maths: Compare and order lengths, mass, volume/capacity and record the results using >, < and = KO-DT-Y2-Balanced-Diet-PRINT.pdf	**INVESTIGATE & RESEARCH:** • I can name and sort foods into the five food groups and know how much of each group I should eat each day (including 5 portions or fruit + veg). • I understand where food comes from and that all food needs to be farmed, grown elsewhere or caught. • I can explore a range of existing products and know how to experience food through touch and smell. **DISCOVER & CONNECT:** • I can locate where the nutritional information is packets/containers. • I know what 'hidden sugars' are and can identify what products we find them in. • I can design a wrap pizza based on a balanced diet. **SUBJECT VOCABULARY:** Starch, carbohydrates, protein, mass, volume, capacity, dairy, ingredients Alternative, diet, balanced diet, evaluation, expensive, healthy, nutrients, packaging, refridgerator, sugar	**CREATE & ADAPT:** • I can follow procedures for safety and hygiene. • I can slice food safely using the bridge or claw grip and use techniques such as grating. • I can create a wrap including ingredients from all the food groups. **REFLECT & EVALUATE:** • I can talk about my design and what I have made. • I can review my design and suggest how I could improve my wrap. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – I can identify the five food groups, explain what they are made up of and where they come from.* *D&C – I understand what a balanced diet consists of and apply this knowledge to design a wrap.* *C&A – I can create a wrap pizza based on a balanced diet.* *R&E – I can explain which ingredients from my wrap are from which food group and make suggestions to improve it.*
Structures- Constructing a Windmill **Other curriculum links:** Maths: Recognise and name common two-dimensional and three-dimensional shapes. KO-DT-Y1-Structures-Constructing-a-Wi	**INVESTIGATE & RESEARCH:** • Explore and evaluate a range of existing products. • I know what a windmill is, what windmills are for and how they work. • I understand that windmill turbines use wind to turn and make the machines inside work. I know that axles are used in structures and mechanisms to make parts turn in a circle. **DISCOVER & CONNECT:** • I understand the importance of a clear design criteria and use this to develop ideas. • I understand what stable means and can ensure my structure has this property. I can understand how my structure can be made stronger, stiffer and more stable. • I can explain what product I am designing and making. **SUBJECT VOCABULARY:** Structure, stable, turbine, axle Client, design, design criteria, evaluation, net, stable, strong, test, weak, windmill, windmill axle, windmill structure, windmill turbine.	**CREATE & ADAPT:** • I can select from a range of tools and equipment. • I can follow instructions to cut and assemble the supporting structure of my windmill. • I can cut and assemble my turbine correctly, attach my turbine to the axle and attach them to the structure of my windmill. **REFLECT & EVALUATE:** • I can evaluate and make simple judgements about the windmill according to the design criteria. • I can test whether my structure is strong and stable and reinforce it if necessary. • I can test whether my turbine turns freely in the wind. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – I can explain what a windmill is and discuss a windmill's purpose.* *D&C – I understand the properties of a windmill and can apply this knowledge to design my own.* *C&A – I can create a stable windmill.* *R&E – I can test my windmill and make changes if necessary.*
Textiles: Pouches **Other curriculum links:** KO-DT-Y2-Pouches-PRINT.pdf	**INVESTIGATE & RESEARCH:** • I can look at a range of products. Understand how they were made and what material they are made from. • I can compare pouches and their designs, stating what I like and dislike. **DISCOVER & CONNECT:** • I can thread a needle, sew a running stitch and use neat and evenly spaced stitches to join fabric. • I can design a pouch with decorations, using knowledge of existing products. • I can say if my product is for myself or another user and what my product will be used for. **SUBJECT VOCABULARY:** Running stitch, fabric, pouch, needle, knot, stencil, thimble, accurate, sew, template Shape, template	**CREATE & ADAPT:** • I can measure, mark out and cut fabric neatly. • I can prepare a thread and sew neatly. • I can select from a range of materials and components according to their characteristics. • I can use finishing techniques to decorate fabric using different items and join these appropriately. **REFLECT & EVALUATE:** • I can evaluate my ideas and products against the design criteria. • I can say how my product could be improved. **Assessment Evidence:** ***2021, 2022, 2023*** *I&R – I understand how materials are made and compare pouch designs.* *D&C – I understand how to use a needle to sew and join fabric.* *C&A – I can create and decorate a pouch based on my design.* *R&E – I can evaluate the success of my product and suggest improvements.*

Key stage 2

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

When designing and making, pupils should be taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

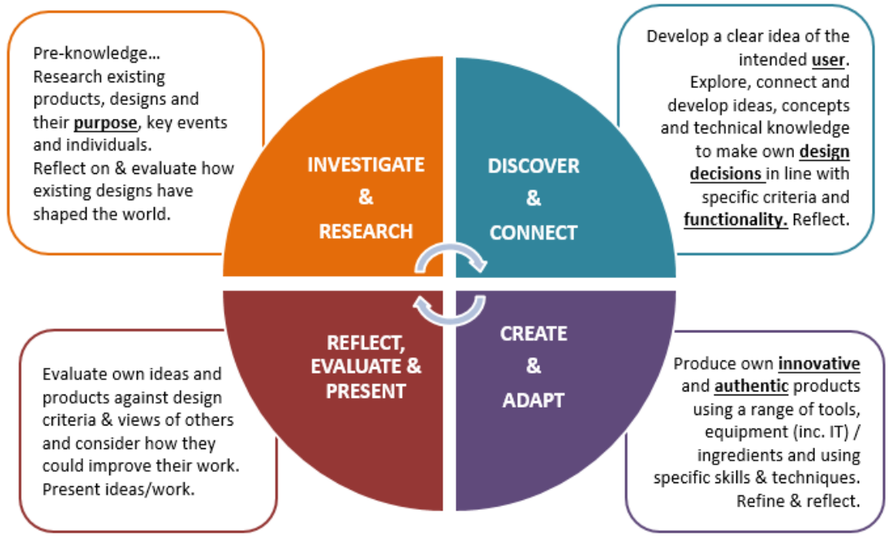
- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional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

Evaluate

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

Technical knowledge

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



When evaluating planning, teaching and learning we suggest you refer to the following definitions for each of the D&T principles:

User *Pupils should have a clear idea of who they are designing and making products for, considering their needs, wants, values, interests and preferences. The intended users could be themselves or others, an imaginary or story-based character, a client, a consumer or a specific target group.*	***Functionality*** *Pupils should design and make products that work/function effectively in order to fulfil users' needs, wants and purposes. In D&T, it is insufficient for children to design and make products which are purely aesthetic.*	***Innovation*** *When designing and making, pupils need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed and are characterised by engaging open-ended starting points for learning.*
Purpose *Pupils should be able to clearly communicate the purpose of the products they are designing and making. Each product they create should be designed to perform one or more defined tasks. Pupils' products should be evaluated through use.*	***Design Decisions*** *Pupils need opportunities to make their own design decisions. Making design decisions allows pupils to demonstrate their creative, technical and practical expertise, and use learning from other subjects. When making design decisions pupils decide on the form their product will take, how their product will work, what task or tasks it will perform and who the product will be for.*	***Authenticity*** *Pupils should design and make products that are believable, real and meaningful to themselves and others.*

Please note – in addition to securing the D&T principles, it is important to check that other key aspects of teaching and learning are in place e.g. the development of knowledge, understanding and skills through the evaluation of existing products and focused tasks. Please visit www.data.org.uk/for-education/primary for more information and advice.

Design Technology Curriculum – Overview: Key Stage 2

Knowledge Organiser

National curriculum *links/coverage* **YEAR 3**	**Developing subject knowledge & Subject/Technical vocabulary** ***Evaluate****: investigate and analyse a range of existing products, understand how key events and individuals in design and technology have helped shape the world.* ***Design****: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.* ***Technical knowledge****: apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products, understand and use electrical systems in their products, apply their understanding of computing to program, monitor and control their products.*	**Application of knowledge:** ***Make****: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities* ***Evaluate:*** *investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world*
Textiles Christmas cushions **Other curriculum links*:*** maths measuring KO-DT-Y3-Textiles-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I can discuss what textiles are, what their purpose is and research and evaluate current cushions on the market. • I can consider what a cushion is used for and where they might find them. • I can reflect on techniques used and understand why some products are turned inside out after sewing. • I can understand what makes a cushion durable and aesthetically pleasing. • I can investigate whether products can be recycled or reused. • I can investigate and analyse how well current cushions on the market have been designed and made. **DISCOVER & CONNECT:** • I can thread the needle and tie a knot independently. • I can experiment using cross stitch, applique and other stitches to join fabric together. • I can sew consistently sized stiches. • I can design a cushion that is aesthetically pleasing, following the design criteria. **SUBJECT VOCABULARY:** Assemble, functionality, pleasing aesthetics, appliqué, textiles, accurate, cross-stitch, cushion,decorate, detail, fabric, patch, running-stitch, seam, stencil, stuffing, target audience.	**CREATE & ADAPT:** • I can select materials and components suitable for the task. • I can use a paper template and cut fabric accurately, following the design criteria. • I can use applique and use a selection of stiches to join fabrics and leave space for a seam. **REFLECT & EVALUATE:** • I can evaluate my cushion against given success criteria. • I can compare my cushion to others already on the market. • I can identify something I have found hard. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can research and evaluate current cushions on the market. D&C – I can understand various stitching to join fabric together C&A – I can* design and cut the template for a cushion and use cross stitch and appliqué to decorate a cushion face. *R&E – I can evaluate my cushion against a given success criteria and identify something that was challenging.*
Food – Eating seasonally **Other curriculum links*:*** *Science food groups, diet Maths – measures and weight* KO-DT-Y3-Food-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I know that a healthy diet is made up from a variety and balance of food and drink (Eatwell Plate) • I know that not all fruits and vegetables can be grown in the UK and that each country has its own climate • I know about chefs that have developed ground breaking products. • I know that food is grown, reared and caught in the UK, Europe and the Wider World. (could discuss impact on the environment) **DISCOVER & CONNECT:** • I know how to prepare myself and a kitchen to cook in • I know the basic rules of food contamination • I can use, store and clean a knife safely • I can follow a range of simple recipes to make a sample of seasonal dishes **SUBJECT VOCABULARY:** Climate hygiene nutrition seasonality, varied diet, grown, reared, caught and processed, Utensils, recipe, distribution, fresh produce, import, environment, raw, mixture, bacteria, benefits. Climate, dry climate, exported, imported, Mediterranean climate, nationally, nutrients, polar climate, recipe, seasonal food, seasons, temperate climate, tropical climate.	**CREATE & ADAPT:** • I can consider hygiene when preparing food and can use cooking equipment safely. • I know what foods are currently in season and am aware that each fruit and vegetable gives us nutritional benefits. • I can design a filo tart using seasonal vegetables and describe the benefits of its ingredients. **REFLECT & EVALUATE:** • I can evaluate the success of my tart through discussion, identifying strengths and areas for developments: • Did it taste as they expected? • Does it look appetising? • Does it reflect a balanced diet? **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can explain that fruits and vegetables grow in different countries based on their climates. I know that 'seasonal' fruits and vegetables are those that are grow in a given season and taste best then. I understand that eating seasonal fruit and vegetables has a positive effect on the environment. D&C – I can prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques C&A – Design their own tart recipe using seasonal ingredients considering the taste, texture, smell and appearance of the dish. Show an understanding of the basic rules of hygiene and safety when working with food, and their ability to follow the instructions within a recipe. R&E – I can evaluate my tart recipe against a given success criteria and identify something that was challenging.*
Mechanical systems - Making a Sling Shot Car **Other curriculum links*:*** KO-DT-Y4-Mechanical-Sling-Car-WEB.pc	**INVESTIGATE & RESEARCH*:*** • I understand that car designs have developed over many years and can investigate when products were designed and made. • I know that all moving things have kinetic energy and this is the energy that something (an object or person) has by being in motion, eg: the energy that a swing has to keep on moving; • I can gather information about the needs and wants of particular individuals or groups. **DISCOVER & CONNECT:** • I can describe the purpose of my product and know that a chassis is the frame of a car on which everything else is built. • I can generate realistic ideas, focusing on the need of the user. • I can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • I understand how to strengthen, stiffen and reinforce more complex structures. **SUBJECT VOCABULARY:** Chassis, axels, frame, angles, kinetic energy, aesthetics, air resistance, design, design criteria, function, graphics, kinetic energy, mechanisms, net, structure.	**CREATE & ADAPT:** • I can design a suitable car body to cover my chassis by drawing a net to create a structure from, choosing shapes that increase or decrease the speed of the car as a result of air resistance, adding graphics to personalise my design using research from existing designs. **REFLECT & EVALUATE:** • I can evaluate the speed of my design based on the understanding that some cars are faster than others as a result of: body shape, stored energy in the elastic band, accuracy of the angle in the chassis and axle. **Assessment Evidence: *2021, 2022, 2023*** *I&R – D&C – I can work independently to produce an accurate, functioning car chassis through the implementation of neat angles and secure gluing/assembly, adding additional strengthening features to their design. C&A – I can 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 I can design a shape that is suitable for the project and make some attempt to reduce air resistance through the design. R&E – I can evaluate the ideas and products against my own design criteria and consider the views of others to improve my work*

Design Technology Curriculum – Overview: Key Stage 2

Knowledge Organiser

National curriculum *links/coverage* **YEAR 4**	**Developing subject knowledge & Subject/Technical vocabulary** ***Evaluate**: investigate and analyse a range of existing products, understand how key events and individuals in design and technology have helped shape the world. **Design**: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Technical knowledge**: apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products, understand and use electrical systems in their products, apply their understanding of computing to program, monitor and control their products.*	**Application of knowledge:** ***Make**: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities* ***Evaluate:** investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world*
Structures - Pavilions **Other curriculum links*:*** *Maths Year 3/4* - Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes - Compare and classify geometric shapes, KO-DT-Y4-Structures-Pavilions-PRINT.pd	**INVESTIGATE & RESEARCH*:*** • I can explain what world expos and pavilions are and discuss their purpose • I can name a famous pavilion and investigate and analyse who designed and made it. • I can explain what cladding is and what effects it can achieve • I can investigate and analyse what methods of construction have been chosen. **DISCOVER & CONNECT:** • I can make a variety of different frame structures using different materials to create different effects. • I can design a structure that is stable and aesthetically pleasing, sharing and clarifying ideas through discussions. • I can share my ideas through annotated sketches. • I understand how to make a stable structure. • I can select appropriate materials for my cladding. **SUBJECT VOCABULARY:** Pavilion, World expo, Cladding, Texture. Free-standing, Structure, Aesthetics, design criteria, evaluation, frame structure, function, inspiration, reinforce, stable, target audience, target customer, texture, theme.	**CREATE & ADAPT:** • I can select suitable tools and equipment to build a free-standing structure. • I can select appropriate materials to build a strong structure. • I refer to my design sheet to create my pavilion. • I can add cladding which reflects my design. **REFLECT & EVALUATE:** • I can articulate feedback when evaluating a peer's structure. • I can compare my final structure to my design sheet. • I can discuss what went well, what was difficult and what didn't go to plan. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can produce a range of free-standing frame structures of different shapes and sizes. D&C – I can design a pavilion that is strong, stable and aesthetically pleasing, including a range of materials to create a desired effect. C&A – I can select appropriate materials and construction techniques to create a stable, free-standing frame structure for my pavilion which clearly reflects my design. I can select appropriate materials and techniques to add cladding to their pavilion which clearly reflects the chosen theme and the design criteria. R&E – I can effectively articulate the strengths of my final structure and reflect on the building process.*
Food: Adapting a recipe **Other curriculum links*:*** *N/A* KO-DT-Y4-Food-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I can consider safety and hygiene when baking. • I can evaluate a product by carrying out a taste test on a variety of biscuits. • I can research and compare different products' packaging and target audience. • I know that to be healthy and active, food and drink are needed to provide energy. **DISCOVER & CONNECT:** • I can follow a basic biscuit recipe using techniques such as creaming, sieving and the rubbing method. • I can develop my own design criteria and use these to inform my ideas when planning my own recipe, considering different ingredients. • I can demonstrate safety and hygiene when baking. • Know how to use a range of techniques including mixing, spreading, kneading and baking. **SUBJECT VOCABULARY:** Innovative, Diet, Processed, Packaging, Budget, Pitch, Design Criteria, Research, Texture, Aesthetic, Measure, Cross-contamination, adapt, budget hire, equipment, evaluation, flavour, ingredients, method, net, prototype, quantity, recipe, taget audience, unit of measurement, utilities.	**CREATE & ADAPT:** • I can prepare and cook a recipe safely and hygienically. • I can cook to a recipe and adapt it to create a new biscuit prototype. • I can work as a group to design a biscuit to a given budget. • I can create branding for my group's final product. • I can make suitable packaging for my product. **REFLECT & EVALUATE:** • I can evaluate and compare a range of biscuit prototypes. • I can articulate feedback when evaluating a peer's final product pitch. • I can identify strengths and areas for developments. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can produce market research, comparing and taste testing different biscuit products. D&C – I can follow a simple biscuit recipe and consider additional ingredients. C&A – I can choose appropriate ingredients to adapt a simple recipe, to create my own product - which meets a given design brief and budget. I can work as a group to plan and deliver a product pitch to a judging panel. R&E – I can effectively articulate the strengths of my final product and reflect on the designing and making process.*
Electrical Systems: Static Electricity **Other curriculum links*:*** *N/A* KO-DT-Y3-Static-Electricity-PRINT.pdf	**INVESTIGATE & RESEARCH*:*** • I can describe what static electricity is and how it moves objects through attraction or repulsion. • I can describe that charges can pass between objects, creating static electricity. • I know about inventors that have developed ground breaking products. • I can investigate where products were designed and made. **DISCOVER & CONNECT:** • I can generate static electricity independently. • I can use static electricity to make objects move in the way I want them to. • I can identify a design criteria and a target audience for a game. • I can design a game that works using static electricity and is aimed at my chosen target audience. **SUBJECT VOCABULARY:** Attract, Electrostatic, Electricity, Repel, Motion, Electricity, Innovative, Research, Template, Stable, component, constructive criticism, design criteria, evaluation, feedback, motion, test, target audience,	**CREATE & ADAPT:** • I can use a range of materials and equipment to safely make my game. • I can refer to my original design to accurately make my static electricity game. • I know how simple electrical circuits and components can be used to create functional products. • I know that electrical systems have an input, process and an output. **REFLECT & EVALUATE:** • I can test and document the success of my product against my design criteria. • I can explain how my game meets my design criteria. • I can consider the views of others to improve my work. • I can test and articulate feedback for a peer's game. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can experiment with how to create static electricity, using a variety of materials and techniques. D&C – I can demonstrate my understanding of static electricity by moving objects independently. I can identify a design criteria, target audience and design an appropriate game that meets them. C&A – I can use my design to build a game that successfully uses static electricity to work. R&E – I can effectively articulate the strengths of my final project and reflect on designing and making process.*

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National curriculum *links/coverage* **YEAR 5**	**Developing subject knowledge & Subject/Technical vocabulary** ***Evaluate**: investigate and analyse a range of existing products, understand how key events and individuals in design and technology have helped shape the world. **Design**: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Technical knowledge**: apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products, understand and use electrical systems in their products, apply their understanding of computing to program, monitor and control their products.*	**Application of knowledge:** ***Make**: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities* ***Evaluate:** investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world*
Textiles – Stuffed toys **Other curriculum links*:*** *Create character descriptions for their designed stuffed toys.* KO-DT-Y5-Textiles-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I can research and evaluate current stuffed toys on the market and investigate how innovative products are. • I can understand what makes a stuffed toy durable. • I can investigate and analyse why materials have been chosen. • I know about designers that have developed ground breaking products. **DISCOVER & CONNECT:** • I can identify the needs, wants and preferences of particular groups and individuals. • I can communicate my design ideas through annotated sketches. • I can accurately measure, mark out and cut a correctly proportioned paper template and cut neatly and accurately. • I can use a variety of stitches to join two pieces of fabric. • I can thread a needle. **SUBJECT VOCABULARY:** Blanket stitch, running stitch, cross stitch, applique, pattern, proportional prototypes, needle, fabric, strengthen, stiffen, reinforce, appendages, accurate, appendage, design criteria, detail, evaluation, sew, stuffed toy, stuffing, template	**CREATE & ADAPT:** • I can explain my choice of materials and components according to functional properties and aesthetic qualities. • I can create strong and secure stitches. • I can stuff my toy carefully, repairing any holes or gaps. • I can follow a design criterion. **REFLECT & EVALUATE:** • I can critically evaluate the quality of my stuffed toy, identifying if it is fit for purpose. • I can identify strengths and areas for development. • I can compare my stuffed toy to those on the market. **Assessment Evidence: *2021, 2022, 2023*** *I&R – To research and evaluate current available stuffed toys* *D&C – To understand the different aspects of stitching (stitches, needle work, cutting)* *C&A – To create a strong and secure stuffed toy that follows a design* *R&E – To evaluate different aspects of my product against research completed*
Mechanical Systems – Making a pop-up book **Other curriculum links*:*** *English - Narrative* *Maths – Measure* KOs-DT-Y5-Mechanical-Systems-WEB.pd	**INVESTIGATE & RESEARCH*:*** • I can research and evaluate current pop up books on the market. • I can talk about the difference between a 'structure' and a 'mechanism'. • I can describe how pop-up books use mechanisms to control movement. • I can investigate and analyse how products work. • I can investigate the impact products have beyond the intended purpose. **DISCOVER & CONNECT:** • I can follow instructions to create a pre-designed pop-up book, developing innovative ideas, drawing on research. • I can cut out neatly around a template. • I can identify and use materials to create mechanisms and strengthen structures in pop-up books. • I know that mechanical systems have an input, process and an output. **SUBJECT VOCABULARY:** Structure, mechanism, slider, pivot, fold, narrative, movement, design, prototype, product, stiffen, reinforce. Aesthetic, caption, design brief, design criteria, exploded-diagram, function, input, linkage, motion, output, template.	**CREATE & ADAPT:** • I can design my own 4 page narrative book template. • I can use paper, card and glue to make my book structure. • I can make slider mechanisms in my book to produce movement and explain how particular parts of the product work. • I can use pivot and fold mechanisms in my book to produce movement. **REFLECT & EVALUATE:** • I can evaluate my pop-up book against my design. • I can consider the views of others, including the intended user, to improve their work. • I can compare my pop-up book to those on the market. **Assessment Evidence: *2021, 2022, 2023*** *I&R – to research and evaluate current pop up books on the market. D&C – to understand how pop-up books use structures and mechanisms to produce movement. C&A – to design my own structures and mechanisms to produce movement in a narrative book. R&E –I can evaluate different aspects of my product against researched products.*
Food – What Could Be Healthier? **Other curriculum links*:*** KOs-DT-Y5-Food-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I know how food is processed into ingredients that can be eaten or used in cooking. (how beef gets onto supermarket shelves) • I can explain some of the animal welfare issues involved in the food industry. • I know that food is grown, reared and caught in the UK, Europe and the Wider World. **DISCOVER & CONNECT:** • I can sample current food products and identify their nutritional information from the packet. • I can make choices over personal taste and discuss why. • I can compare different food products of the same type and discuss their nutritional and taste differences. **SUBJECT VOCABULARY:** Process, industry, welfare, nutrition, taste, seasoning, salt, fat, carbohydrates, protein, sugars, recipe, fry, stir, boil. Cross-contamination, farm, method, packaging, research, welfare.	**CREATE & ADAPT:** • I can adapt a recipe in order to suit my tastes. • I can record my recipe using writing software. • Prepare and cook a savoury dish. **REFLECT & EVALUATE:** • I can evaluate my cooking against my recipe, identifying strengths and areas of developments. • I can critically evaluate the quality of the design, using the design criteria. **Assessment Evidence: *2021, 2022, 2023*** *I&R – To research and explain the process that brings food to the supermarket shelves. D&C – To sample food products and discuss their nutritional value and taste. C&A – To adapt a recipe and cook a savoury meal. R&E – To evaluate the final product against market products.*

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National curriculum *links/coverage* **YEAR 6**	**Developing subject knowledge & Subject/Technical vocabulary** ***Evaluate****: investigate and analyse a range of existing products, understand how key events and individuals in design and technology have helped shape the world.* ***Design****: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.* ***Technical knowledge****: apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products, understand and use electrical systems in their products, apply their understanding of computing to program, monitor and control their products.*	**Application of knowledge:** ***Make****: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities* ***Evaluate:*** *investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world*
Mechanisms- Playgrounds **Other curriculum links*:*** KO-DT-Y6-Playgrounds-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I can research and identify different types of structures used in playground apparatus. • I can investigate how sustainable the materials of products are. • I can investigate and analyse how well products meet users needs and wants. • I know about engineers that have developed ground breaking products. **DISCOVER & CONNECT:** • I know that structures can be strengthened by manipulating materials and shapes. • I can consider the surrounding environment of my playground, indicating the design features that will appeal to intended users. • I can design five different apparatus using three different structures. (model their ideas using prototypes) • I can improve my design based on peer evaluation. **SUBJECT VOCABULARY:** Cladding, structures, durability, stability, construction, aesthetics, panels, base, joints, apparatus, bench hook, coping saw, dowel, jelutong, mark out, modify, natural materials, plan view, playground, prototype, reinforce, structure, tenon saw, user, vice.	**CREATE & ADAPT:** • I can build play apparatus structures using the techniques demonstrated as well as prior knowledge of structures. • I can measure, mark, cut and shape wood to create a range of structures. • I can create landscape features and apparatus decorations using a range of materials. • I can explain my choice of materials and components according to functional properties and aesthetic qualities. • I know how mechanical systems such as cams, pulleys or gears can create movement. **REFLECT & EVALUATE:** • I can evaluate the stability of my structure and compare it to existing structures. • I can evaluate the durability of the materials which I used and compare them to materials used in existing structures. • I can critically reflect the manufacture of my products and how my structure could be improved. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can identify what makes a successful playground structure D&C – I can design a playground structure using appropriate materials C&A – I can create a stable and durable playground structure and surrounding landscape R&E – I can evaluate the success of my structure and consider through research ways to improve it*
Electrical Systems – Greeting Cards **Other curriculum links*:*** *Science- electrical circuits* KO-Y5-Electrical-Systems-Cards-v2.pdf	**INVESTIGATE & RESEARCH*:*** • I can research and name key circuit components used to create a functioning circuit. • I know about manufactures that have developed ground breaking products. • I can research and identify suitable conductors for my electrical circuit. • I can investigate and analyse how well products achieve their purpose. • I can research and identify what makes a successful greetings card design and know how much it costs to make. **DISCOVER & CONNECT:** • I can design a card with a working circuit with no breaks. • I can map out where different components of my circuit will go. • I can refer to a design to keep my ideas focused. • I know that electrical systems have an input, process and an output. **SUBJECT VOCABULARY:** LED (light-emitting diode), circuit, component, graphite, conductor, insulator, aesthetics, functioning, positive leg, negative leg, battery, buzzer, copper, design, design criteria, function, innovative, modify, parallel circuit, series circuit, switch, target audience, test, wire.	**CREATE & ADAPT:** • I can select tools and equipment suitable for the task and create the front cover for a greetings card. • I can lay copper tape down in straight lines and ensure corners are never broken. • I can label the LEDs with positive and negative legs (the positive leg of the LED branches towards the positive side of the battery). • I know how more complex electrical circuits and components can be used to create functional products. **REFLECT & EVALUATE:** • I can make comparisons between my original design and final product and evaluate any modifications made. • I can evaluate the reliability and aesthetic success of my product. • I can reflect upon and research how my card could be improved. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can identify key components of a functioning electrical circuit (Inc. LED) D&C – I can design the front cover of a greetings card and map out the inner circuit C&A –I can create an LED greetings card with a functioning circuit R&E – I can evaluate the success of my product and consider through research ways to improve it*
Food – come Dine with me **Other curriculum links*:*** *History- Ancient Greece* KO-DT-Y6-Come-dine-with-me-WEB.pdf	**INVESTIGATE & RESEARCH*:*** • I can research which ingredients and courses complement one another and that seasons may affect the food available. • I know about manufactures that have developed ground breaking products. • I know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health. • I can investigate and analyse a range of existing products, using surveys, interviews, questionnaires and web-based resources. **DISCOVER & CONNECT:** • I can describe the process of 'Farm to Fork' for a given ingredient using a storyboard. • I can list the ingredients I need for my chosen recipe. • I can read the method and make a list of all of the equipment I need for my chosen recipe. **SUBJECT VOCABULARY:** Recipe, ingredients, complementary, 'farm to fork', imperative language, quantity, preparation, method, accompaniment, cookbook, cross contamination, equipment, farm, flavour, imperative verb, ingredients, method, nationally, preparation, processed, reared, target audience, unit of measurement.	**CREATE & ADAPT:** • I can follow procedures for safety and hygiene when preparing ingredients and following a recipe safely and sensibly. • I can prepare a dish using the correct and most efficient methods. • I can contribute an attractive and easily understood recipe page to a class cookbook using imperative verbs, adjectives and illustrations. **REFLECT & EVALUATE:** • I can evaluate how closely and successfully I followed a recipe. • I can evaluate whether my ingredients complemented each other. • I can consider the views of others, including the intended user, to improve their work. • I can reflect upon methods or ingredients which could be changed in order to improve my recipe. **Assessment Evidence: *2021, 2022, 2023*** *I&R – I can understand how to create a balanced, easy to follow recipe D&C – I can create a list of ingredients and a recipe for my dish C&A – I can prepare ingredients and follow a recipe correctly R&E – I can evaluate the success of my product and consider through research ways to improve it*

End Points in Learning in the Design and Technology Curriculum – Key Stage

	INVESTIGATE & RESEARCH	DISCOVER & CONNECT	CREATE & ADAPT	REFLECT & EVALUATE
Year 1	**Food – Fruit and Vegetables** • I can identify and name a variety of fruit and vegetables. • I can determine if something is a fruit or a vegetable and classify them. **Mechanisms- Wheels and Axles** • I can explore existing products and identify who they are for. • I can identify what mechanism makes a toy or vehicle roll forwards. • I can understand the movement of mechanisms (wheels and axels - in order for a wheel to move it must be attached to an axle) **Structures – Baby Bear's Chair** • I can identify natural and man-made structures. • I can look at existing products, know how and where they are used. • I can explore the stability of shapes and structures and understand that the shape of the structure affects its strength.	**Food – Fruit and Vegetables** • I can explain that fruits and vegetables grow in one of three places: -on trees or vines, above the ground or below the ground. • I can explain that we eat different parts of plants and to be able to give examples. **Mechanisms- Wheels and Axles** • I can explore existing products and identify who they are for. • I can identify what mechanism makes a toy or vehicle roll forwards. • I can understand the movement of mechanisms (wheels and axels - in order for a wheel to move it must be attached to an axle) **Structures – Baby Bear's Chair** • I can identify natural and man-made structures. • I can look at existing products, know how and where they are used. • I can explore the stability of shapes and structures and understand that the shape of the structure affects its strength.	**Food – Fruit and Vegetables** • I can taste fruits and vegetables and describe their: - Appearance/feel - Smell – Taste. • I can follow procedures for safety and hygiene. • I can cut and peel fruit and vegetables to make a smoothie. **Mechanisms- Wheels and Axles** • I can select from a range of tools and equipment. • I can make a moving vehicle which works (wheels move correctly). **Structures – Baby Bear's Chair** • I can assemble, join and combine materials to make a structure according to the design criteria. • I can ensure my structure is strong, stiff and stable. • I know how to create joints and structures from paper/card and tape.	**Food – Fruit and Vegetables** • I can talk about my design idea and the smoothie that I made. • I can describe what I found hard. **Mechanisms- Wheels and Axles** • I can evaluate my design to make it even better. • I can explain how my model works or explain what must be changed so that the vehicle can work. **Structures – Baby Bear's Chair** • I can make simple judgements about my structure according to the design criteria. • I can evaluate the strength, stiffness and stability of the finished structure.
Year 2	**Food- A Balanced Diet** • I can name and sort foods into the five food groups and know how much of each group I should eat each day (including 5 portions or fruit + veg). • I understand where food comes from and that all food needs to be farmed, grown elsewhere or caught. • I can explore a range of existing products and know how to experience food through touch and smell. **Structures- Constructing a Windmill** • Explore and evaluate a range of existing products. • I know what a windmill is, what windmills are for and how they work. • I understand that windmill turbines use wind to turn and make the machines inside work. I know that axles are used in structures and mechanisms to make parts turn in a circle. **Textiles: Pouches** • I can look at a range of products. Understand how they were made and what material they are made from. • I can compare pouches and their designs, stating what I like and dislike.	**Food- A Balanced Diet** • I can locate where the nutritional information is packets/containers. • I know what 'hidden sugars' are and can identify what products we find them in. • I can design a wrap pizza based on a balanced diet. **Structures- Constructing a Windmill** • I understand the importance of a clear design criteria and use this to develop ideas. • I understand what stable means and can ensure my structure has this property. I can understand how my structure can be made stronger, stiffer and more stable. • I can explain what product I am designing and making. **Textiles: Pouches** • I can thread a needle, sew a running stitch and use neat and evenly spaced stitches to join fabric. • I can design a pouch with decorations, using knowledge of existing products. • I can say if my product is for myself or another user and what my product will be used for.	**Food- A Balanced Diet** • I can follow procedures for safety and hygiene. • I can slice food safely using the bridge or claw grip and use techniques such as grating. • I can create a wrap including ingredients from all the food groups. **Structures- Constructing a Windmill** • I can select from a range of tools and equipment. • I can follow instructions to cut and assemble the supporting structure of my windmill. • I can cut and assemble my turbine correctly, attach my turbine to the axle and attach them to the structure of my windmill. **Textiles: Pouches** • I can measure, mark out and cut fabric neatly. • I can prepare a thread and sew neatly. • I can select from a range of materials and components according to their characteristics. • I can use finishing techniques to decorate fabric using different items and join these appropriately.	**Food- A Balanced Diet** • I can talk about my design and what I have made. • I can review my design and suggest how I could improve my wrap. **Structures- Constructing a Windmill** • I can evaluate and make simple judgements about the windmill according to the design criteria. • I can test whether my structure is strong and stable and reinforce it if necessary. • I can test whether my turbine turns freely in the wind. **Textiles: Pouches** • I can evaluate my ideas and products against the design criteria. • I can say how my product could be improved.

End Points in Learning in the Design and Technology Curriculum – Lower Key Stage 2

	INVESTIGATE & RESEARCH	DISCOVER & CONNECT	CREATE & ADAPT	REFLECT & EVALUATE
Year 3	**Textiles - Christmas Cushions** • I can discuss what textiles are, what their purpose is and research and evaluate current cushions on the market. • I can consider what a cushion is used for and where they might find them. • I can reflect on techniques used and understand why some products are turned inside out after sewing. • I can understand what makes a cushion durable and aesthetically pleasing. • I can investigate whether products can be recycled or reused. • I can investigate and analyse how well current cushions on the market have been designed and made. **Food – Eating seasonally** • I know that a healthy diet is made up from a variety and balance of food and drink (Eatwell Plate) • I know that not all fruits and vegetables can be grown in the UK and that each country has its own climate • I know about chefs that have developed ground breaking products. • I know that food is grown, reared and caught in the UK, Europe and the Wider World. (could discuss impact on the environment) **Mechanical systems - Making a Sling Shot Car** • I understand that car designs have developed over many years and can investigate when products were designed and made. • I know that all moving things have kinetic energy and this is the energy that something (an object or person) has by being in motion, eg: the energy that a swing has to keep on moving; I can gather information about the needs and wants of particular individuals or groups.	**Textiles - Christmas Cushions** • I can thread the needle and tie a knot independently. • I can experiment using cross stitch, applique and other stitches to join fabric together. • I can sew consistently sized stiches. • I can design a cushion that is aesthetically pleasing, following the design criteria. **Food – Eating seasonally** • I know how to prepare myself and a kitchen to cook in. • I know the basic rules of food contamination. • I can use, store and clean a knife safely. • I can follow a range of simple recipes to make a sample of seasonal dishes. **Mechanical systems - Making a Sling Shot Car** • I can describe the purpose of my product and know that a chassis is the frame of a car on which everything else is built. • I can generate realistic ideas, focusing on the need of the user. • I can select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • I understand how to strengthen, stiffen and reinforce more complex structures.	**Textiles - Christmas Cushions** • I can select materials and components suitable for the task. • I can use a paper template and cut fabric accurately, following the design criteria. • I can use applique and use a selection of stiches to join fabrics and leave space for a seam. **Food – Eating seasonally** • I can consider hygiene when preparing food and can use cooking equipment safely. • I know what foods are currently in season and am aware that each fruit and vegetable gives us nutritional benefits. • I can design a filo tart using seasonal vegetables and describe the benefits of its ingredients. **Mechanical systems - Making a Sling Shot Car** • I can design a suitable car body to cover my chassis by drawing a net to create a structure from, choosing shapes that increase or decrease the speed of the car as a result of air resistance, adding graphics to personalise my design using research from existing designs.	**Textiles - Christmas Cushions** • I can evaluate my cushion against given success criteria. • I can compare my cushion to others already on the market. • I can identify something I have found hard. **Food – Eating seasonally** • I can evaluate the success of my tart through discussion, identifying strengths and areas for developments: • Did it taste as they expected? • Does it look appetising? • Does it reflect a balanced diet? **Mechanical systems - Making a Sling Shot Car** • I can evaluate the speed of my design based on the understanding that some cars are faster than others as a result of: body shape, stored energy in the elastic band, accuracy of the angle in the chassis and axel.
Year 4	**Structures – Pavilions** • I can explain what world expos and pavilions are and discuss their purpose • I can name a famous pavilion and investigate and analyse who designed and made it. • I can explain what cladding is and what effects it can achieve • I can investigate and analyse what methods of construction have been chosen. **Food – Adapting a Recipe** • I can consider safety and hygiene when baking. • I can evaluate a product by carrying out a taste test on a variety of biscuits. • I can research and compare different products' packaging and target audience. • I know that to be healthy and active, food and drink are needed to provide energy. **Electrical Systems – Static Electricity** • I can describe what static electricity is and how it moves objects through attraction or repulsion. • I can describe that charges can pass between objects, creating static electricity. • I know about inventors that have developed ground breaking products. • I can investigate where products were designed and made.	**Structures – Pavilions** • I can make a variety of different frame structures using different materials to create different effects. • I can design a structure that is stable and aesthetically pleasing, sharing and clarifying ideas through discussions. • I can share my ideas through annotated sketches. • I understand how to make a stable structure. • I can select appropriate materials for my cladding. **Food – Adapting a Recipe** • I can follow a basic biscuit recipe using techniques such as creaming, sieving and the rubbing method. • I can develop my own design criteria and use these to inform my ideas when planning my own recipe, considering different ingredients. • I can demonstrate safety and hygiene when baking. • Know how to use a range of techniques including mixing, spreading, kneading and baking. **Electrical Systems – Static Electricity** • I can generate static electricity independently. • I can use static electricity to make objects move in the way I want them to. • I can identify a design criteria and a target audience for a game. • I can design a game that works using static electricity and is aimed at my chosen target audience.	**Structures – Pavilions** • I can select suitable tools and equipment to build a free-standing structure. • I can select appropriate materials to build a strong structure. • I refer to my design sheet to create my pavilion. • I can add cladding which reflects my design. **Food – Adapting a Recipe** • I can prepare and cook a recipe safely and hygienically. • I can cook to a recipe and adapt it to create a new biscuit prototype. • I can work as a group to design a biscuit to a given budget. • I can create branding for my group's final product. • I can make suitable packaging for my product. **Electrical Systems – Static Electricity** • I can use a range of materials and equipment to safely make my game. • I can refer to my original design to accurately make my static electricity game. • I know how simple electrical circuits and components can be used to create functional products. • I know that electrical systems have an input, process and an output.	**Structures – Pavilions** • I can articulate feedback when evaluating a peer's structure. • I can compare my final structure to my design sheet. • I can discuss what went well, what was difficult and what didn't go to plan. **Food – Adapting a Recipe** • I can evaluate and compare a range of biscuit prototypes. • I can articulate feedback when evaluating a peer's final product pitch. • I can identify strengths and areas for developments. **Electrical Systems – Static Electricity** • I can test and document the success of my product against my design criteria. • I can explain how my game meets my design criteria. • I can consider the views of others to improve my work. • I can test and articulate feedback for a peer's game.

End Points in Learning in the Design and Technology Curriculum – Upper Key Stage 2

	INVESTIGATE & RESEARCH	DISCOVER & CONNECT	CREATE & ADAPT	REFLECT & EVALUATE
Year 5	**Textiles – Stuffed Toys** • I can research and evaluate current stuffed toys on the market and investigate how innovative products are. • I can understand what makes a stuffed toy durable. • I can investigate and analyse why materials have been chosen. • I know about designers that have developed ground breaking products. **Mechanical Systems – Making a pop-up book** • I can research and evaluate current pop up books on the market. • I can talk about the difference between a 'structure' and a 'mechanism'. • I can describe how pop-up books use mechanisms to control movement. • I can investigate and analyse how products work. • I can investigate the impact products have beyond the intended purpose. **Food - What could be Healthier?** • I know how food is processed into ingredients that can be eaten or used in cooking. (how beef gets onto supermarket shelves) • I can explain some of the animal welfare issues involved in the food industry. • I know that food is grown, reared and caught in the UK, Europe and the Wider World.	**Textiles – Stuffed Toys** • I can research and evaluate current stuffed toys on the market and investigate how innovative products are. • I can understand what makes a stuffed toy durable. • I can investigate and analyse why materials have been chosen. • I know about designers that have developed ground breaking products. **Mechanical Systems – Making a pop-up book** • I can follow instructions to create a pre-designed pop-up book, developing innovative ideas, drawing on research. • I can cut out neatly around a template. • I can identify and use materials to create mechanisms and strengthen structures in pop-up books. • I know that mechanical systems have an input, process and an output. **Food - What could be Healthier?** • I can sample current food products and identify their nutritional information from the packet. • I can make choices over personal taste and discuss why. • I can compare different food products of the same type and discuss their nutritional and taste differences.	**Textiles – Stuffed Toys** • I can explain my choice of materials and components according to functional properties and aesthetic qualities. • I can create strong and secure stitches. • I can stuff my toy carefully, repairing any holes or gaps. • I can follow a design criterion. **Mechanical Systems – Making a pop-up book** • I can design my own 4 page narrative book template. • I can use paper, card and glue to make my book structure. • I can make slider mechanisms in my book to produce movement and explain how particular parts of the product work. • I can use pivot and fold mechanisms in my book to produce movement. **Food - What could be Healthier?** • I can adapt a recipe in order to suit my tastes. • I can record my recipe using writing software. • Prepare and cook a savoury dish.	**Textiles – Stuffed Toys** • I can critically evaluate the quality of my stuffed toy, identifying if it is fit for purpose. • I can identify strengths and areas for development. • I can compare my stuffed toy to those on the market. **Mechanical Systems – Making a pop-up book** • I can evaluate my pop-up book against my design. • I can consider the views of others, including the intended user, to improve their work. • I can compare my pop-up book to those on the market. **Food - What could be Healthier?** • I can evaluate my cooking against my recipe, identifying strengths and areas of developments. • I can critically evaluate the quality of the design, using the design criteria.
Year 6	**Structures – Playgrounds** • I can research and identify different types of structures used in playground apparatus. • I can investigate how sustainable the materials of products are. • I can investigate and analyse how well products meet users needs and wants. • I know about engineers that have developed ground breaking products. **Electrical Systems – Electronic Greeting Cards** • I can research and name key circuit components used to create a functioning circuit. • I know about manufactures that have developed ground breaking products. • I can research and identify suitable conductors for my electrical circuit. • I can investigate and analyse how well products achieve their purpose. • I can research and identify what makes a successful greetings card design and know how much it costs to make. **Food – come Dine with me** • I can research which ingredients and courses complement one another and that seasons may affect the food available. • I know about manufactures that have developed ground breaking products. • I know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health. • I can investigate and analyse a range of existing products, using surveys, interviews, questionnaires and web-based resources.	**Structures – Playgrounds** • I know that structures can be strengthened by manipulating materials and shapes. • I can consider the surrounding environment of my playground, indicating the design features that will appeal to intended users. • I can design five different apparatus using three different structures. (model their ideas using prototypes) • I can improve my design based on peer evaluation. **Electrical Systems – Electronic Greeting Cards** • I can design a card with a working circuit with no breaks. • I can map out where different components of my circuit will go. • I can refer to a design to keep my ideas focused. • I know that electrical systems have an input, process and an output. **Food – come Dine with me** • I can describe the process of 'Farm to Fork' for a given ingredient using a storyboard. • I can list the ingredients I need for my chosen recipe. • I can read the method and make a list of all of the equipment I need for my chosen recipe.	**Structures – Playgrounds** • I can build play apparatus structures using the techniques demonstrated as well as prior knowledge of structures. • I can measure, mark, cut and shape wood to create a range of structures. • I can create landscape features and apparatus decorations using a range of materials. • I can explain my choice of materials and components according to functional properties and aesthetic qualities. • I know how mechanical systems such as cams, pulleys or gears can create movement. **Electrical Systems – Electronic Greeting Cards** • I can select tools and equipment suitable for the task and create the front cover for a greetings card. • I can lay copper tape down in straight lines and ensure corners are never broken. • I can label the LEDs with positive and negative legs (the positive leg of the LED branches towards the positive side of the battery). • I know how more complex electrical circuits and components can be used to create functional products. **Food – come Dine with me** • I can follow procedures for safety and hygiene when preparing ingredients and following a recipe safely and sensibly. • I can prepare a dish using the correct and most efficient methods. • I can contribute an attractive and easily understood recipe page to a class cookbook using imperative verbs, adjectives and illustrations.	**Structures – Playgrounds** • I can evaluate the stability of my structure and compare it to existing structures. • I can evaluate the durability of the materials which I used and compare them to materials used in existing structures. • I can critically reflect the manufacture of my products and how my structure could be improved. **Electrical Systems – Electronic Greeting Cards** • I can make comparisons between my original design and final product and evaluate any modifications made. • I can evaluate the reliability and aesthetic success of my product. • I can reflect upon and research how my card could be improved. **Food – come Dine with me** • I can evaluate how closely and successfully I followed a recipe. • I can evaluate whether my ingredients complemented each other. • I can consider the views of others, including the intended user, to improve their work. • I can reflect upon methods or ingredients which could be changed in order to improve my recipe.