New Earswick Primary School

# Design and Technology Curriculum

**Design Technology for the pupils of New Earswick Primary School**

Our DT curriculum is designed to allow pupils to solve real and relevant problems. Some DT teaching is discrete whilst other lessons follow the school topic. Each unit follows the 4 substantive concepts: Design, make, evaluate and technical knowledge

**Skills**

We have designed a progression of skills to allow our pupils to become proficient in:

*Apply knowledge*
*Build understanding*
*Make high quality prototypes and products*
*Critique and evaluate*
*Cooking and nutrition*

**Barriers**

Stakeholders have identified that our pupils lack confidence and life experiences. We have a current school focus on cooking and nutrition so that our pupils learn how to care for themselves when they leave home.

## Whole School Topic: Cooking and nutrition

| Nursery | EYFS | Year 1 | Year 2 |
|---|---|---|---|
| • Workshop<br>• Cooking<br>• Role Play | • Workshop<br>• Tinker table<br>• Dough<br>• Cooking | Cooking and nutrition:<br>• **Know** the basic principles for a healthy diet.<br>• Know where some food comes from.<br>• Cooking hygiene. | Cooking and nutrition:<br>• Know the advantages of fruit and vegetables and a varied diet for health.<br>• Know where foods come from (further away vs local). |
| **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Cooking and nutrition:<br>• **Apply** the principles of a varied and healthy diet. | Cooking and nutrition:<br>• Prepare and cook a variety of dishes. | Cooking and nutrition:<br>• Plan, prepare and cook a variety of savoury dishes **using a range of techniques** (predominantly) | Cooking and nutrition:<br>• Know the seasonality of ingredients, including origin. **(Grown, reared, caught or processed)** |

## National Curriculum Coverage

### Early Years

**Physical Development**
- Use a range of tools competently, safely and confidently.
- Know and talk about factors that support overall health and wellbeing.

**Expressive Art and Design**
- Return to and build on previous learning, refining ideas.
- Create collaboratively sharing ideas, resources and skills.

### Key Stage 1

**Design**
- Year 1 Space Buggies – axels and wheels.
- Year 2 Sliders
- Year 2 Product for home, garden or community.

**Make**
- Year 1 Bog Babies – sewing
- Year 2 Sliders
- Year 2 Product for home, garden or community.

**Evaluate**
- Year 1 Bog Babies – sewing
- Year 2 Sliders
- Year 2 Product for home, garden or community.

**Technical Knowledge**
- Year 2 Sliders - Sliders
- Year 2 Product for home, garden or community.

### Key Stage 2

**Design**
- Cooking and nutrition for all year groups.
- Year 3 Egyptians – pulleys.
- Year 3 Volcano – 3D design
- Year 4 Expeditions – simple torches
- Year 5 Saxon – weaving and sewing
- Year 6 Titanic – CAD room design
- Year 6 – War time meal

**Make**
- Year 4 Game – Marble Maze
- Year 5 Saxon – weaving and sewing
- Year 6 Titanic – CAD room design
- Year 6 Titanic – Circuits, buzzers, bulbs and motors.

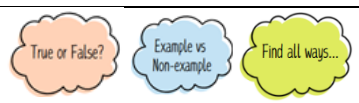
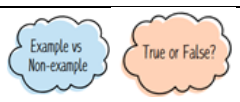
**Evaluate**
- Year 4 Game – Marble Maze

**Technical Knowledge**
- Cooking and nutrition for all year groups.
- Year 5 Topography – stiffen, strengthen, reinforce
- Year 6 War time meal prep

## Skills Progression

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|
| **Design** | • I can create a simple design for my product that is functional and appealing to myself and others.<br>• I can use words and pictures to describe what I want to do.<br>• I can talk about my design. **Describing what I want to do.**<br>• I can use a computer program (2 design and make) to design a product. **(ipads)** | • I can create a simple design for my product that is purposeful, functional and appealing to myself and others based on design criteria given.<br>• I can generate, develop, model and communicate my ideas through talking drawing, templates and mock ups **and planning.**<br>• I can research my ideas using ICT. | • I can use my knowledge of existing products to design my own functional product.<br>• I can create designs using annotated sketches and prototypes.<br>• I can talk about my design and discuss how it might change from my original idea after research and prototypes **making a note of steps and order.**<br>• **I can explore CAD- 3D printing as an alternative to building.** | • I can use my knowledge of existing products to design a functional and appealing product for a particular purpose and audience.<br>• I can create designs using annotated sketches, exploded diagrams and pattern pieces.<br>• I can research and develop my design from a given design criteria **including what wouldn't work/ don't like.** | • I can use my research into existing products to inform the design of my own innovative product.<br>• I can create designs using annotated sketches and cross sectional designs and pattern pieces. | • I can generate, develop, model and communicate my ideas through discussion, annotated sketches, exploded diagrams and through prototypes and computer aided design. **CAD design/ computer generated design programs etc** |
| **Make** | • I can select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.<br>• **I can make a list of what materials and tools I will need.** | • I can choose tools I would like to use and select materials based on my knowledge of their properties.<br>• I can safely measure, mark out, cut and shape materials and components using a range of tools. | • I can safely measure, mark out, cut assemble and join with some accuracy.<br>• I can make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. | • I can use techniques which require more accuracy to cut, shape, join and finish my work.<br>• I can use my knowledge of techniques and the functional and aesthetic qualities of a wide range of materials and plan how to use them. | • I can make careful and precise measurements so that joins, holes and openings are in exactly the right place.<br>• I can produce step by step plans to guide my making, demonstrating that I can apply my knowledge of different materials, tools and techniques. | • I can use my technical knowledge and accurate skills to problem solve during the making process.<br>• I can apply my knowledge of material and techniques to refine and rework my product to improve its functional properties and aesthetic qualities. |
| **Evaluate** | • I can ask simple questions about existing products and those that I have made. | • I can evaluate and assess existing products and that that I have made using a design criteria.<br>• I can state what I like and dislike about my product. | • I can investigate and analyse existing products and those I have made, considering a wide range of factors **and or a given criteria.**<br>• I can talk about how I would improve my product if I was to make it again. | • I can investigate and analyse a range of existing products and explain how they will help to develop my design.<br>• I can consider how existing products and my own finished products might be improved and how well they meet the needs of the intended user. | • I can make detailed evaluations about existing products and my own considering the views of others to improve my work. **Remarking on the skills used: Eg. Joins, strength, flexibility** | • I understand how key events and individuals in design and technology have helped shape the world. |
| **Technical knowledge** | • I can build structures, exploring how they can be made stronger, stiffer and more stable.<br>• I can use wheels and axles in a product.<br>• I know basic cooking hygiene, the basic principles of healthy eating and where some food comes from. | • I can explore and use mechanisms such as levers, sliders and wheels in products.<br>• I can investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable.<br>• I **Know** the advantages of fruit and vegetables and a varied diet for a healthy diet<br>• Know where foods come from (further away v local) | • I can investigate different techniques for stiffening, strengthening and reinforcing more complex structures **and alter and adapt.**<br>• **I can apply** the principles of healthy and varied diets | • I can understand and use electrical systems in my products.<br>• I can understand how to use more complex mechanical systems.<br>• Prepare and cook a variety of savoury dishes (predominantly) | • I can apply techniques I have learnt to strengthen structures and explore my own ideas.<br>• I can **plan**, prepare and cook a variety of savoury dishes **using a range of techniques** (predominantly) | • I can build more complex 3D structures and apply my knowledge of strengthening techniques to make them stronger and more stable.<br>• I can understand how to use more complex electrical systems.<br>• I can apply my understanding of computer programs to monitor and control my product.<br>• I understand seasonality of ingredients including origin **(grown, reared, caught or processed)** |

# YEAR 1

| | Autumn 2 | Spring 2 | Summer 2 |
|---|---|---|---|
| | Year 1<br>Moon Buggies | Year 1<br>Bog Baby | Year 1<br>Baking |
| **National Curriculum** | Design, make, evaluate- vehicle with wheels and axles | Design, make, evaluate- sewn toy | Design and make a savoury snack |
| | **Skills progression and assessment** | | |
| **Design** | I can create a simple design for my product that is functional and appealing to myself and others.<br>I can use words and pictures to describe what I want to do.<br>I can talk about my design. Describing what I want to do.<br>I can use a computer program (2 design and make) to design a product. (iPads) | • I can create a simple design for my product that is functional and appealing to myself and others.<br>• I can use words and pictures to describe what I want to do.<br>• I can talk about my design. Describing what I want to do. | • I can create a simple design for my product that is functional and appealing to myself and others.<br>• I can use words and pictures to describe what I want to do.<br>• I can talk about my design. Describing what I want to do. |
| **Make** | • I can select from and use a range of tools and equipment to perform practical tasks e.g.<br>• cutting, shaping, joining and finishing.<br>• I can make a list of what materials and tools I will need. | • I can select from and use a range of tools and equipment to perform practical tasks e.g.<br>• cutting, shaping, joining and finishing.<br>• I can make a list of what materials and tools I will need. | • I can select from and use a range of tools and equipment to perform practical tasks e.g. weighing, measuring, rolling, cutting, grating<br>• I can make a list of what ingredients and tools I will need (and follow a simple recipe). |
| **Evaluate** | • I can ask simple questions about existing products and those that I have made | • I can ask simple questions about products that I have made. | • I can ask simple questions about existing products and those that I have made. |
| **Technical Knowledge** | • I can build structures, exploring how they can be made stronger, stiffer and more stable.<br>• I can use wheels and axles in a product. | • I can build structures and know that there are alternatives to glue. | • I know basic cooking hygiene, the basic principles of healthy eating and where some food comes from. |
| **Tasks** | **Design:**<br>• **Use a design sheet to design a space buggy**<br>**Make:**<br>• Use the construction table to build axles with different wheels<br>• Build several frames for a buggy, selecting from given materials to find the strongest<br>**Evaluate:**<br>• Explore a variety of wheels- which would be good for…<br>**Technical knowledge:**<br>• Match pictures of different buggy designs to labels<br>• Find featured you like on buggy designs<br>• Follow the design sheet to make a buggy<br>**Examples of Work**<br> | **Design:**<br>• Use a design sheet to design a bog baby and or mini beasts<br>• Note key parts/ features<br>**Make:**<br>• Explore stitching around complex practise shapes<br>**Evaluate:**<br>• Investigate a range of toys and how they are made including some handmade toys<br>• Follow the design sheet to evaluate own product<br>**Technical knowledge:**<br>• Practise threading a needle<br>• Practise tying a knot in thread<br>• Learn the different basic stitches: running, cross (with support) and blanket (with support)<br>**Examples of Work**<br> | **Design:**<br>• Make a savoury treat<br>• Using knowledge of the savoury recipe, plan and make own savoury product by varying ingredients<br>• Follow the design sheet to evaluate own product<br>**Make:**<br>• Explore what a recipe it and practise weighing and measuring<br>• Using a basic recipe, bake or cook a savoury product<br>**Evaluate:**<br>• Compare a range of shop bought products of the same type and evaluate<br>**Technical knowledge:**<br>• Learn how to work hygienically<br>**Examples of Work**<br> |
| **Vocabulary 'Juicy Jargon'** | Wheels<br>Axles<br>Design<br>Plan<br>Measure<br>Make<br>Decorate<br>Stronger<br>Stiffer<br>Join<br>Fix<br>cut<br><br>Space<br>Vehicle<br>Buggy<br>Wheels<br>Journey<br>Travel<br><br>Make<br>Down<br>Much<br>Off<br>Made<br>First<br>Then<br>Two<br>Did<br>your | Needle<br>Thread<br>Knot<br>Line<br>Stitch<br>Cross stich<br>Running stitch<br>Blanket stitch<br>Outline<br>Pattern<br>Fix<br>join<br><br>Character<br>Toy<br>Stuffing<br>Features<br>Face<br>Eyes<br>Nose<br>Mouth<br>Ears<br>Bog<br>Water<br>Features<br>parts<br><br>Of<br>Put<br>Push<br>Pull<br>Could<br>Break<br>pin | Recipe<br>Ingredients<br>Mix<br>Measure<br>Grams<br>Method<br>Cook<br>Bake<br>Oven<br>degrees<br><br>Food<br>Vegetables<br>Fruit<br>Healthy<br>Diet<br>Cook<br>eat<br><br>Once<br>Put<br>You<br>Floor<br>Hold<br>After<br>Last<br>Again<br>Half<br>Sugar<br>Make |
| | **Links to learning and assessment points** | | |
| **Outcomes: DT knowledge** | • Know that you need an equipment list to make a product<br>• Know that it is better to plan a design first<br>• Know how to make a frame stronger (preparing for Y2 Castles)<br>• Understand that axles allow wheels to turn | • Know how to thread and knot a needle and thread<br>• Know that you need a back and a front to form a simple pattern<br>• Know that pins can hold a pattern in place<br>• Know that you can make different stitches<br>• Understand that sewing can be used to fix materials rather than gluing | • Know that surfaces and hands must be clean before cooking<br>• Know that long hair should be tied back<br>• Understand what makes food savoury<br>• Know that you can change a recipe and it will change the taste/ look of the product<br>• know that you need to measure your ingredients |
| **Challenge Examples** |  | |  |
| **SEND Differentiation Examples** | • Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Physical Resourcing (range of stencils, pencil grips, thicker pencils)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then | • Simplify Juicy Jargon<br>• Repeating content (extending the journey before moving on)<br>• Physical Resourcing (larger needles)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then | • Simplify Juicy Jargon<br>• Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then |
| **Previous** ← | EYFS<br>• Return to and build on previous learning, refining ideas | EYFS:<br>• Use a range of tools competently, safely and confidently | EYFS:<br>• Know and talk about factors that support overall health and wellbeing |

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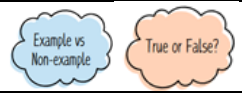
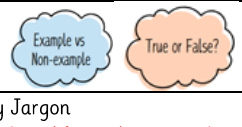
| **Next** | YEAR 2<br>• Build onto levers and sliders).<br>YEAR 4<br>• Pulleys (builds on movement with axels to pulleys combined with axels)<br>YEAR 5<br>• Topography- alternative ways to fix and shape materials | YEAR 5<br>• Viking sewing and weaving<br>• Multimedia portraits<br>Year 6<br>• Art (nail art) | YEAR 2<br>• Varied diets- fruit and veg<br>YEAR 3<br>• Healthy meals and snacks<br>YEAR 4<br>• Variety of savoury dishes (pastry, pasta and potatoes)<br>YEAR 5<br>• Iraq Cooking<br>YEAR 6<br>• (Pair with Y1 in Pay it Forward) biscuits<br>• Trench food/ war tea dance<br>• Seasonal celebration |

# YEAR 2

| | Autumn 2 | Spring 1 | Summer 2 |
|---|---|---|---|
| | Year 2<br>Cooking and nutrition<br>Healthy meals: Fruit and Vegetables<br>'Stone Age Scavenge' | Year 2<br>Moving Pictures - Sliders<br>Florence Nightingale/Dragons | Year 2<br>A product for home, garden, class<br>'Edible Plants'<br>*May require pre planting in Forest School |
| **National Curriculum** | Design and make: cooking/ meals<br>(Know the advantages of fruit and vegetables and where foods come from) | Design, make, evaluate | Design and make: cooking/ meals<br>(Know the advantages of fruit and vegetables and where foods come from) |
| | **Skills progression and assessment** | | |
| **Design** | • I can research my ideas using ICT. | • I can create a simple design for my product that is purposeful and functional based on design criteria given.<br>• I can generate, develop, model and communicate my ideas through talking drawing, templates and mock ups and planning.<br>• I can research my ideas. | • I can research my ideas using ICT. |
| **Make** | • I can choose tools I would like to use: cutting, rolling, cooking, stirring, measuring etc. | • I can choose tools I would like to use and select materials based on my knowledge of their properties.<br>• I can safely measure, mark out, cut and shape materials and components using a range of tools. | • I can choose tools I would like to use: cutting, rolling, cooking, stirring, measuring etc. |
| **Evaluate** | • I can evaluate and assess existing products and that that I have made using a design criterion.<br>• I can state what I like and dislike about my product. | • I can evaluate and assess existing products and that that I have made using a design criterion.<br>• I can state what I like and dislike about my product. | • I can evaluate and assess existing products and that that I have made using a design criterion.<br>• I can state what I like and dislike about my product. |
| **Technical Knowledge** | • I Know the advantages of fruit and vegetables and a varied diet for a healthy diet<br>• Know where foods come from (further away v local) | • I can explore and use mechanisms such as, sliders.<br>• I can investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable. | • I know the advantages of fruit and vegetables and a varied diet for a healthy diet<br>• I know different parts of the plants that we eat.<br>• Know where foods come from (further away v local). |
| **Tasks** | **Design:**<br>• Look at when cooking began<br>• Look at where our food comes from versus where Stone Age people got their food<br><br>**Make:**<br>• Prepare Stone Age recipes and meals: ***http://cookit.e2bn.org/historycookbook/index-29-prehistoric.htmlDesign salads and hot dishes with Stone Age ingredients***<br><br>**Evaluate:**<br>• Research what and how Stone Age people ate<br><br>**Technical knowledge:**<br>• Understand what a meal is.<br>• Know why fruit and veg are healthy and compare to sweet food.<br><br>**Example of Work**<br> | **Design:**<br>• Follow the design sheet to plan, make and evaluate to make a moving, sliding picture.<br><br>**Make:**<br>• **Models with sliders and levers**<br><br>**Evaluate:**<br>• Model and investigate levers and sliders using trial and error and recording steps and tips<br><br>**Technical knowledge:**<br>Teach, model and practise cutting and joining card<br>• Practise joining card and fixing without glue<br>• Investigate reinforcing using cardboard corners, tapes and hot glue<br><br>(PLANT GARDEN PRODUCE FOR SUMMER TOPIC)<br><br>**Example of Work** | **Design: design a salad from garden produce**<br>**Make:**<br>List and collect research on plants you can and cannot eat<br>• Taste test plant produce<br>• Investigate raw and cooked plant produce<br>• Distinguish between eating the fruits and seeds of a plant or the leaves, stalk or flower of a plant<br><br>**Evaluate:**<br>• Follow the design sheet to plan, make and evaluate<br><br>(Ideas: fruit flavoured jellies, herby snacks, flower salads etc)<br><br>**Technical knowledge:**<br>• Sort plants- edible, not edible<br>• Sort fruits and veg into categories<br><br>**Example of Work** |
| **Vocabulary 'Juicy Jargon'** | Savoury<br>Sugar<br>Healthy<br>Benefits<br>Grown<br>Chop<br>Prepare<br>Cook<br>raw<br><br>Scavenge<br>Gathered<br>Collected<br>Reared<br>Farmed<br>Fruit<br>Vegetables<br>Protein<br>Carbohydrates<br><br>Water<br>Good<br>Eat<br>Everyone<br>More<br>Other<br>Food<br>Right<br>Animals<br>Sea<br>Fish<br>Found<br>Live<br>Around<br>garden | Cardboard<br>Fix<br>Join<br>Bend<br>Fold<br>Tape<br>Secure<br>Strengthen<br>Hold<br>Lever<br>Slider<br>Cut<br>measure<br><br>Tower<br>Castle<br>Battlement<br>Portcullis<br>Baily<br>Moat<br>Arrow loop<br>Walls<br>Materials<br>Weapons<br>Defence<br><br>Good<br>Want<br>Over<br>Find<br>More<br>Round<br>Other<br>Door<br>Need<br>King<br>Every<br>Think<br>Stop | Savoury<br>Sugar<br>Healthy<br>Benefits<br>Grown<br>Chop<br>Prepare<br>Cook<br>Raw<br>Home grown<br>Produce<br>Natural<br>Edible poisonous<br><br>Scavenge<br>Gathered<br>Collected<br>Reared<br>Farmed<br>Fruit<br>Vegetables<br>Protein<br>Carbohydrates<br><br>Water<br>Good<br>Eat<br>Everyone<br>More<br>Other<br>Food<br>Right<br>Animals<br>Sea<br>Fish<br>Found<br>Live<br>Around<br>garden |
| | **Links to learning and assessment points** | | |
| **Outcomes: DT knowledge** | • Know that some food is bought or grown locally and some come from far away (know examples)<br>• Know which foods are healthier to eat<br>• Know that Stone Age people were hunter gatherers and that they began to cook<br>• Understand the difference between savoury and sweet foods | • Know that cardboard can be fixed using different adhesives (glues or tapes) options<br>• Know what materials will make cardboard stronger<br>• Know how to cut and glue safely<br>• Understand how sliders work and evidence practising these<br>• I can measure accurately (in cm)<br>• Evidence of reinforcements | • Know that some plants can be eaten<br>• Be able to prepare a flower and leaf salad<br>• Know that food is grown and eaten<br>• Know how to cut safely<br>• Know how to store fresh food<br>• Know that ingredients compliment a recipe to make a final product |
| **Challenge Examples** |  | |  |
| **SEND Differentiation Examples** | • Simplify Juicy Jargon<br>• Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then | • Simplify Juicy Jargon<br>• Repeating content (extending the journey before moving on)<br>• Physical Resourcing<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then | • Simplify Juicy Jargon<br>• Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then |

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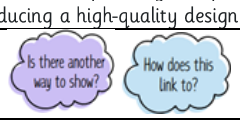
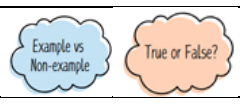
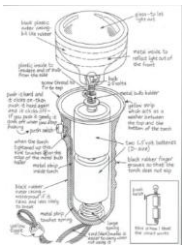
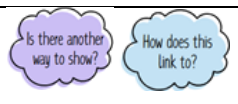
| **Previous** | YEAR 1<br>• Basic cooking hygiene and snack making/ cooking | YEAR 1<br>• Moon Buggies | YEAR 1<br>• Basic cooking hygiene and snack making<br>• Biscuit baking (Pay it forward with Y6) |
| **Next** | YEAR 2<br>• Builds up to cooking using plants in a community project<br>YEAR 3<br>• Healthy meals and snacks<br>YEAR 4<br>• Variety of savoury dishes (pastry, pasta and potatoes)<br>YEAR 5<br>• Iraq Cooking<br>YEAR 6<br>• (Pair with y1 in Pay it Forward) biscuits<br>• Trench food/ war tea dance<br>• Seasonal celebration | YEAR 3<br>• Knowledge of levers and sliders build to pulleys<br>YEAR 4<br>• Victorian Toys- build to help measure at cut to mm and working with card and wood<br>• Pulley knowledge in Y3 then prepares for pulleys and cams in expedition vehicles<br>YEAR 5<br>• Links to Art- topographical maps: prepared children for scoring and forming irregular shapes from card | YEAR 3<br>• Healthy meals and snacks<br>YEAR 4<br>• Variety of savoury dishes (pastry, pasta and potatoes)<br>YEAR 5<br>• Gruel and Victorian cooking<br>YEAR 6<br>• (Pair with Y1 in Pay it Forward) biscuits<br>• Trench food/ war tea dance<br>• Seasonal celebration |

# YEAR 3

| | Autumn 2 | Spring 2 | Summer 2 |
|---|---|---|---|
| | Year 3<br>Egyptian – Pulleys, Building the pyramids | Year 3<br>Volcanos - 3D Design | Year 3<br>Baking: Community Vegetarian Hamper |
| **National Curriculum** | **Design, make, evaluate** | **Design, make, evaluate** | **Design: cooking and nutrition** |
| **Design** | • I can use my knowledge of existing products to design my own functional product.<br>• I can create designs using annotated sketches and prototypes.<br>• I can talk about my design and discuss how it might change from my original idea after research and prototypes making a note of steps and order. | • I can create designs using annotated sketches and prototypes.<br>• I can talk about my design and discuss how it might change from my original idea after research and prototypes making a note of steps and order.<br>• I can explore CAD as an alternative to building. | • I can use my knowledge of existing products to design my own functional product.<br>• I can talk about my design and discuss how it might change from my original idea after research. |
| **Make** | • I can safely measure, mark out, cut assemble and join with some accuracy.<br>• I can use simple pulley and fixed axle with a motor (1 axle- 2-wheel drive)<br><br>• I can modify my designs with levers and sliders | • I can measure in mm<br>• I can make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. | • I can safely measure and weigh ingredients with accuracy.<br>• I can make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. |
| **Evaluate** | • I can talk about how I would improve my product if I was to make it again. | • I can investigate and analyse existing products and those I have made, considering a wide range of factors and or a given criteria.<br>• I can talk about how I would improve my product if I was to make it again. | • I can investigate and analyse existing products and those I have made, considering a wide range of factors and or a given criteria.<br>• I can talk about how I would improve my product if I was to make it again. |
| **Technical Knowledge** | • I can investigate different techniques for stiffening, strengthening and reinforcing more complex structures and alter and adapt. | • I can understand the current limitations of technology and design what I would do if those limitations were not there. | • I can apply the principles of healthy and varied diets. |
| **Tasks** | **Design:**<br>• Follow the design sheet to plan, design, make and evaluate a system to lift and pull heavy pyramid blocks.<br>**Make:**<br>• Make and explore the effect of different sized pulleys (cogs)<br>**Evaluate:**<br>• Evaluate the methods used by the Ancient Egyptians to move head stone blocks<br>• Explore the use of modern motors powered by batteries and fixed axles<br>**Technical knowledge:**<br>• Practise reinforcing joins with corners, braces and nails (tacks/ furniture pins)<br> <br>**Example of Work**<br> | **Design:**<br>• **Design a volcano that represents a realistic model**<br>• Follow the design sheet to plan, design, make and evaluate a volcano<br>• **Look at the work of Darrell Wakelam for cardboard construction**<br>**Make:**<br>Explore the different shapes of volcanos<br>• Investigate and research the development of computer aided design<br>• Look at how the design can help to guide the building of a volcano<br>**Evaluate:**<br>• Practise cutting and joining cardboard<br>• Practise combining cardboard, Modroc and other materials to create a realistic surface<br>**Technical knowledge:**<br>• Cutting, fixing, gluing, covering<br>**Example of Work**<br> | **Design:**<br>• Follow the design sheet to plan and design a unique vegetarian version of a product<br>**Make:**<br>• Make a range of products from adapted recipes (practising using the original recipe first)<br>**Evaluate:**<br>• Explore the range of products on the market from basic food hampers to luxury hampers<br>• Visit food and fodder to investigate the range of local ingredients<br>• Sort food into vegetarian and vegan categories (also cover allergies)<br>**Technical knowledge:**<br>• Food hygiene, food types.<br>**Examples of Work**<br> |
| **Vocabulary 'Juicy Jargon'** | Batteries<br>Wheels<br>Axle<br>Motor<br>Base/frame<br>Power<br>Reinforce<br>Brace<br>Nail<br>Alter<br>Combine<br>Mechanism<br><br>Trojan<br>Horse<br>Invade<br>Conceal<br>gift<br><br>Appear<br>Build<br>Complete<br>Increase<br>Experiment<br>Straight<br>Caught<br>Circle<br>Material<br>Noticed<br>Position<br>Through<br>Enough<br>Strength | Program<br>Code Build<br>Design Plan<br>Adapt Element<br>Filament 3D print<br>Print bed Display<br>Screen<br>Dimension LxWxD<br><br>Volcano<br>Cone<br>Lava<br>Surface<br>Texture<br>Form<br>rocks<br><br>Build Decide<br>Complete<br>Extremely<br>Actual Favourite<br>Height Material<br>Purpose<br>Enough<br>Particular | Grams<br>Milligrams<br>Teaspoon<br>Table spoon<br>Litre<br>Millilitre<br>Measure<br>Compare<br>Product<br>Evaluate<br>Design brief<br>Customer<br>Local produce<br><br>Fresh<br>Produce<br>Vegetarian<br>Vegan<br><br>Calendar<br>Decide<br>Experiment<br>Fruit Group<br>Popular<br>Increase<br>Perhaps<br>Strange<br>Knowledge<br>Medicine<br>Opposite<br>possesses |
| **Outcomes: DT knowledge** | • Demonstrate an understanding of the use of pulleys and motorised pulleys<br>• Know how to apply levers and sliders in a new context (drawing upon previous learning)<br>• Show examples of exploration of levers and sliders.<br>• Know that pulleys can be man-powered or use a motor. | • Know that computers can print in 3D<br>• Know what the three dimensions are: length, depth and width<br>• Understand that coding controls the program that runs the printer<br>• Understand that planning is important to contribute to producing a high-quality design and product | • Know what a vegetarian does and does not eat<br>• Know that some recipes are suitable for different groups of people<br>• Understand how to prepare a vegetarian product<br>• Be able to read and follow a complex recipe |
| **Challenge Examples** | |  |  |
| **SEND Differentiation Examples** | • Simplify Juicy Jargon<br>• Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>• Visual schedule: First, Next, Then | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat...<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (simplifying the journey)<br>• Repeating content (extending the journey before moving on)<br>• Learning Space: Larger working area (dyspraxia), standing desk (ADHD)<br>Visual schedule: First, Next, Then |

| | | | |
|---|---|---|---|
| **Previous** | YEAR 1<br>• Moon Buggy- simple joining and fixing<br><br>YEAR 2<br>• Sliders – reinforcing card<br>• Simple levers and sliders | YEAR 1<br>● Designing a vehicle- manually build and design | YEAR 1<br>● Basic cooking hygiene and snack making/ cooking<br>● Biscuit baking (Pay it forward with Y6)<br><br>YEAR 2<br>● A stone Age scavenge- local and grown foods |
| **Next** | YEAR 4<br>● Victorian Toys- build to help measure at cut to mm and working with card and wood<br>● Pulley knowledge in Y3 then prepares for pulleys and cams in expedition vehicles<br><br>YEAR 5<br>● Links to Art- topographical maps: prepared children for scoring and forming irregular shapes from card | YEAR 5<br>● Solving a problem in the community<br><br>YEAR 6<br>● CAD design room on Titanic | YEAR 4<br>● Variety of savoury dishes (pastry, pasta and potatoes)<br>YEAR 5<br>● Iraq cooking<br>YEAR 6<br>● (Pair with Y1 in Pay it Forward) biscuits<br>● Trench food/ war tea dance<br>● Seasonal celebration |

# YEAR 4

| | Autumn 1 | Spring 2 | Summer 2 |
|---|---|---|---|
| | Year 4<br>Design and Make Games | Year 4<br>Simple Torches | Year 4<br>Cooking and Nutrition |
| **National Curriculum** | Design, make, evaluate | Design, make, evaluate | Design: cooking and nutrition |
| | **Skills progression and assessment** | | |
| **Design** | • I can use my knowledge of existing products to design a functional and appealing product for a particular purpose and audience.<br>• I can research and develop my design from a given design criteria **including what wouldn't work/ don't like.** | • I can use my knowledge of existing products to design a functional and appealing product for a particular purpose and audience.<br>• I can create designs using annotated sketches, exploded diagrams and pattern pieces.<br>• I can research and develop my design from a given design criteria **including what wouldn't work/ don't like.** | • I can use my knowledge of existing products to design a delicious and appealing product for a particular purpose and audience.<br>• I can create designs using annotated sketches, exploded diagrams and pattern pieces.<br>• I can research and develop my design from a given design criteria **including what wouldn't work/ don't like.** |
| **Make** | • I can use techniques which require more accuracy to cut, shape, join and finish my work.<br>• I can use my knowledge of techniques and the functional and aesthetic qualities of a material and plan how to use it. | • I can use my knowledge of techniques and the functional and aesthetic qualities of a wide range of materials and plan how to use them. | • I can use techniques which require **more steps and stages** |
| **Evaluate** | • I can investigate and analyse a range of existing products and explain how they will help to develop my design.<br>• I can consider how existing products and my own finished products might be improved and how well they meet the needs of the intended user. | • I can investigate and analyse a range of existing products and explain how they will help to develop my design.<br>• I can consider how existing products and my own finished products might be improved and how well they meet the needs of the intended user. | • I can investigate and analyse a range of existing products and explain how they will help to develop my design.<br>• I can consider how existing products and my own finished products might be improved and how well they meet the needs of the intended user. |
| **Technical knowledge** | • **I can use the right tools to cut and fix accurately.**<br>• **I can identify when to drill, cut or fix wood.**<br>• I can understand and use electrical systems in my products. | • I can understand and use electrical systems in my products.<br>• I can understand how to use more complex mechanical systems. | • Prepare and cook a variety of savoury dishes (predominantly) |
| **Tasks** | **Design: design a game for a Roman child.**<br>Investigate a range of Roman games.<br>• Produce diagrams explaining how each toy/ game works (pick up sticks, knucklebones, battledore, latrunculin, Terni lapilli)<br>• Design several options of games.<br>**Make:**<br>• Follow the design sheet to design, plan and make a toy/game<br>**Evaluate:**<br>• Evaluate and give feedback on own product (use DT evaluation sheet).<br>**Technical Knowledge:**<br>• practise cutting accurately to the nearest mm<br>• Select features of toys to replicate in own design (i.e., colour, size, joins)<br>**Example of Work**<br> | **Design:**<br>*Torch/Lantern*<br>Follow the design sheet to design, plan and make a torch suitable for an expedition<br>**Make:**<br>• Investigate a range of torches and simple circuits with a switch<br>• Produce annotated sketches of torch design<br>• Produce an exploded diagram<br>**Evaluate:**<br>• Torch: Solving/correcting errors in circuits<br>**Technical knowledge:**<br>• Explore motorised pulleys and combinations of pulleys, levers and sliders and motorised CAMS.<br>• Investigate different ideas by using annotated drawings and trail and testing.<br>  <br>**Example of Work**<br> | **Design:**<br>• Investigate the process of food manufacturing and processing from start to plate<br>• Plan amounts of and contents of ingredients including cost per product to produce and basic profit projection<br>• Follow the design sheet to design, plan and make food products<br>**Make:**<br>• Make a popular sweet treat with marketing packaging. (e.g., Caterpillar Cake)<br>**Evaluate**<br>• Observe and investigate food packaging, what is included and why<br>• Investigate variations of selected recipes- test tests.<br>**Technical knowledge:**<br>• Design and make packaging using knowledge of suitable hygienic materials<br>• Design and make a product to be 'sold' including the packaging and marketing.<br>**Example of Work**<br> |
| **Vocabulary 'Juicy Jargon'** | Features<br>Manual<br>Follower<br>Axle<br>Guide<br>Scale<br>Rotate<br>Form<br>Base<br>Saw<br>Pin/ hammer<br>Secure<br>Mount/frame<br><br>Victorian<br>Toy<br>Traditional<br>Manual<br>Non- motorised<br><br>Build<br>Complete<br>Consider<br>Decide<br>Difficult<br>Remember<br>Centre<br>Circle<br>Material<br>Position<br>length | **Torches:**<br>Aesthetic<br>Design<br>Function<br>Diagram<br>Purpose<br>**Expedition challenge:**<br>Pulleys Cams<br>Motor Motorised<br>Drive Motion<br>Properties Engineer/ ing machine<br><br>Circuit<br>Bulb<br>Elements<br>Components<br>Conduct<br>insulate<br>light<br>source<br><br>Answer Build<br>Address<br>Complete<br>Consider Decide<br>Difficult<br>Experiment<br>Extreme Increase<br>Circle Guide<br>Knowledge<br>Position Weight<br>Pressure Strength | Cook<br>Prepare<br>Hygiene<br>Combine<br>Taste<br>Texture<br>Flavour<br>Production<br>Processed<br><br>Healthy<br>Diet<br>Variety<br>Source<br>Produce<br>Measure<br>Vitamins<br>Minerals<br><br>Experience<br>Remember<br>Favourite<br>Knowledge<br>Fruit<br>Group<br>Weight<br>Enough<br>Potatoes<br>Natural |
| | **Links to learning and assessment** | | |
| **Outcomes: DT knowledge** | • Know how to make a product that matches a brief<br>• Evidence of research into similar products<br>• Ability to replicate chosen components of designs for own design<br>• Able to measure and cut with greater accuracy (to the nearest mm) | Torches<br>• Be able to combine components with electricity<br>• Know how to build simple circuits with switches and bulbs<br>• Understand that you may need to identify problems and correct them | • Know how to combine products to make a marketing product<br>• Know that products which are sold can be packaged and marketed and how to do this<br>• Know that food can be processed at a factory<br>• Know how much a product costs to produce and what profit you could make |
| **Challenge Examples** | |  | |

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| **SEND Differentiation Examples** | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. |
| **Previous** ← | **YEAR 1**<br>• Moon Buggy- simple joining and fixing<br>**YEAR 2**<br>• Sliders – reinforcing card<br>• Simple levers and sliders<br>**YEAR 3**<br>• Egypt- Pulleys and sliders | **YEAR 1**<br>• Moon Buggy- simple joining and fixing<br>**YEAR 2**<br>• Sliders – reinforcing card<br>• Simple levers and sliders<br>**YEAR 3**<br>• Egypt- Pulleys and sliders | **YEAR 1**<br>• Basic cooking hygiene and snack making/ cooking<br>• Biscuit baking (Pay it forward with Y6)<br>**YEAR 2**<br>• A stone Age scavenge- local and grown foods<br>**YEAR 3**<br>• Vegetarian hamper- local produce |
| **Next** → | **YEAR 5**<br>• 3D CAD designing<br>**YEAR 6**<br>• Titanic CAD | **YEAR 4 and 6**<br>• Electricity (Science)<br>**YEAR 5**<br>• 3D CAD Designing<br>**YEAR 6**<br>• Titanic CAD | YEAR 5<br>• Iraq Cooking<br>YEAR 6<br>• (Pair with Y1 in Pay it Forward) biscuits<br>• Trench food/ war tea dance<br>• Seasonal celebration |

# YEAR 5

| | A Step in Time | Discovery | Me, Myself and I |
|---|---|---|---|
| | **Autumn 2** | **Spring 2** | **Summer 1 and 2** |
| | Year 5<br>Iraq: cooking<br>Arab, Kurdish, Turkman and Iranian | Year 5<br>Explorer- solutions<br>Product design | Year 5<br>Anglo-Saxon<br>weaving and sewing |
| **National Curriculum** | Design: cooking and nutrition | Design, make, evaluate | Design, make, evaluate |
| | **Skills progression and assessment** | | |
| **Design** | • I can use my research into existing products to inform the design of an innovative product.<br>• I can create designs using annotated sketches | • I can use my research into existing products to inform the design of my own innovative product.<br>• I can create designs using annotated sketches and cross-sectional designs and pattern pieces. | • I can use my research into existing products to inform the design of my own innovative product.<br>• I can create designs using annotated sketches and cross-sectional designs and pattern pieces. |
| **Make** | • I can make careful and precise measurements so that recipes are accurate and repeatable.<br>• I can apply my knowledge of different materials, tools and techniques to planning and then making. | • I can make careful and precise measurements so that joins, holes and openings are in exactly the right place.<br>• I can apply my knowledge of different materials, tools and techniques to planning and then making. | • I can make careful and precise measurements so that joins, holes and openings are in exactly the right place.<br>• I can produce step by step plans to guide my making, demonstrating that I can apply my knowledge of different materials, tools and techniques. |
| **Evaluate** | I can make detailed evaluations about existing products and my own considering the views of others to improve my work. Remarking on: taste, texture, appearance | • I can make detailed evaluations about existing products and my own considering the views of others to improve my work. Remarking on the functionality after testing: strength, scale, design, functionality (ease of use) | • I can make detailed evaluations about existing products and my own considering the views of others to improve my work. Remarking on the skills used: E.g., joins, strength, flexibility. |
| **Technical knowledge** | • I can plan, prepare and cook a variety of savoury dishes using a range of techniques (predominantly) | • I can apply techniques I have learnt to suggest improvements and or solutions structures and explore my own ideas. | • I can apply techniques I have learnt to strengthen structures and explore my own ideas. |
| **Tasks** | **Design: meals from different cultures**<br>• Research the main population of Iraq and how it is made up of different groups of people<br>• Research food and meals from Arab, Kurd, Turk and Iranian heritage<br><br>**Make:**<br>• Recreate meals following recipes<br>• List and record the process and ingredients<br><br>**Evaluate:**<br>• Reflect. Use DT sheet to record evaluations<br>• Link to similar British meals<br><br>**Technical knowledge:**<br>• Food hygiene<br>• Local produce and cooking processes<br><br>Suggestions:<br>Iraqi Kebab – Grilled Meat with Spices. ...<br>Masgouf – Iraqi Grilled Fish. ...<br>Quzi – Stuff Whole Lamb Roast. ...<br>Iraqi Tashreeb – Bread Meat Soup. ...<br>Makhlama – Iraqi Eggs and Lamb. ...<br>Margat Bamia – Okra Stew. ...<br>Shorbat Rumman – Iraq Pomegranate Stew. ...<br>Maqluba – Iraqi Upside-Down Rice. | **Design: Design and make a survival tool**<br>• Follow design sheet to design, plan and make a survival tool/ equipment- make alternative designs<br>• Explore survival items and match to the story- evaluating what would be useful in this situation<br>• Categorise survival equipment: food, water, shelter etc<br>• Take one category and one design and create cross sectional drawings of the components<br><br>**Make:**<br>• Make a piece of survival equipment from own design (CAD)<br><br>**Evaluate:**<br>• Evaluate strength, scale, design, functionality (ease of use) of a range of products including own<br><br>**Technical knowledge:**<br>• Design process | **Design: Weave and sew a Saxon bag.**<br>• Look at and create patterns for Saxon clothing with sketches and drawings<br>• Research weave patterns and step by step guides<br><br>**Make:**<br>• Create small weaving samples to support product design in paper and ribbon/ fabric<br>•<br><br>**Evaluate:**<br>• Look at examples of Saxon weaving and sort/evaluate purpose (decorative or functional)<br><br>**Technical knowledge:**<br>• Practise independent use of stitches<br>• Building on Y1, combine stitches to create effective Saxon style patterns and scaled down clothing<br> |
| **Vocabulary 'Juicy Jargon'** | Ingredients<br>Design<br>produce<br>Consumer<br>Evaluate<br>Similarities<br>Differences<br>Texture<br>Appearance<br><br>Meals<br>Location<br>Local<br>Herbs<br>Spices<br>Cultural<br>Seasonal<br><br>Accompany<br>Appreciate<br>Available<br>Convenience<br>Desperate<br>Excellent<br>Marvellous<br>Temperature<br>Vegetable | Brief<br>3D<br>Dimension<br>Criteria<br>Solution<br>Categories<br>Components<br>Alternative<br>equipment<br>sketch<br><br>Rainforest<br>Habitat<br>Inhabitable<br>Extreme<br>Survival<br>task<br><br>Achieve<br>Attached<br>Develop<br>Equipment<br>Explanation<br>Hindrance<br>Physical<br>Relevant<br>Temperature<br>Vehicle | Form<br>Crease<br>Mould<br>Fix<br>Techniques<br>Explore<br>Weave<br>Needle warp weft<br>Loom<br>material<br><br>Bone<br>Loom<br>Fabrics<br>Function<br>Decorative<br>Thread<br>Design<br>Pattern<br><br>Ancient<br>Attached<br>Category<br>Community<br>Environment<br>Leisure |
| | **Links to learning and assessment points** | | |
| **Outcomes** | • Be able to sort food and meals and evaluate the reasons<br>• Be able to independently create recipes and evaluate their taste, texture, appearance and smell<br>• Make links to meals we have now<br>• Understand how culture and location can affect meal design. | • Know that 3D printers are used in survival equipment development<br>• Be able to draw cross sections to explain ideas<br>• Know if a product meets a brief by evaluating against set criteria | • Know what the warp and weft is<br>• Explore range of sewing stiches for purposes- decoration and fixing/ joining<br>• Creation a small-scale pattern and rehearsal of joins |
| **Challenge Examples** | | | |
| **SEND Differentiation Examples** | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat...<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat...<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat...<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>• Visual schedule: First, Next, Then. |
| **Previous** ← | YEAR 1<br>• Basic cooking hygiene and snack making/ cooking<br>• Biscuit baking (Pay it forward with Y6)<br><br>YEAR 2<br>• A stone Age scavenge- local and grown foods<br><br>YEAR 3<br>• Vegetarian hamper- local produce | YEAR 3<br>• 3D printing knows items/shapes/ designs | YEAR 1<br>• Sewing bog babies<br><br>YEAR 1-2<br>• Manipulation of cardboard in Art and DT topics:<br>• Year 1 King and Queen portraits<br>• Year 2 Sliders |

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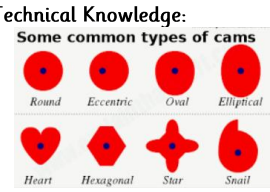
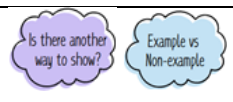
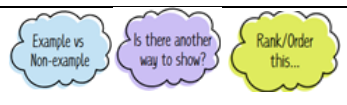
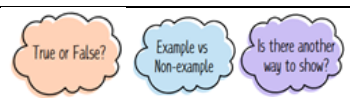
| | **YEAR 4**<br>• Product to sell | | |
| **Next** | **YEAR 6**<br>• War time cooking | **YEAR 6**<br>• Titanic room CAD design | **YEAR 6**<br>• Ice berg landscape art<br>• Nail art (Art) |

# YEAR 6

| | Autumn 1 | Autumn 2 | Spring 2 | Summer 2 |
|---|---|---|---|---|
| | Year 6<br>CAD design and titanic build | Year 6<br>Circuits and design- Titanic | Year 6<br>War time cooking | Year 6<br>Endangered animal toy |
| **National Curriculum** | Design, make, evaluate | Design, make, evaluate | Design: cooking and nutrition | Design, make, evaluate |
| | **Skills progression and assessment** | | | |
| **Design** | • I can generate, develop, model and communicate my ideas through discussion, annotated sketches, exploded diagrams and through prototypes and computer aided design. CAD design/ computer generated design programs etc | • I can generate, develop, model and communicate my ideas through discussion, annotated sketches, exploded diagrams and through prototypes and computer aided design. CAD design/ computer generated design programs etc | I can design a meal that would be similar to those eaten by soldiers in WW1 | • I can design combining aesthetics and mechanical features: motorised Cams |
| **Make** | • I can use my technical knowledge and accurate skills to problem solve during the making process. | • I can use my technical knowledge and accurate skills to problem solve during the making process.<br>• I can apply my knowledge of material and techniques to refine and rework my product to improve its functional properties and aesthetic qualities. | • I can use my technical knowledge and accurate skills to problem solve during the making process.<br>• I can apply my knowledge of material and techniques to refine and rework my product to improve its functional properties and aesthetic qualities. | • I can use my technical knowledge and accurate skills to problem solve during the making process.<br>• I can apply my knowledge of material and techniques to refine and rework my product to improve its functional properties and aesthetic qualities. |
| **Evaluate** | • I understand how key events and individuals in design and technology have helped shape the world. | • I understand how key events and individuals in design and technology have helped shape the world. | • I understand how key events and individuals in design and technology have helped shape the world. | |
| **Technical knowledge** | • I can build more complex 3D structures and apply my knowledge of strengthening techniques to make them stronger and more stable. | • I can build more complex 3D structures and apply my knowledge of strengthening techniques to make them stronger and more stable.<br>• I can understand how to use more complex electrical systems.<br>• I can apply my understanding of computer programs to monitor and control my product. | • I understand seasonality of ingredients including origin **(grown, reared, caught or processed)** | • **I can apply a range of methods including combining Art and DT knowledge and understanding to make a product.**<br>• **I can combine and improve my accuracy with the use of previously learned skills such as sewing, weaving, printing and 3D work.** |
| **Tasks** | **Design:** Investigate the use of CAD for room and building design<br>**Make:**<br>Design, plan and make/build a replica room using detail construction and methods learning across Ks2<br>• Furniture items combing all previous learned skills: cardboard, joins, fixings<br>• Make soft furnishings using learnt skills: weaving, sewing<br><br>**Evaluate:**<br>• Investigate how to include various given elements/ features<br>• Evaluate and re work ideas, explaining and recording changes<br><br>**Technical Knowledge:**<br>• Learn then create a 'users guide' of how 2 as work progresses for future reference | **Design:**<br>Incorporate electrical components in a room which are controlled with switches and sensors.<br>**Make:**<br>• Wire a circuit for the room including bulbs, switches and speakers for a selected purpose<br><br>**Evaluate:**<br>• Investigate how to control these components with computers: Makey Makey etc combined with ScratchJn<br><br>(https://www.barefootcomputing.org/input-output-control-equipment)<br>**Technical Knowledge:**<br>• Science knowledge on circuits and electrical components | **Design:** Make war time food<br>• Follow the design sheet to plan, design and make a war time tea dance meal for families: create own brief, investigate and price up ingredients, plan in stages linked to when to prep food and who should pre what<br><br>**Make:**<br>• Follow recipes and teach others to make a variety of war time treats and meals<br><br>**Evaluate:**<br>• Investigate the use of rationing and the impact on feeding and cooking for families during wartime<br>• Look at the range of recipes and advise given to families/ compare to lockdown for us<br><br>**Technical Knowledge:**<br>• Study how long food lasts and times for prep | **Design:** Design and make a moving animal using cams.<br>• Follow design sheet to plan, design and make a motorised cam puppet<br><br>**Make:**<br>• Explore and make different card CAMS and explore the effect of the shape on the movement. https://stoneferryprimary.org.uk/wp-content/uploads/2020/11/DT-Booklet-MOVING-TOYS.pdf<br><br>**Evaluate:**<br>• Explore and investigate own preferences in design features for celebration puppets<br>• Look at the use of CAMS for puppetry: different shape cams and the effect on the puppet<br><br>**Technical Knowledge:**<br>  |
| **Vocabulary 'Juicy Jargon'** | CAD<br>Aided<br>Brief<br>Scale<br>Composition<br>Investigate<br>Alternatives<br>Adapt<br><br>Rooms<br>Class<br>Lodgings<br>Furniture<br>Textiles<br>accessories<br><br>Attached<br>Definite<br>Develop | Combine<br>Fix<br>Scale<br>Detail<br>Fix<br>Architect<br>Designer<br>engineer<br><br>Code<br>Program<br>Control<br>Check<br>Fix<br>Adapt<br>Run<br>Repeat<br>Monitor<br><br>Environment<br>Lighting<br>Occupy<br>Neighbour<br>Category<br>Excellent<br>programme | Recipe<br>Price<br>Organise<br>Stages<br>Preparation<br>Storage<br>rationing<br><br>Rationing<br>Vegetables<br>Supplies<br>Essentials<br>Families<br>Nutritious<br><br>Available<br>Average<br>Disastrous<br>Environment<br>Vegetable | Cam<br>Follower<br>Shaft<br>Slide<br><br>Puppet<br>Fold ark<br>Craft<br>Movement<br>Force<br>Mechanism<br><br>Ancient<br>Cemetery<br>Individual<br>Shoulder<br>Stomach |
| | **Links to learning and assessment points** | | | |
| **Outcomes** | • Be able to use CAD to create a room design which has had several adaptations and reviews<br>• To understand and show that the CAD is a prototype for the creation of the real room | • To apply learned skills and knowledge from across KS2 to build and decorate a room from the CAD design<br>• To be able to build a circuit with a light and alarm<br>• To be able to code to control and monitor the circuit<br>• Know that circuits can be controlled by computers | • Know that at times food will be in short supply and name some occasions<br>(Seasonal, war and pandemic)<br>• Show evidence of planning with a time line the preparation of food for an event<br>• Follow more complex recipes that are scaled up for larger groups | • Combine knowledge and skills from across Ks2 in Art and DT to plan and make a Day of the dead puppet for the carnival.<br>• Build a successful moving mechanism to fit a brief.<br>• Know that Art and DT can and often are combined.<br>• Demonstrate cams and motors in variation for effect. |
| **Challenge Examples** |  |  | |  |

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| **SEND Differentiation Examples** | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>Visual schedule: First, Next, Then. | • Simplify Juicy Jargon<br>• Smaller Steps (Journey)<br>• Gauging group responses to support individuals: pair up, add on, repeat…<br>• Physical Resourcing<br>• Physical Resources for Dexterity: larger paper, easy grip tools, pre-cut sheets/shapes<br>Visual schedule: First, Next, Then. |
| **Previous** ← | YEAR 3<br>• Volcano 3D design & making<br><br>(Links to Computing for all year groups with coding and programming) | YEAR 3<br>• Volcano 3D design & making<br><br>(Links to Computing for all year groups with coding and programming) | YEAR 1<br>• Basic cooking hygiene and snack making/ cooking<br>• Biscuit baking (Pay it forward with Y6)<br>YEAR 2<br>• A stone Age scavenge- local and grown foods<br>YEAR 3<br>• Vegetarian hamper- local produce<br>YEAR 4<br>• Product to sell<br>YEAR 5<br>• Iraq meals | YEAR 1<br>• Sewing bog babies<br>YEAR 1-2<br>• Manipluation of cardboard in Art and DT topics:<br>• Year 1 King and Queen protraits<br>• Year 2 Castles<br>YEAR 3<br>• Trojan horse levers, cams etc<br>YEAR 4<br>• Expeditions- cams, pulleys etc |
| **Next** → | KS3<br>Design<br>• identify and solve their own design problems and understand how to reformulate problems given to them<br>• develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations<br>• use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses<br>• develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based<br>Evaluate<br>• test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups<br>• understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists | Design<br>• develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of<br>• develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools<br>Make<br>• select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties Evaluate | Design<br>• identify and solve their own design problems and understand how to reformulate problems given to them<br>• test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups | Design<br>• use research and exploration, such as the study of different cultures, to identify and understand user needs<br>• identify and solve their own design problems and understand how to reformulate problems given to them<br>• develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations<br>• use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses<br>• develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools<br>Make<br>• select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture<br>• select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties<br>Evaluate<br>• analyse the work of past and present professionals and others to develop and broaden their understanding |