St Mary's C of E SCHOOL

LEARNING WITH HOPE

DESIGN AND TECHNOLOGY AND WORKING WITH FOOD POLICY

Agreed by Governors:
Review Date:

Written by Anita Griffiths

'Good buildings come from good people, and all problems are solved by good design.'

Stephen Gardiner

"Design is a funny word. Some people think design means how it looks. But of course, if you look deeper, it's really how it works."

Steve Jobs

"Technology makes possibilities. Design makes solutions."

John Maeda

Rationale

At St Mary's CE Primary School, we believe Design and Technology prepares children to deal with tomorrows rapidly changing world. It encourages children to become independent, creative problem solvers and thinkers as individuals and part of a team. It enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems. Through the study of Design and Technology, they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. This allows them to reflect on and evaluate past and present technology, it's uses and impacts.

Curriculum Statement

Intent

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At St Mary's CE Primary School, we encourage children to use their creativity and imagination, to design and make products that **solve real** and **relevant problems** within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

Implementation

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making. The children work in a range of relevant contexts (for example home, school, leisure, culture, enterprise, industry and the wider environment).

When designing and making, the children are 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 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
- understand and use electrical systems in their products
- apply their understanding of computing to program, monitor and control their products

Key skills and key knowledge for D and T have been mapped across the school to ensure progression between year groups. This also ensures that there is a context for the children's work in Design and Technology; that they learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study.

When teaching Design and technology lessons, teachers are given the freedom of how to do this; weekly lessons or through blocked lessons

Impact

We ensure the children

- 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 and 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. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child

Children 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 make an essential contribution to the creativity, culture, wealth and well-being of the nation.

2. Teaching and Learning

Design and Technology will engage the children in a broad range of designing and making activities which involve a variety of methods of communication; speaking, designing, drawing, assembling, making, writing and using computer technology. Projects are taught in blocks which allows for more effective learning in which teachers can focus on teaching and developing DT skills, allowing children to develop their ideas and techniques. Units of work have been selected and planned to ensure a balance of materials, skills, knowledge and understanding throughout each Key Stage. Units of work are planned to include designing and making assignments (DMAs) supported by focused practical tasks or skills teaching (FPTs) and work involving reviewing existing products (IDEAs). All children should have a breadth and balance of experience.

3. Assessment

Children's skills will be assessed and developed by the teacher during lessons and through critical discussion at the end of each unit. No formal assessment is recorded. Photographic albums will reflect a range of work across key stages, and displays to celebrate and exhibit the work of children, of all abilities.

4. Planning and Resources

On-line DT plans and resources, produced by the Design and Technology Association, are available on the shared drive. Teachers also collaborate within key stages, to design schemes of work to support specific bespoke projects. Teachers will either select materials needed to complete a DT project from the DT Resource area, purchase any materials needed for the

design, construction and evaluation of a project or decide to use recycled materials or junk modelling to help complete a project. Children are taught to use tools and equipment in a sensible, safe and efficient manner.

5. Organisation

Design and Technology planning is mapped in blocks on the Whole School Curriculum Overview. Units of work are planned to include a balance of designing and making assignments (DMAs), focussed teaching key skills (FPTs) and work involving reviewing existing products (IDEAs). Links with other subject areas may be made where appropriate.

6. EYFS

The staff will plan for children to experience creative opportunities and develop key skills and techniques within the EYFS curriculum. There will be a focus on developing fine motor skills and learning how to plan, design and produce the finished project. Preschool and Reception classes will be, where appropriate, included in whole school projects, workshops, events and competitions associated with Design and Technology.

7. KS1 and KS2

Teachers will plan for lessons so that children will learn to design purposeful, functional, appealing products for themselves and others based on design criteria and to communicate their ideas through talking and drawing. However, Design Technology is about the process (where the children learn) rather than the polished outcome. They learn to select from and use a range of tools and equipment to perform practical tasks and to choose from a wide range of materials and components. They also learn to explore and evaluate their design and product.

8. Equal Opportunities

Whole school policy on equal opportunities will be adhered to in Design and Technology activities. Teachers ensure that children have access to the range of Design and Technology activities and use opportunities within Design and Technology to challenge stereotypes. Children are encouraged and supported to develop their Design and Technology capability using a range of materials. Children with special needs or disabilities will be differentiated for and supported appropriately, to ensure development of skills and equal access to the Design and Technology curriculum.

9. Inclusion

All children will be supported through differentiation, adaptation or adult support, to enable equal access to learning in Design and Technology.

10. Role of the Subject Leader

The subject leader will delelop the long and medium term plan and progression of Design Technology across the school and where possible link it to other subjects, monitor the teaching and learning of Design and Technology across the school; ensuring a high quality, broad and stimulating curriculum. They will also support the teachers with appropriate CPD and maintain a range of good-quality tools and signpost appropriate resources, enabling teachers to resource and teach effectively.

11. Parents and Governors
We encourage all parents, carers and Governors to support and assist with whole school events and Design and Technology projects.

This policy will be reviewed annually by the Governing body

Policy Agreed:
Review Date:

Working with Food Policy 2020

Rationale

At St Mary's CE Primary School we recognise the importance of food in our lives. Learning about food and having an interest in it encourages children in the foods they eat. We know that healthy eating is vital for good health and we understand that there is a strong link between a healthy diet and effective learning. The school is dedicated to providing an environment that promotes healthy eating and enabling pupils to make informed choices about the food they eat. Working with food and providing children with opportunities to sample different foods has an important role to play in enriching our social development and increasing our appreciation of cultural diversity as well as widening children's experience of a range of foods.

Aims

1. To provide children with the opportunity to learn about health, nutrition and well being through the taught curriculum.
2. To increase children's knowledge of where their food comes from and how this will impact upon their own lives and environment.
3. To maintain or improve the health of the children through education – by increasing knowledge and understanding of what constitutes a balanced diet and how to ensure that food is prepared healthily and safely.
4. To ensure that working with food in school reflects the ethical and medical needs of staff and children, eg catering for the needs of religious groups, vegetarians and people with specific food-related allergies.
5. To ensure that we give children consistent messages about food and health.
6. To make working with food an enjoyable, safe and sociable experience.
7. To introduce and promote healthy eating practices and help to influence children's eating habits through increasing their knowledge of food issues.
8. To teach the **core competences** of cooking throughout the school, showing clear progression and developing skills in preparing and cooking food from Reception to Year 6.

Objectives

Food and Nutrition now appears in the National Curriculum (2014) as part of the Design and Technology curriculum. As well as DT, there are many opportunities throughout the curriculum for teaching children about issues related to food, nutrition and hygiene when working with food. These aims will be met in lessons through:

1. A cross-curricular approach

The importance of a balanced diet is taught in DT, Science and PSHE. Aspects as to where food comes from and cultural aspects of food can be covered in DT, RE, Science, Geography

and History. Writing recipes and instructions for making can be taught in English. Working out prices and costing can be covered in Maths.

2. **Themed days**, eg Pancake Day, Chinese New Year

3. **Themed weeks**, eg, Healthy Schools Week,

4. **As part of the Design and Technology curriculum.**

In Design and Technology children learn food preparation and handling skills, food hygiene, analysing existing products and designing and making their own food products.

5. **Tasting Sessions and sampling and evaluating**, as part of our investigation into different foods,

Health and Safety

Teachers should be aware about which hygiene and safety measures are necessary and how to teach children about them. This includes developing knowledge and understanding of health and safety as consumers and as food handlers.

1. Children will be taught to wash their hands before working with food and after the lesson.
2. Long hair must be tied back.
3. Children should be reminded not to touch their mouths, ears, noses, hair or eyes whilst working with food and if this does occur they are to wash their hands.
4. All surfaces used for food preparation should be cleaned thoroughly with hot, soapy water and prepared for food handling.
5. Children should be taught the correct and safe way to handle tools and equipment needed for working with food, eg knives, graters, peelers and children should be supervised when using these items of equipment.
6. Children should be encouraged to understand the implications of health and safety issues both as designers and consumers.
7. Children should be taught how to carry out simple risk assessments of their own rather than expecting this to be done for them. This is part of developing safety awareness and good working practices.
8. All staff and volunteer help involved in preparation of food need to be aware of food safety and hygiene issues.
9. Spillages must be cleared up immediately.
10. Appropriate food safety precautions are taken when food is prepared or stored.
11. If deemed necessary, clean aprons should be worn.

Food Allergy and Intolerance

There are several children at our school who have food allergies and some who are intolerant to certain foods. These must be considered carefully before embarking on a project of

working with food to ensure the health and safety of all children. If necessary, alternative foods should be provided to avoid any risks to the children.

Special Dietary Requirements

Many children have special dietary requirements due to religious beliefs and cultural practices. These must be considered carefully and alternative choices of food offered as required. In some instances children may need to provide their own food in order for them to take part in these occasions.

Each member of staff must be aware of any child with a special dietary requirement or food allergy or food intolerance and communicate with the parents before embarking on a project that requires working with food.

Appendix

Core competences for children and young people aged 5-11 years:

A framework of skills and knowledge around food, diet and physical activity

Core competences for children and young people aged 5-11 years

- The competences represent core skills and knowledge around the themes of Diet (food and drink), Consumer Awareness, Cooking (Food Preparation and Handling skills), Food Safety and Active Lifestyles (physical activity) and provide an essential benchmark.
- The competences are progressive and cumulative from one age phase to the next.
- They could be met at home, school or through other activities.
- They show essential knowledge and capability – they are neither a curriculum nor an examination specification.
- The competences reflect UK-wide practice.
- Their aim is to help children and young people to develop the skills and knowledge to make and implement healthy food choices.

	By the age of 7, children should:	By the age of 11, children should:
Diet (food and drink)	… recognise that food and water are essential for life. … be aware that we all need a balanced and varied diet to grow, be active and maintain health, and that we need to eat more of some foods than others, e.g. as depicted in *the eatwell guide.* … be aware that being active and looking after yourself are important for health, e.g. brushing teeth twice a day. …know that it is important to eat breakfast every day. … know that some people eat or avoid certain foods for different reasons, e.g. due to allergy/intolerance, religion. …drink plenty and not get thirsty, e.g. drink 6-8 glasses a day.	… make food choices based on the current healthy eating advice and understand that a healthy diet is made up from a variety and balance of different food and drinks, as depicted in *the eatwell guide.* … be aware of the importance of a healthy and balanced diet, good oral health and being physically active for health and wellbeing. …know that food and drinks provide energy and in different amounts … know that a variety of food is needed in the diet because different foods provide different substances required for our health, namely nutrients (carbohydrate, protein, fat, vitamins and minerals), water and fibre. … be aware that food needs change and that some people eat or avoid certain foods, e.g. allergy/intolerance or religious belief. …know that it is important to drink regularly throughout the day to stay hydrated.

	By the age of 7, children should:	By the age of 11, children should:
Consumer Awareness *Food origins*	… recognise that all food comes from plants or animals. …understand and value where food comes from, e.g. a farm, the sea. … recognise that food can be purchased or grown at home or at school.	… understand where and how a variety of ingredients are grown, reared, caught and processed. …know the basic steps in the producing food.
Food choice	… be able to talk about which foods they like or dislike. … know that people choose different types of food, based on who they are with, preferences, season, time of day, allergy/intolerance, religion and occasion (including celebrations). …be aware that different settings may affect food and drink choice, e.g. home, school, eating out.	… consider cost when helping to shop for food and cook at home. … explore the factors involved in food and drink choice and how this may be influenced by availability, season, need, cost, minimal packaging, where the food is produced, culture, religion, allergy/intolerance and peer-pressure. … be aware that advertising can influence what they choose to eat. …be aware that it is important to choose an appropriate portion size for their needs.
Food labelling	… be aware that some foods have labels which provide information to help when making a choice.	… read and make use of the main information on food and drink labels.

	By the age of 7, children should:	By the age of 11, children should:
Cooking (Food Preparation and Handling Skills)	… recognise and taste a range of familiar ingredients, e.g. fruit, vegetables, cereals, dairy, meat, eggs, fish, potatoes. … name and use a range of basic tools safely, e.g. small knife, chopping board, measuring spoon. .. use a range of food preparation skills with supervision, e.g. peeling, slicing, mixing, scooping, grating, spreading. … with help prepare a range of healthy dishes and drinks safely and hygienically. … avoid wasting food during preparation and cooking and recycle food packaging. …be able to eat sociably with others.	… name, taste and prepare a broad range of ingredients and healthy recipes, reflecting cultural diversity. … select and use appropriate tools and equipment safely when preparing and cooking food. … demonstrate an increasing range of food preparation skills, e.g. accurate weighing and measuring, kneading. … know how to store, prepare and cook a variety of predominantly savoury dishes safely and hygienically. … actively minimise food waste, be aware of portion sizes, compost fruit and vegetables and recycle food packaging. …appreciate the value of eating together with family and friends.

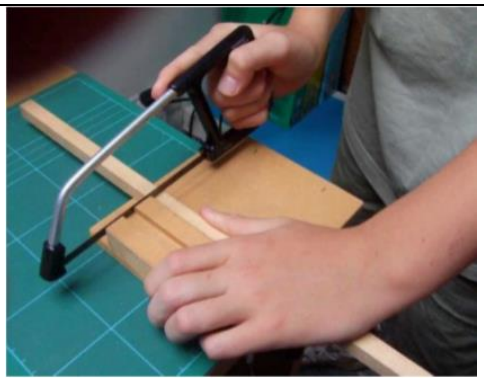
	By the age of 7, children should:	By the age of 11, children should:
Food Safety	… recognise the importance of preparing and cooking food safely and hygienically, e.g. handwashing, cleaning up regularly, keep work surfaces clean. … be able to get ready to cook, e.g. tie back long hair, wash hands, wear an apron. … be aware that food purchased or cooked needs to be stored in different ways to keep it safe, e.g. fridge, freezer.	… know that food safety means preventing contamination, spoilage and decay when handling and storing food, so that it is safe to eat. … demonstrate good food safety practices when getting ready to store, prepare and cook food, e.g. keep raw meat away from other food, thorough handwashing. …understand the use of date-marks and storage instructions on food and drink labels.

	By the age of 7, children should:	By the age of 11, children should:
Active Lifestyles (physical activity)	…know that an active lifestyle is good for health. …know how to get plenty of physical activity throughout the day during their normal routine. …choose activities that they enjoy. …take opportunities to take part in physical activity/sport. …know that sitting down for too long at a stretch is not good for the body. …drink more when being active.	…know how much physical activity they should do in a day, the benefits of vigorous intensity activity, and know how they could achieve this in practice. …know what it feels like to be active at a moderate and vigorous intensity. …be able to take part in more formalised types of physical activity. …know the basics of how physical activity affects their health. …know that being physically active uses energy. …understand how physical activity helps to build physical confidence, which contributes to a positive sense of themselves. …be aware that doing regular physical activity makes their body fitter and stronger. …know that the body uses more water when being physically active and this needs to be replaced.

DT Risk Assessment for St Mary's CE

Task, activity or environment being assessed	What is the hazard presented, or that may be generated?	Existing controls to either eliminate or reduce the risk of the accident happening	What is the probability of an accident happening?	What is the risk rating?
Painting	Contact with eyes and skin. Spillage's causing a slip hazard	• Pupils are supervised during each activity, staffing ratios according to children's ages and ability. • Pupils thoroughly wash their hands & faces etc after each • activity • Any spillage is cleaned up immediately and the floor is in a dry, safe condition • Staff watches children for any allergic reaction to materials used.	Possible	Low risk
Using clay	Contact with skin and eyes	• Staff & helpers watch for any adverse reaction when pupils are using the clay • Pupils thoroughly wash their hands after using the clay • Pupils are given instructions before the activity • Any spillages of clay and/or water are mopped up immediately to avoid a trip/slip hazard • Suitable aprons are supplied to avoid getting clothing soiled. • Any tools used to work the clay must be appropriate for the age group and with no sharp edges.	Possible	Low risk
Sewing	Needle injury Cotton cuts	• Pupils are supervised during the activity and appropriate behaviour when using needle and pins explained. • Cotton strands etc are cut using only scissors • Only materials, which can be easily sewn and/or stitched, are to be used to avoid excess pressure being used to sew materials together. • Finger bobbins are supplied to help pupils sew materials which are denser to work & sew	Possible	Low risk
Glue	Contact with hair skin and eyes	• Pupils are instructed not to use excessive amounts and to avoid spillages at all times • Only approved products are to be used • Adhesives to be water based rather than solvent based and be non-toxic "***Super –glues" and wallpaper paste containing fungicides should not be used***. • Children should not use spray adhesives. They may be highly flammable and/or toxic. Caution should be advised when and where they are used, the area must be well ventilated. • Any glue which gives off heavy vapours should not be used unless the area is very well ventilated.	Possible	Low risk

		• Manufacturer's instruction should be read and followed by staff to become aware of the possibility of solvent abuse and children becoming sensitised to solvents and glues etc.		
Glue gun	Burns, due to hot components and glue	• Low-melt glue guns are considered safer than Hot-melt glue guns and should be used.	Possible	Medium risk
Scissors	Cuts and nip injuries	• Only round-headed scissors are used • Pupils are supervised during the activity and given instruction in the safe use of any equipment used • Scissors must be counted out and in and be properly stored • Any faulty or damaged scissors are disposed of.	Possible	Low risk
Balloons	Hygiene & Asthmatic problems	• When using balloons, staff should ensure hygienic procedures are followed. • Do not share mouthpieces etc. • A balloon pump should be used if available for inflating balloons.	remote	Low risk
Making holes in paper, card and plastic	Stabbing injuries, cuts & abrasions	• When making holes in materials, a pointed pencil can be used if underside of material is supported by "Blue Tack" or similar. • ***Screwdrivers and/or bradawls are not recommended to punch holes in materials.*** A hole punch or paper drill is suitable. • If tools are used, a cutting board or mat should be used. • If hand drills are to be used, they should be used on a drill stand to ensure accurate and safe work.	Possible	Low risk
Using tools	Cuts, lacerations, impact injury and abrasions	• All children are shown how to use tools and implements correctly and safely. • Tools etc should not be left out. After each session they should be returned to the toolbox or cupboard and counted. • The storage facility or cupboard must not be above the reach of the children where they may have to stretch.	Low	Medium risk
Using hand saws to cut wood	Incorrect or careless use can cause cuts. Poor work holding can cause saws to slip and cause cuts. Eye injury Dust may enter the eyes if blown away from the saw cut.	• Saws should be used under strict supervision and adequate space provided. • Right-handed children cutting lengths of dowel or thin wood need space to the left side of the vice or bench hook; this space will be on the opposite side for lefthanded children. • A corner bench hook prevents sideways movements. ? Fix materials firmly before cutting or drilling, using a vice, a bench hook or a G-clamp. (see accompanying image)	Possible	Medium risk

		 • Use sharp tools to prevent excess pressure being used when sawing. • Saw in a ventilated area to reduce sawdust, if possible use goggles to prevent sawdust from entering children's eyes. • Behaviour expectations are firmly explained to all children before starting the activity		
Tidying up	Dust and sharp objects	• Staff should be aware of dust. Dusts from wood and plastic are hazardous; however, small amounts of sanding by children for short periods are unlikely to produce dangerous levels if ventilation is provided. • A dustpan and brush is used to pick-up sharp objects and rubbish. • All rubbish etc is collected in an appropriate container or bag and disposed of in a safe way.	Remote	Low risk

Long-term DT plan 2020-2021 EYFS & Key Stage 1

(*including cooking and nutrition requirements for KS1)

	EYFS – *Speaking *Physical Development *Understanding the World * Expressive Arts and Design.			Optional Summer challenge
Y1	**Mechanisms** Sliders and levers	**Structures** Freestanding structures	**Food** Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)	**Textiles** Templates and joining techniques
Y2	**Mechanisms** Wheels and axles	**Food** Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)	**Textiles** Templates and joining techniques (Art link dye materials before starting project)	**Structures** Free standing structures

Lower Key Stage 2(*including cooking and nutrition requirements for KS1)

Y3	**Mechanical Systems** Levers and linkages	**Food** Healthy and varied diet (including cooking and nutrition requirements for KS2)	**Textiles** 2-D shape to 3-D product
Y4	**Structures** Shell structures (including computer-aided design)	**Electrical Systems** Simple circuits and switches (including programming and control)	**Food** Healthy and varied diet (including cooking and nutrition requirements for KS2)

Upper Key Stage 2(*including cooking and nutrition requirements for KS1)

Y5	**Structures** **Frame structures**	**Food** **Celebrating culture and seasonality (including cooking and nutrition requirements for KS2)**	**Food** **Cooking And Nutrition**
Y6	**Textiles** **Combining different fabric shapes (including computer-aided design)**	**Mechanical Systems** **Pulleys or gears**	**Electrical Systems** **More complex switches and circuits (including programming, monitoring and control)**

(*including cooking and nutrition requirements for KS2)

Please see the outcomes below. Look for your key stage and decide which outcomes you would like to cover to ensure it fits with your topic and design plan. KS 2 please ensure you include some of the across KS outcomes as well. You will haveto decided which you will cover. Please add them to the excel grid to ensure coverage across the school.

Design and Technology Progression Framework – Coded Objectives (Primary)

	Across KS1	Lower KS2	Upper KS2	Across KS2
PDA - DESIGNING Understanding contexts, users and purposes	**PDA 1** - work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment **PDA 2** - state what products they are designing and making **PDA 3** - say whether their products are for themselves or other users **PDA 4** - describe what their products are for **PDA 5** - say how their products will work **PDA 6** - say how they will make their products suitable for their intended users **PDA 7** - use simple design criteria to help develop their ideas	**PDA 8** - gather information about the needs and wants of particular individuals and groups **PDA 9** - develop their own design criteria and use these to inform their idea	**PDA 10** - carry out research, using surveys, interviews, questionnaires and web-based resources **PDA 11** - identify the needs, wants, preferences and values of particular individuals and groups **PDA 12** - develop a simple design specification to guide their thinking	**PDA13** - work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment **PDA 14** - describe the purpose of their products **PDA 15** - indicate the design features of their products that will appeal to intended users **PDA 16** - explain how particular parts of their products work

PDB - DESIGNING Generating, developing, modelling and communicating ideas	**PDB 1** - generate ideas by drawing on their own experiences **PDB 2** - use knowledge of existing products to help come up with ideas **PDB 3** - develop and communicate ideas by talking and drawing **PDB 4** - model ideas by exploring materials, components and construction kits and by making templates and mockups **PDB 5** - use information and communication technology, where appropriate, to develop and communicate their ideas	**PDB 6** - generate realistic ideas, focusing on the needs of the user **PDB 7** - make design decisions that take account of the availability of resources	**PDB 8** - generate innovative ideas, drawing on research **PDB 9** - make design decisions, taking account of constraints such as time, resources and cost	**PDB 10** - share and clarify ideas through discussion **PDB 11** - model their ideas using prototypes and pattern pieces **PDB 12** - use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas **PDB 13** - use computer-aided design to develop and communicate their ideas

	Across KS1	Lower KS2	Upper KS2	Across KS2
PMA - MAKING Planning	**PMA 1** - plan by suggesting what to do next **PMA 2** - select from a range of tools and equipment, explaining their choices **PMA 3** - select from a range of materials and components according to their characteristics	**PMA 4** - order the main stages of making	**PMA 5** - produce appropriate lists of tools, equipment and materials that they need **PMA 6** - formulate step-by-step plans as a guide to making	**PMA 7** - select tools and equipment suitable for the task **PMA 8** - explain their choice of tools and equipment in relation to the skills and techniques they will be using **PMA 9** - select materials and components suitable for the task **PMA 10** - explain their choice of materials and components according to functional properties and aesthetic qualities
PMB - MAKING Practical skills and techniques	**PMB 1** - follow procedures for safety and hygiene **PMB 2** - use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components **PMB 3** - measure, mark out, cut and shape materials and components **PMB 4** - assemble, join and combine materials and components **PMB 5** - use finishing techniques, including those from art and design	**PMB 6** - measure, mark out, cut and shape materials and components with some accuracy **PMB 7** - assemble, join and combine materials and components with some accuracy **PMB 8** - apply a range of finishing techniques, including those from art and design, with some accuracy	**PMB 9** - accurately measure, mark out, cut and shape materials and components **PMB 10** - accurately assemble, join and combine materials and components **PMB 11** - accurately apply a range of finishing techniques, including those from art and design **PMB 12** - use techniques that involve a number of steps	**PMB 14** - follow procedures for safety and hygiene **PMB 15** - use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components

			PMB 13 - demonstrate resourcefulness when tackling practical problem	

	Across KS1	Lower KS2	Upper KS2	Across KS2
PEA - EVALUATING Own ideas and products	**PEA 1** - talk about their design ideas and what they are making **PEA 2**- make simple judgements about their products and ideas against design criteria **PEA 3** - suggest how their products could be improved	**PEA 4** - refer to their design criteria as they design and make **PEA 5** - use their design criteria to evaluate their completed products	**PEA 6** - critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make **PEA 7** - evaluate their ideas and products against their original design specification	**PEA 8** - identify the strengths and areas for development in their ideas and products **PEA 9** - consider the views of others, including intended users, to improve their work
PEB - EVALUATING Existing products	**PEB 1** - what products are **PEB 2** - who products are for **PEB 3** - what products are for **PEB 4** - how products work **PEB 5** - how products are used **PEB 6** - where products might be used **PEB 7** - what materials products are made from **PEB 8** - what they like and dislike about products	**PEB 9** - who designed and made the products **PEB 10** - where products were designed and made **PEB 11** - when products were designed and made **PEB 12** - whether products can be recycled or reused	**PEB 13** - how much products cost to make **PEB 14** - how innovative products are **PEB 15** - how sustainable the materials in products are **PEB 16** - what impact products have beyond their intended purpose	**PEB 17** - how well products have been designed **PEB 18** - how well products have been made **PEB 19** - why materials have been chosen **PEB 20** - what methods of construction have been used **PEB 21** - how well products work **PEB 22** - how well products achieve their purposes **PEB 23** - how well products meet user needs and wants
PEC - EVALUATING Key events and individuals				**PEC 1**- about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products
PTK - TECHNICAL KNOWLEDGE Making products work	**PTK 1** - about the simple working characteristics of materials and components **PTK 2** - about the movement of simple mechanisms such as levers, sliders, wheels and axles **PTK 3** - how freestanding structures can be made stronger, stiffer and more stable **PTK 4** - that a 3-D textiles product can be assembled	**PTK 7** - how mechanical systems such as levers and linkages or pneumatic systems create movement **PTK 8** - how simple electrical circuits and components can be used to create functional products **PTK 9** - how to program a computer to control their products	**PTK 13** - how mechanical systems such as cams or pulleys or gears create movement **PTK 14** - how more complex electrical circuits and components can be used to create functional products **PTK 15** - how to program a computer to monitor changes in the environment and control their products	**PTK 19** - how to use learning from science to help design and make products that work **PTK 20** - how to use learning from mathematics to help design and make products that work **PTK 21** - that materials have both functional properties and aesthetic qualities

	from two identical fabric shapes **PTK 5** - that food ingredients should be combined according to their sensory characteristics **PTK 6** - the correct technical vocabulary for the projects they are undertaking	**PTK 10** - how to make strong, stiff shell structures **PTK 11** - that a single fabric shape can be used to make a 3D textiles product **PTK 12** - that food ingredients can be fresh, pre-cooked and processed	**PTK 16** - how to reinforce and strengthen a 3D framework **PTK 17** - that a 3D textiles product can be made from a combination of fabric shapes **PTK 18** - that a recipe can be adapted by adding or substituting one or more ingredients	**PTK 22** - that materials can be combined and mixed to create more useful characteristics **PTK 23** - that mechanical and electrical systems have an input, process and output **PTK 24** - the correct technical vocabulary for the projects they are undertaking
	Across KS1	**Lower KS2**	**Upper KS2**	**Across KS2**
PCNA - COOKING AND NUTRITION Where food comes from	**PCNA 1** - that all food comes from plants or animals **PCNA 2** - that food has to be farmed, grown elsewhere (e.g. home) or caught		**PCNA 3** - that seasons may affect the food available **PCNA 4** - how food is processed into ingredients that can be eaten or used in cooking	**PCNA 5** - that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world
PCNB - COOKING AND NUTRITION Food preparation, cooking and nutrition	**PCNB 1** - how to name and sort foods into the five groups in The eatwell plate **PCNB 2** - that everyone should eat at least five portions of fruit and vegetables every day **PCNB 3** - how to prepare simple dishes safely and hygienically, without using a heat source **PCNB 4** - how to use techniques such as cutting, peeling and grating	**PCNB 5** - that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate **PCNB 6** - that to be active and healthy, food and drink are needed to provide energy for the body	**PCNB 7** - that recipes can be adapted to change the appearance, taste, texture and aroma **PCNB 8** - that different food and drink contain different substances – nutrients, water and fibre – that are needed for health	**PCNB 9** - how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source **PCNB 10** - how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking