



What does Design & Technology look like at Hambleton ?



# What does it mean to be a Designer at Hambledon Primary School ?

- ❑ To equip our children with a broad range of knowledge, skills and qualities to become successful and responsible learners, ready for the next stage of their education. We achieve this through developing learning values across all aspects of a curriculum that is cohesive, progressive & relevant.
- ❑ In D&T this means that children will be developing their skills to enable them to take their learning further and appreciate the importance of D&T and its impact within the wider world. They will learn about the different aspects of Design and Technology through the journey of designing, making and evaluating their own projects whilst looking at the work of other designers.

# Design & Technology Intent Statement



## Curriculum Intentions:

The National Curriculum for Design & Technology states that:

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.

At Hambleton this means:

To equip our pupils with a broad range of knowledge, skills and qualities to become successful and responsible learners, ready for the next stage of their education. We achieve this through developing learning values across all aspects of a curriculum that is cohesive, progressive & relevant. This means Art & Design should be an enjoyable but also challenging experience for pupils, encouraging them to want to continue building on this wealth of artistic ability, now and in the future. Our curriculum provides a variety of sensory experiences and a unique way of understanding and responding to the world. It enables pupils to communicate what they see, feel and think through the use of colour, texture, form, pattern, construction and different materials and processes. They learn to make informed judgements and aesthetic and practical decisions.

Design & Technology should be an enjoyable experience for pupils and teachers.

- ❖ Pupils participate in a range of D&T experiences, including quality real experiences, building up their resourcefulness and confidence whilst developing their creativity and imagination.
- ❖ Pupils progressively develop their D&T understanding and skills through participating in a range of practical activities linked to the D&T learning objectives.
- ❖ Pupils become more confident designers through the process of problem solving, planning, creating, evaluating and opportunities to display their work on a regular basis.
- ❖ Pupils build a progressively complex vocabulary and use this when creating and reflecting on their learning.
- ❖ Pupils learn to respond to the work of designers using their designs and the everyday products around them as a stimulus for their own creations whilst understanding the impact of these designs on daily life.
- ❖ Pupils experience design from different cultures and eras.

Being creative contributes to well-being.



### **Implementation:**

D&T is taught regularly in the classroom, Classes are taught by the class teacher. Classroom D&T provides a broad and balanced curriculum through looking at everyday products, other designers work and hands on experiences.

### **Impact:**

The impact of teaching D&T will be seen across the school with an increase in the profile of the subject. Pupils will achieve in line with appropriate Age-Related Expectations for D&T. Whole-school and parental engagement will be improved through displays and opportunities suggested in lessons/overviews for wider learning. Participation in D&T develops wellbeing, promotes values and develops problem solving and practices skills like cause and effect (i.e., "If I place the axle here will the vehicle be stable."). They can also practice critical thinking skills by making a mental plan or picture of what they intend to create and following through on their plan before evaluating its success. D&T also helps us to develop further understanding of our World. It develops pupils' skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. It encourages pupils' creativity and encourages them to think about important issues.

D&T is enjoyed by teachers and pupils across school, encouraging them to want to continue building on this wealth of designing ability, now and in the future. Pupils will feel confident to and enjoy sharing their D&T experiences.

### **Sequencing and Progression:**

Pupils in EYFS will explore Art & Design through their continuous and enhanced provision.

All year groups follow the long-term plan for Art & Design which has a progressive programme in place for 3D sculpture/collage, printing and textiles with a progressive element of painting and or drawing to start off each.



## SEND in my subject area: Design & Technology

### What is in place in your subject area for teaching that subject to pupils with SEND

Cognition and Learning		Communication and Interaction	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
<p>Interpretation of designers' work.</p> <p>Reading/studying of designers' background and styles.</p> <p>Cognitive difficulties – ability to understand the content of formal art lessons</p> <p>Processing difficulties</p>	<p>Stem sentences – provide the language to the pupils so they can give opinions and know how to compare designers or designs.</p> <p>Dual coded word mats/resources/displays to support access</p> <p>Use of stories to support understanding, linking design to real life</p> <p>Key words displayed</p> <p>Use of shorter/less complex sentences in resources given</p> <p>Writing frames where possible</p>	<p>Expressing themselves – opinions using verbal communication</p> <p>Language difficulties may make pupils unable to access learning</p>	<p>Providing flashcards (dual coded) for the pupils to point to. IT resources to support accessibility/alternative ways for pupils to record their ideas and opinions</p> <p>Use of simple instructions – small steps</p> <p>Careful and appropriate modelling to support understanding</p> <p>Visual aids and dual coding</p> <p>Videos of examples and practice</p>

Physical and sensory		Social Emotional and Mental Health	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
<p>Fine motor skills/physical difficulties</p> <p>Tactile quality of materials</p>	<p>Choosing appropriate resources and manipulatives for each individual child's need; adapted scissors, thicker pencils.</p> <p>Provide additional ways to record info(video/ICT etc)</p> <p>Ensure any sensory difficulties are considered at the point of planning</p>	<p>Low self-esteem in design &amp; Technology abilities</p> <p>Social difficulties – may struggle with group work</p>	<p>Showcase different designers' work and a focus on the creation process rather than on the end result.</p> <p>Teaches language – that we are all designers.</p> <p>Open ended learning objectives – the skill not the design.</p> <p>Pre-teach key information so they feel prepared for the lesson and can be an 'expert'</p> <p>Carefully consider seating/buddy system, ensure those who need additional adult support have access to this particularly at the start</p> <p>Provide clear, specific instructions and outline expectations</p>

Non-Negotiables that need to be in place in all lessons/classrooms when teaching art

1. Dual coded displays/resources available to all pupils
2. Ensure outcomes are either open ended or pupils have a choice of how to present their work within that objective
3. All pupils given a means of expressing their view and opinions whether written, recorded, drawn etc.

# How can we differentiate in Design & Technology?

## How support can be given:

When choosing which aspect of D&T you are going to teach you may need to consider the following things:

The individual needs of the pupils.

If Physical dexterity is a challenge have thicker pencils or grips, hand grip scissors to support control.

- ❖ Cutting skills: Have adapted scissors available to aid grip, or have pieces already cut out.
- ❖ Designing: Have pre drawn/cut designs.
- ❖ Structure: pupils to be supported by a peer or adult to steady the structure to be joined.
- ❖ Food: Utensils designed to support success in cutting, grating. Recipes to follow.
- ❖ Textiles: choosing appropriate fabric, needle type & size, have lines drawn on the fabric to follow when stitching.
- ❖ Mechanisms: Have pre-cut parts ready to assemble with clear pictorial instructions.
- ❖ Electrical Systems: Clear pictorial instructions for each step. Support with dexterity as needed.
- ❖ Digital Technology: Plug in mouse, touch screen devices, peer/adult support.

All pupils can be taught the same aspect of Design & Technology at appropriate Key Stage:

- ❖ Structure
- ❖ Textile
- ❖ Mechanisms
- ❖ Food
- ❖ Electrical Systems
- ❖ Digital

How it is interpreted will be different for each pupil.

## How learning can be extended:

- ❖ Designing: Doing more detailed designs, showing developments as they make them.
- ❖ Structure: can they look more closely at their joining to develop other ways of doing it. Evaluating what they have done. How could it be improved?
- ❖ Textiles: Introducing more designs and stitches, finer needles and thread.
- ❖ Food: Being more adventurous with flavour choices and presentation.
- ❖ Mechanisms: Using a range of mechanics in their designs, building on previous learning.
- ❖ Electrical Systems: Using more complex circuit systems.
- ❖ Demonstrating to peers gives them the element of mastery.

# EYFS

Characteristics of Effective Teaching and Learning		
<p><b>Playing and Exploring</b> Finding out and exploring; Using what they know in their play Be willing to have a go</p>	<p><b>Active Learning</b> Being involved and concentrating Keeping on trying Enjoying and achieving what they set out to do</p>	<p><b>Creating and Thinking Critically</b> Having their own ideas Using what they already know to learn new things Choosing ways to do things and finding new ways</p>

Reception	Physical Development	<ul style="list-style-type: none"> <li>❖ Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> <li>❖ Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor</li> <li>❖ Develop overall body-strength, balance, coordination and agility</li> </ul>
	Expressive Arts and Design	<ul style="list-style-type: none"> <li>❖ Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>❖ Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>❖ Create collaboratively, sharing ideas, resources and skills.</li> </ul>

ELG	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"> <li>❖ Hold a pencil effectively in preparation for fluent writing using the tripod grip in almost all cases.</li> <li>❖ Use a range of small tools, including scissors, paintbrushes and cutlery.</li> <li>❖ Begin to show accuracy and care when drawing.</li> </ul>
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> <li>❖ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>❖ Share their creations, explaining the process they have used.</li> </ul>



# KS1

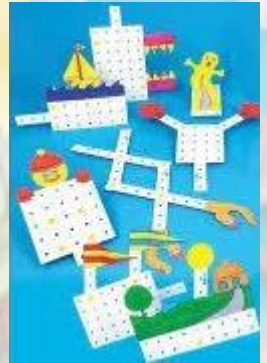
## Aims

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.

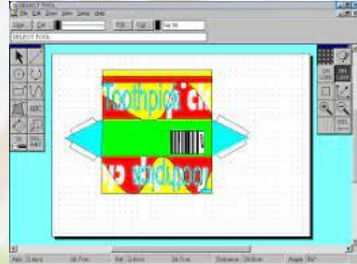
## Attainment Target

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.



Year 1/2		
Cycle A Mary Anning	Spring	Summer - Queens
<b>Food</b> – Primary Food Project Plan Bring on Breakfast (including cooking and nutrition requirements for KS1)	<b>Mechanisms</b> – Sliders & Levers explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products <b>Easter Card</b>	<b>Textiles</b> – Templates & joining techniques <b>Glove Puppet</b>
Cycle B – Autumn – Great Fire of London	Spring – Transport	Summer - Titanic
<b>Structures</b> – Freestanding Structures build structures, exploring how they can be made stronger, stiffer and more stable. <b>Homes</b>	<b>Mechanisms</b> – Wheels & Axles explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products <b>Moving Vehicle</b>	<b>Food</b> – Primary Food Project Plan Party Time (including cooking and nutrition requirements for KS1)

# LKS2



## 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 Target

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.

## Year 3/4

Cycle A – Historical Hambleton	Spring – British study since 1066	Summer – Overview of Ancient Civilisations
<b>Textiles</b> – 2D shape to 3D product <b>Shopping Bag</b>	<b>Electrical Systems</b> – Simple Circuits & switches (including programming & control) – <b>Reading Lamp</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> </ul>	<b>Food</b> – Primary Food Project Lovely Lunch (including cooking and nutrition requirements for KS2)
Cycle B – Autumn – Stone Age	Spring – Romans	Summer – Anglo Saxons
<b>Food</b> – Primary Food Project Get Baking (including cooking and nutrition requirements for KS2)	<b>Mechanical Systems</b> – Levers & linkages – <b>Moving picture/book</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>	<b>Structure</b> - Shell structures (including computer-aided design) – <b>Keep Safe Box</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul>

# UKS2



## 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 Target

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.

Year 5/6		
Cycle A – Vikings	Spring – Non-Euro contrast with Britain - Mayans	Summer – Beyond 1066/War
Structures – Frame structures – <b>Bird Hide</b> <input type="checkbox"/> apply their understanding of how to strengthen, stiffen and reinforce more complex structures	<b>Food</b> – Primary Food Project Grab and Go Celebrating culture & seasonality (including cooking & nutrition requirements for KS2)	<b>Electrical Systems-</b> More complex switches & circuits – <b>Steady Hands Game</b> <input type="checkbox"/> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
Cycle B – Autumn – Egyptians	Spring – Ancient Greece	Summer – Shang Dynasty
Mechanical Systems- Pulleys or gears and Cams – <b>Fairground Ride</b> <input type="checkbox"/> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	<b>Textiles-</b> Combining different fabric shapes (including computer-aided design) – <b>Bag with pockets and fastenings</b>	<b>Food</b> – Primary Food Project Serve a Salad Celebrating culture & seasonality (including cooking & nutrition requirements for KS2)

**EYFS:** Through their continued and enhanced provision, children in YR will have access to all of the aspects of Design and Technology which will be added to regularly to take on board seasonal changes and child interests.

**National Curriculum Objectives:**

- Explores what happens when they mix colours.
- Experiments to create different textures.
- Understands that different media can be combined to create new effects.
- Manipulates materials to achieve a planned effect.
- Uses simple tools and techniques competently and appropriately.
- Selects appropriate resources and adapts work where necessary.
- Selects tools and techniques needed to shape, assemble and join materials they are using.



Progression of Skills		
	Year R	Vocabulary
<b>Textiles – Templates and Joining</b>	Explore and use different fabrics. Cut and join fabrics with simple techniques. Think about the user and purpose of products.	Line, thick, thin, wavy, straight, Pencil Finger, stick, chalk, pastel, felt tip
<b>Food – Preparing Fruit and Vegetables</b>	Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils	Mark making tools, sponges, different brushes, respond, line, colour, texture, shape, 2D, observation, imagination, scale, size, fine motor skills
<b>Sliders and Leavers Structures – Freestanding</b>	Early experiences of working with paper and card to make simple flaps and hinges. Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. Experience of using construction kits to build walls, towers and frameworks. Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. Experience of different methods of joining card and paper.	Experiment, printing, media, understand, techniques
<b>Mechanisms – Wheels and Axles</b>	Assemble vehicles with moving wheels using construction kits. Explore moving vehicles through play. Gain some experience of designing, making and evaluating products for a specified user and purpose. Develop some cutting, joining and finishing skills with card.	Experiment, media, understand, glue, sticking, paper, fabric, natural materials, textural effects, observation, imagination Practise, threading skills, basic running stitches, understand, join, fabric, decorate

# National Curriculum Objectives



## **KS1 - National Curriculum Objectives:**

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

### **Design**

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

### **Make**

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

### **Evaluate**

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

### **Technical knowledge**

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

## **KS2 - National Curriculum Objectives:**

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

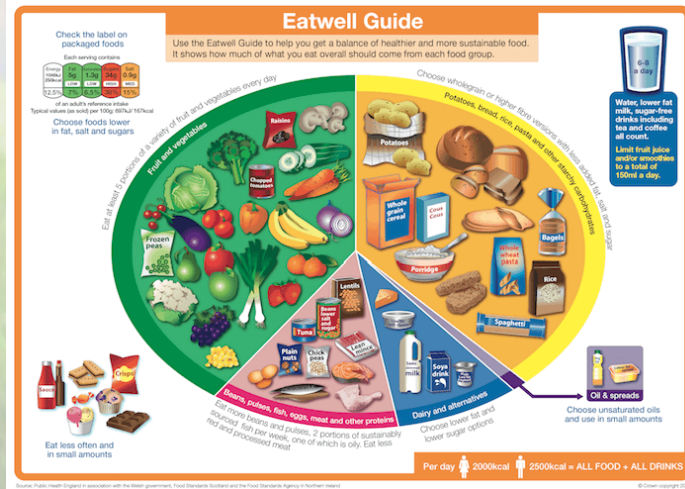
### **Evaluate**

- 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

# National Curriculum Objectives Cooking & Nutrition



## National Curriculum Objectives:

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

Pupils should be taught to:

### **Key stage 1**

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

### **Key stage 2**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

# KS1: Mary Anning

## National Curriculum Objectives:

### Design

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

### Key stage 1

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

## Vocabulary

- Fruits and vegetables: Apple, banana, berries, grapes, melon, orange, broccoli, spinach, tomato, avocado, baked beans.
- Carbohydrates (for energy): Toast, porridge (made with oats), rice, pasta, bagel, pancake, waffle, cereal. Wholemeal or whole-grain varieties are healthier options.
- Protein (for growth and repair): Eggs (boiled, scrambled), meat (bacon), beans, nuts, seeds, fish.
- Dairy (for strong bones): Milk, cheese, yoghurt.
- Equipment: Bowl, spoon, fork, knife, pan, chopping board.
- Actions: Prepare, chop, mix, stir, spread, pour, cook, eat.
- Health and taste: Healthy, nutritious, balanced, tasty, delicious, yummy, scrumptious, succulent.
- Texture: Crunchy, soft, juicy, runny, smooth, chewy.
- Nutrients: Vitamins, minerals, calcium, fibre.
- Diet: Balanced diet, 5 a day.
- Purpose: Energy, grow, repair.

HIAS Support material  
Primary Food Project Plan  
Bring on Breakfast



Food - Year 1 & 2 Primary Food Project – Bring on Breakfast	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Design appealing products for a particular user based on simple design criteria. *Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li><input type="checkbox"/> Communicate these ideas through talk and drawings.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> <li><input type="checkbox"/> Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> <li><input type="checkbox"/> Evaluate ideas and finished products against design criteria, including intended user and purpose.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pupils will develop their knowledge of basic healthy eating messages.</li> <li><input type="checkbox"/> Pupils will carry out tasting to help them plan a breakfast dish.</li> <li><input type="checkbox"/> Pupils will develop the skills to safely use a range of basic cooking equipment (e.g. knife, chopping board, spoon, fork, bowl).</li> <li><input type="checkbox"/> Pupils will plan, make and evaluate their breakfast dish.</li> </ul>

## LKS2: Historical Hambledon

### KS2 - National Curriculum Objectives:

#### 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

### HIAS Support material:

Projects on a page – 3\_4 2D shape to 3D product



Textiles Year 3 & 4 Shopping Bag	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Design a functional and appealing product for a chosen user and purpose based on simple design criteria. *Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.</li> <li><input type="checkbox"/> Select from and use textiles according to their characteristics.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li><input type="checkbox"/> Evaluate their ideas throughout and their final products against original design criteria.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li><input type="checkbox"/> Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li><input type="checkbox"/> Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project.</li> </ul>

### Vocabulary

**Textiles:** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces

## UKS2: Vikings



### KS2 - National Curriculum Objectives:

#### 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

### Vocabulary

**Structures:** Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional

### HIAS Support material

- ❑ Projects on a page -5\_6 Frame Structures

### Structures - Year 5 & 6 Bird Hide

#### Designing

- ❑ Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.
- ❑ Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- ❑ Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

#### Making

- ❑ Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.
- ❑ Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- ❑ Use finishing and decorative techniques suitable for the product they are designing and making.

#### Evaluating

- ❑ Investigate and evaluate a range of existing frame structures.
- ❑ Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- ❑ Research key events and individuals relevant to frame structures.

#### Technical Knowledge

- ❑ Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- ❑ Know and use technical vocabulary relevant to the project.

# Cycle A – Spring Term

## KS1

### Possible HIAS Support material

Projects on a page -1\_2 Mechanisms / Sliders and Levers

### **KS2 - National Curriculum Objectives:**

#### **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**

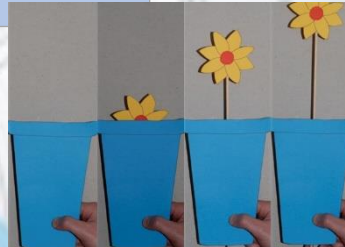
- ❑ Investigate and analyse a range of existing products
- ❑ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- ❑ understand how key events and individuals in design and technology have helped shape the world

#### **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]

### **Vocabulary**

**Sliders & Levers** slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards design, make, evaluate, user, purpose, ideas, design criteria, product, function



### **Mechanisms - Year 1/2 Sliders & Levers – Easter Card**

#### **Designing**

- ❑ Generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- ❑ Develop, model and communicate their ideas through drawings and mock-ups with card and paper.

#### **Making**

- ❑ Plan by suggesting what to do next. Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.
- ❑ Use simple finishing techniques suitable for the product they are creating.

#### **Evaluating**

- ❑ Explore a range of existing books and everyday products that use simple sliders and levers.
- ❑ Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

#### **Technical Knowledge**

- ❑ Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. \*Know and use technical vocabulary relevant to the project.

## LKS2: British Study Beyond 1066

Electrical Systems - Year 3 & 4 Reading Lamp	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Gather information about needs and wants and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</li> <li><input type="checkbox"/> Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Order the main stages of making.</li> <li><input type="checkbox"/> Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</li> <li><input type="checkbox"/> Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Investigate and analyse a range of existing battery- powered products.</li> <li><input type="checkbox"/> Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</li> <li><input type="checkbox"/> Apply their understanding of computing to program and control their products. *Know and use technical vocabulary relevant to the project.</li> </ul>



### Vocabulary

**Electrical Systems:** series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device user, purpose, function, prototype, design criteria, innovative, appealing, design brief

### HIAS Support material

- Projects on a page -3\_4 Simple circuits and switches See also HIAS Doc - KS2 (Early) Lamps and Lanterns

### KS2 - National Curriculum Objectives:

#### 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

- 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

# UKS2: Non-Euro contrast with Britain

## National Curriculum Objectives:

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

### Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

## Vocabulary

Ingredients, nutrition, weight, cost, peel, grate, cut using the bridge hold and fork secure/claw grip, cutting, shaping, joining and finishing, Sensory vocabulary.



Food - Year 5 & 6 Celebrating culture & seasonality – Grab and Go	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. *Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose.</li> <li><input type="checkbox"/> Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> <li><input type="checkbox"/> Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li><input type="checkbox"/> Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out sensory evaluations of a range of relevant products and ingredients.</li> <li><input type="checkbox"/> Record the evaluations using e.g. Tables /graphs /charts such as star diagrams.</li> <li><input type="checkbox"/> Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li><input type="checkbox"/> Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pupils will learn about nutrients and their role in a healthy, varied diet.</li> <li><input type="checkbox"/> Pupils will read and interpret nutrition information labels.</li> <li><input type="checkbox"/> Pupils will investigate products and undertake research to generate ideas for their own healthier product.</li> <li><input type="checkbox"/> Pupils will discuss the purpose and features of advertisements.</li> <li><input type="checkbox"/> Pupils will design and make a product safely and hygienically for an intended purpose, based on design criteria.</li> <li><input type="checkbox"/> Pupils will evaluate their product.</li> </ul>

# KS1: Queens

Possible HIAS Support material  
Glove Puppets



## KS1 - National Curriculum Objectives:

### Design

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

### Make

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

### Evaluate

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

### Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable

Textiles - Year 1 & 2 Glove Puppet	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li><input type="checkbox"/> Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.</li> <li><input type="checkbox"/> Select from and use textiles according to their characteristics.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li><input type="checkbox"/> Evaluate their ideas throughout and their final products against original design criteria.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li><input type="checkbox"/> Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li><input type="checkbox"/> Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project.</li> </ul>

## Vocabulary

**Textiles:** names of existing products, joining and finishing techniques, tools, fabrics and components template, pattern pieces, mark out, join, decorate, finish features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function

# LKS2: Overview of Ancient Civilisations

**HIAS Support material**  
 Primary Food Project Plan  
**Lovely Lunch – Healthy and varied diet**



Food- Year 3 & 4 Healthy and varied diet – Lovely Lunch	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li><input type="checkbox"/> Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose.</li> <li><input type="checkbox"/> Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> <li><input type="checkbox"/> Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li><input type="checkbox"/> Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out sensory evaluations of a range of relevant products and ingredients.</li> <li><input type="checkbox"/> Record the evaluations using e.g.</li> <li><input type="checkbox"/> Tables /graphs /charts such as star diagrams.</li> <li><input type="checkbox"/> Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li><input type="checkbox"/> Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pupils will develop and apply their knowledge and understanding of ingredients and healthy eating.</li> <li><input type="checkbox"/> Pupils will learn and practise food preparation and cooking skills.</li> <li><input type="checkbox"/> Pupils will design and create dishes for an intended user based on research.</li> <li><input type="checkbox"/> Pupils will make and evaluate their dish</li> </ul>

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

**Key stage 2**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

**Vocabulary**  
 Names of ingredients used and types of bread.  
 Spreading, cutting, snipping, slicing, grating, assemble, flavours, texture, consistency, seasonality, processed, tinned, fresh.  
 Equipment: Tablecloths, Chopping boards, Table knives, Table forks, vegetable knives, Cling film

## UKS2: Beyond 1066/War

### Electrical Systems - Year 5 & 6 Steady Hands Game

<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Use research to develop a design specification for a functional product that responds automatically to changes in the environment.</li> <li><input type="checkbox"/> Take account of constraints including time, resources and cost.</li> <li><input type="checkbox"/> Generate and develop innovative ideas and share and clarify these through discussion.</li> <li><input type="checkbox"/> Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</li> <li><input type="checkbox"/> Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</li> <li><input type="checkbox"/> Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Continually evaluate and modify the working features of the product to match the initial design specification.</li> <li><input type="checkbox"/> Test the system to demonstrate its effectiveness for the intended user and purpose.</li> <li><input type="checkbox"/> Investigate famous inventors who developed ground-breaking electrical systems and components.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand and use electrical systems in their products.</li> <li><input type="checkbox"/> Apply their understanding of computing to program, monitor and control their products.</li> <li><input type="checkbox"/> Know and use technical vocabulary relevant to the project.</li> </ul>

### Vocabulary

**Electrical Systems:** reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit

### HIAS Support material

- Projects on a page -5\_6 More complex switches and circuits
- See also STEM Steady Hands activity sheet



### KS2 - National Curriculum Objectives:

#### 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

# KS1: Great fire of London

## Possible HIAS Support material

Projects on a page -1\_2 Free standing structures  
Also – HIAS document for KS1 Free Standing Structures - Homes

### KS1 - National Curriculum Objectives:

#### Design

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

#### Make

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

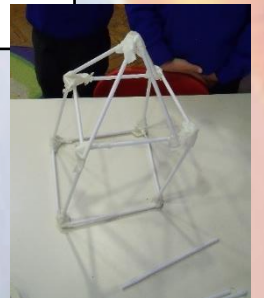
#### Evaluate

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

#### Technical knowledge

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

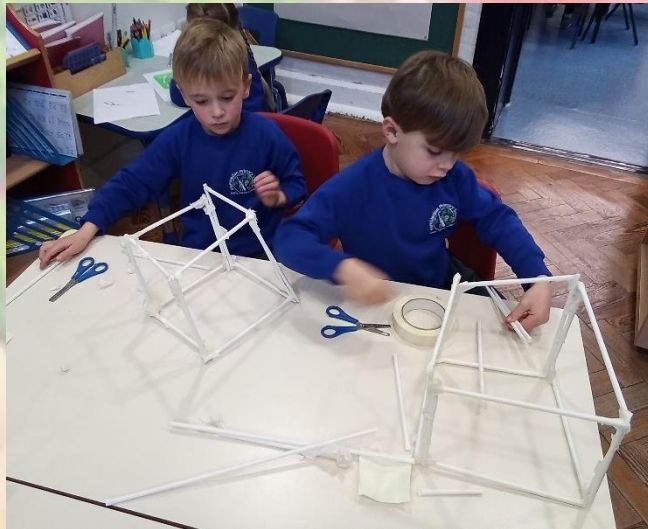
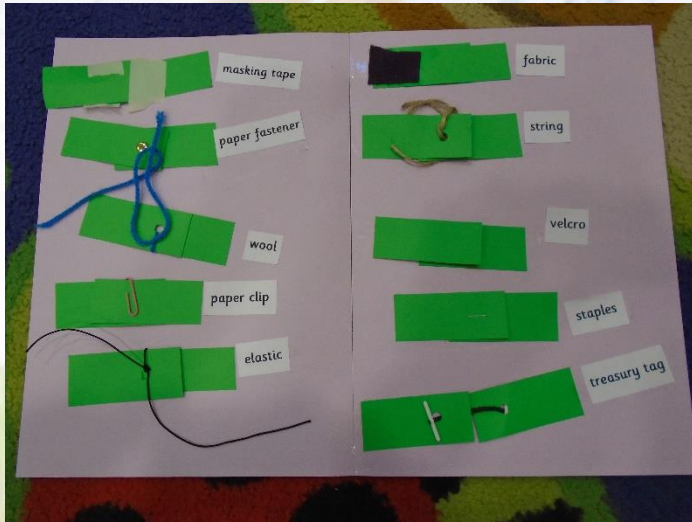
Structures - Year 1 & 2 Homes	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li><input type="checkbox"/> Develop, model and communicate their ideas through talking, mock- ups and drawings.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Plan by suggesting what to do next.</li> <li><input type="checkbox"/> Select and use tools, skills and techniques suitable for the task, explaining their choices. Select new and reclaimed materials and construction kits to build their structures.</li> <li><input type="checkbox"/> Use simple finishing techniques suitable for the structure they are creating.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.</li> <li><input type="checkbox"/> Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Know how to make freestanding structures stronger, stiffer and more stable.</li> <li><input type="checkbox"/> Know and use technical vocabulary relevant to the project.</li> </ul>



## Vocabulary

**Structures:** cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic  
circle, triangle, square, rectangle, cuboid, cube, cylinder  
design, make, evaluate, user, purpose, ideas, design criteria, product, function

# KS1 Joining for structure



## LKS2: Stone Age

### Food- Year 3 & 4

#### Healthy and varied diet – Get Baking

<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li><input type="checkbox"/> Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose.</li> <li><input type="checkbox"/> Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> <li><input type="checkbox"/> Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li><input type="checkbox"/> Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out sensory evaluations of a range of relevant products and ingredients.</li> <li><input type="checkbox"/> Record the evaluations using e.g.</li> <li><input type="checkbox"/> Tables /graphs /charts such as star diagrams.</li> <li><input type="checkbox"/> Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li><input type="checkbox"/> Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pupils will investigate bread including how it is made and the varieties found around the world.</li> <li><input type="checkbox"/> Pupils will learn about the role of bread, and meals which include bread, in a healthy, varied diet.</li> <li><input type="checkbox"/> Pupils will practise bread making skills while working safely and hygienically.</li> <li><input type="checkbox"/> Pupils will plan, make and evaluate their own bread dish.</li> <li><input type="checkbox"/> Outcome</li> <li><input type="checkbox"/> follow their bread plan and apply the food preparation skills they have learned to make their bread.</li> <li><input type="checkbox"/> evaluate their bread against the design criteria and suggest improvements.</li> </ul>

**HIAS Support material**  
 Primary Food Project Plan  
**Get Baking**  
**Healthy and varied diet**



### National Curriculum Objectives:

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

### **Key stage 2**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

### **Vocabulary**

**Ingredients:** Dough, mixture, bread, taste, texture, Ingredients, Flour, yeast, raising agent, water, wheat

**Equipment:** Bowl, measure, scales, measuring spoon, measuring jug, baking tray, oven, oven-gloves,

**Processes & Actions:** sieve, mix, combine, knead, shape, prove, rise, bake, cool, slice, Gluten, Carbon dioxide. (The gas produced by the yeast that gets trapped and makes the dough rise.)

**Descriptive words:** Rough, smooth, sticky, soft, elastic, score, crusty, texture, taste, improvement, evaluate,

## UKS2: Egyptians

### KS2 - National Curriculum Objectives:

#### 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]
- ❑ apply their understanding of computing to program, monitor and control their products

### Possible HIAS Support material

Projects on a page -5-6 Pulleys or Gears

See also HIAS document Moving Toys and cams Mechanisms



Mechanical Systems - Year 5 & 6 Fairground Ride	
<b>Designing</b>	<ul style="list-style-type: none"> <li>❑ Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web- based resources.</li> <li>❑ Develop a simple design specification to guide their thinking.</li> <li>❑ Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li>❑ Produce detailed lists of tools, equipment and materials.</li> <li>❑ Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>❑ Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished.</li> <li>❑ Work within the constraints of time, resources and cost.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li>❑ Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>❑ Consider the views of others to improve their work.</li> <li>❑ Investigate famous manufacturing and engineering companies relevant to the project.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li>❑ Understand that mechanical and electrical systems have an input, process and an output.</li> <li>❑ Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.</li> <li>❑ Know and use technical vocabulary relevant to the project.</li> </ul>

**Vocabulary - Mechanical Systems:** pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief

# KS1: Transport

**Possible HIAS Support material**

- Vehicles – Wheels and Axles
- Projects on a page – Wheels & Axles
- Sliders & Levers

**KS1 - National Curriculum Objectives:**

**Design**

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

**Make**

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

**Evaluate**

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

**Technical knowledge**

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

Year 2 Mechanisms – Emergency Vehicle	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate initial ideas and simple design criteria through talking and using own experiences.</li> <li><input type="checkbox"/> Develop and communicate ideas through drawings and mock-ups.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li><input type="checkbox"/> Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explore and evaluate a range of products with wheels and axles.</li> <li><input type="checkbox"/> Evaluate their ideas throughout and their products against original criteria.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles.</li> <li><input type="checkbox"/> Know and use technical vocabulary relevant to the project.</li> </ul>

**Vocabulary**

**Wheels & Axels:** vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used



LO Design a vehicle  
I can design a vehicle and label it.  
I can show wheels and axles



### My Vehicle Design

My vehicle is for a fireman



## Possible HIAS Support material

- ❑ Projects on a page -3\_4 Levers and Linkages

# LKS2: Romans

<b>Mechanical Systems – Levers &amp; Linkages- Year 3 &amp; 4</b>	
<b>Moving Picture / Book</b>	
<b>Designing</b>	<ul style="list-style-type: none"><li>❑ Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.</li><li>❑ Use annotated sketches and prototypes to develop, model and communicate ideas.</li></ul>
<b>Making</b>	<ul style="list-style-type: none"><li>❑ Order the main stages of making.</li><li>❑ Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.</li><li>❑ Select from and use finishing techniques suitable for the product they are creating.</li></ul>
<b>Evaluating</b>	<ul style="list-style-type: none"><li>❑ Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li><li>❑ Evaluate their own products and ideas against criteria and user needs, as they design and make.</li></ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"><li>❑ Understand and use lever and linkage mechanisms.</li><li>❑ Distinguish between fixed and loose pivots.</li><li>❑ Know and use technical vocabulary relevant to the project.</li></ul>

## Vocabulary

**Mechanical Systems:** Mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function, prototype, design criteria, innovative, appealing, design brief

## KS2 - National Curriculum Objectives:

### 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]
- ❑ apply their understanding of computing to program, monitor and control their products

## UKS2: Ancient Greece

### Possible HIAS Support material

- Money Containers
- Projects on a page - Combining different fabric shapes



### KS2 - National Curriculum Objectives:

#### 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

### Vocabulary

**Textiles:** Seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

### Textiles - Year 5 & 6

#### Bag with pockets & fasteners

<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li><input type="checkbox"/> Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.</li> <li><input type="checkbox"/> Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Produce detailed lists of equipment and fabrics relevant to their tasks. *Formulate step-by-step plans and, if appropriate, allocate tasks</li> <li><input type="checkbox"/> within a team.</li> <li><input type="checkbox"/> Select from and use a range of tools and equipment to make products that are accurately assembled and well finished.</li> <li><input type="checkbox"/> Work within the constraints of time, resources and cost.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Investigate and analyse textile products linked to their final product.</li> <li><input type="checkbox"/> Compare the final product to the original design specification.</li> <li><input type="checkbox"/> Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li><input type="checkbox"/> Consider the views of others to improve their work.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li><input type="checkbox"/> Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> </ul>



# KS1: Titanic

### **National Curriculum Objectives:**

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

### **Key stage 1**

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

### **Vocabulary**

chopping boards,  
cutters,  
paper plate,  
small mixing bowl,  
spoons,  
small kitchen,  
scissors,  
table knives,  
Ingredient names.  
Eat Well plate  
Food hygiene

**HIAS Support material**  
Primary Food Project Plan  
**Party Time**



<b>Food - Year 1 &amp; 2 Party Time</b>	
<b>Designing</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> Design appealing products for a particular user based on simple design criteria. *Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li><li><input type="checkbox"/> Communicate these ideas through talk and drawings.</li></ul>
<b>Making</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li><li><input type="checkbox"/> Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li></ul>
<b>Evaluating</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li><li><input type="checkbox"/> Evaluate ideas and finished products against design criteria, including intended user and purpose.</li></ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> Pupils will develop knowledge about healthy eating and where food comes from.</li><li><input type="checkbox"/> Pupils will be aware that others may have different dietary needs so dishes may need to be modified.</li><li><input type="checkbox"/> Pupils will learn how to get ready to cook and prepare ingredients safely and hygienically.</li><li><input type="checkbox"/> Pupils will plan, make and evaluation their party dish.</li></ul>

## LKS2: Anglo Saxons

### Possible HIAS Support material

- Projects on a page – Shell Structures



Shell Structure (including computer aided design)- Year 3 & 4 Keep Safe Box	
<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.</li> <li><input type="checkbox"/> Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Order the main stages of making.</li> <li><input type="checkbox"/> Use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy.</li> <li><input type="checkbox"/> Explain their choice of materials according to functional properties and aesthetic qualities.</li> <li><input type="checkbox"/> Use finishing techniques suitable for the product they are creating.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.</li> <li><input type="checkbox"/> Test and evaluate their own products against design criteria and the intended user and purpose.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li><input type="checkbox"/> Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> <li><input type="checkbox"/> Know and use technical vocabulary relevant to the project.</li> </ul>

### Vocabulary

**Structures:** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype

### KS2 - National Curriculum Objectives:

#### 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]

## UKS2: Shang Dynasty

### Possible HIAS Support material

Primary Food Project Plan

#### Serve a Salad

Celebrating culture & seasonality



### Food - Year 5 & 6

#### Celebrating culture & seasonality – Serve a Salad

<b>Designing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li><input type="checkbox"/> Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose.</li> <li><input type="checkbox"/> Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul>
<b>Making</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> <li><input type="checkbox"/> Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li><input type="checkbox"/> Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul>
<b>Evaluating</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out sensory evaluations of a range of relevant products and ingredients.</li> <li><input type="checkbox"/> Record the evaluations using e.g. tables/graphs/charts such as star diagrams.</li> <li><input type="checkbox"/> Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li><input type="checkbox"/> Understand how key chefs have influenced eating habits to promote varied and healthy diets.</li> </ul>
<b>Technical Knowledge</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pupils will use acquired healthy eating knowledge to design and make a salad which contributes to a healthy, varied diet.</li> <li><input type="checkbox"/> Pupils will explore a variety of salads and salad ingredients associated with different countries around the world.</li> <li><input type="checkbox"/> Pupils will develop and practise their food skills by preparing ingredients safely and hygienically.</li> <li><input type="checkbox"/> Pupils will design and make a salad for their intended recipient based on their experiences and research.</li> <li><input type="checkbox"/> Pupils will make and evaluate their salad.</li> </ul>

### National Curriculum Objectives:

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

#### Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

### Vocabulary

Ingredients, names of fruit and or vegetables to be used.  
Herbs and spices, pulses, vitamins, nutrients, nutrition, healthy, varied, allergy, intolerance, savoury, source, seasonality utensils, chop, grate, combine, stir, pour, mix, sprinkle, design specification, innovative, research, evaluate, design brief, Eat-Well Plate, Carbohydrates, Protein, Dairy,

