Contents

Design Technology Subject Vision and Rationale:

At our school children are taught to select and use appropriate tools safely and effectively to make a product. In all areas of Design and Technology the children are encouraged to consider the effectiveness of their designs and requirements of the product. Every child will have the opportunity to learn and extend their understanding, experience and application in the use of technology, including I.C.T, in a wide variety of contexts.

Curriculum Drivers:

1. **Reading, Language and Vocabulary** development at heart off the curriculum

   Children will communicate their ideas through talking, drawing, templates, mock -ups and where relevant information technology. They will work in a range of relevant contexts, working alongside others to design, make and evaluate ideas and products using technical vocabulary (Tier 3). They will consider the views of others through positive discussions and present their findings using a range of communication media to the relevant audience.

2. **Experiential learning opportunities,** to excite, enthuse and engage and raise aspirations.

   Using a range of relevant opportunities, tools, equipment and materials, we deliver lessons that engage and inspire children's love of DT. Children will work with purpose towards achieving an 'end product' each half-term/term.   Where possible, children will work alongside adults within and beyond school, draw on their expertise and visit locations where they can link their knowledge to real-life.

3. **Creativity and Innovation.** Developing independence, thinking and questioning.

   Through the sequenced process of designing, making and evaluating children will develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. Children will 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. Children will be given opportunities to critique, evaluate and test their ideas and products and the work of others. Children will experience culinary arts; experiencing, experimenting and tasting foods from around the world. Children will learn how to cook recipes from around the world and understand and apply the principle of nutrition.

4. **Children as teachers**, sharing knowledge. Knowing more and remembering more.

   We recognise that when children explain or teach a skill they have learnt, they are more likely to retain it. In design technology, regular opportunities are provided for children to develop their own knowledge by sharing what they have learnt with teachers, parents and peers. This encourages children to question and be questioned, supporting a depth of knowledge and the ability to make connections within the subject and beyond.

5. **Valuing each other**. Promoting respect, responsibility, tolerance and understanding

   Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, children will work cooperatively to design, make and evaluate products that solve real and relevant problems, within a variety of contexts, considering their own and others' needs, wants and values. Children learn how to work within a team, take risks and become more 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, now and in the future.

What will be taught: To be completed.

- ⬜ Topic overview

- ⬜ Link to Skills progression

- ⬜ Link to Knowledge progression

All lessons will:

-Have clear objectives

-Pose a question to investigate

-Have vocabulary at the heart

-Include modelling (where appropriate)

-Encourage active learning and gamification

-Provide opportunities for children to independently apply skills

-Provide rich and useful resources

DT Progression of Substantive Knowledge

Strands	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6

	Use construction toys to build a moving model	Sew a bookmark	Vehicles	Entrepreneurship - textiles	Bridges and Buildings	Electrical application
Understand the design process	Learning about audience & purpose	Learning about binca and basic stitches - accessories	Learning about mechanisms and robotics	Learn to be a designer yourself – Entrepreneurs Who is my audience? What is their need? How can I solve this?	How do we reinforce and stiffen structures? Can we make a lifting bridge?	Learning to 'tinker' Taking an existing design (soothing or fun) and adapting / tinkering with it for a particular purpose
Designers & their influences	Ole Kirk Christiansen – Lego	Faye Whittaker and Joan Elliot	Kevin Warwick and Alan Turing	Gok Wan Vivienne Westwood	Isembard Kingdom Brunel - bridges	(possibly Ikea inspired designs for soothing lamps, simple electronic toys)
Materials & their uses (and properties)	Why is Lego plastic? How does Lego 'stick'?	Taking care with fabrics; stretchy / colouring / pattern / decoration. Sewing	Cogs, pulleys, levers, cams, mechanisms, programming machines	Learning about properties of a wider range of materials – pertinent to each pupil's design	Metals, plastics, concrete, etc. – what are the best materials to make strong bridges?	Using electrical circuits in a design – what makes a circuit work?
Understanding how to combine materials	Using simple maths to learn how to join differing blocks together to an end form	Cutting /joining / stitching effectively – what did FW / JE use?	Joining different materials, using axles and pulleys to create an effect	Learning about how to connect a wider range of materials	Joining securely – how do we make sure that the bridge is safe?	Fixing circuitry securely in to a shell or form – how do others do it?
'Wider' design knowledge (X-curricular) – This learning won't always result in a made, final 'product' – this is about learning the design process	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know)	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know)	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know) Compare this to previous 'designers'	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know) Compare this to MY design process	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know) **Regular review – how have I used the design process today / this week / this term?**	For each VIP, whose problem did they solve? What was their 'design process'? (audience, design, make, evaluate, know) Compare this to OUR design, make, evaluate, know process

DT Progression of Disciplinary knowledge

	Progression of Disciplinary Knowledge (Skills)						
	Being an engineer, being a chef, being a designer						
	Design, Make, Evaluate						
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Design	Can I talk about what I am going to make, how and why?	Can I explore similar products and suggest ideas for my own design ideas? Can I create a plan for design using pictures, words and models?	Based on design criteria, can I suggest my own ideas and explain reasons for my choices? Can I create a plan using models and labelled diagrams and give a brief overview of my design?	Can I use research to identify product requirements and inform my design ideas following a given design criteria? Can I create a plan which shows order, equipment and tools and discuss how the product will work, for example, by using labelled sketches and/or prototypes (with reference to resources)?	Can I research others' needs and wants to inform design ideas to create my own design criteria? Can I create a plan, explain design decisions and show how the product will work, for example, by using annotated sketches and/or prototypes (with reference to techniques and resources)?	Can I carry out research to find out about users' needs, wants, and product requirements to create my own design criteria? Can I create a logical plan and communicate their ideas to others through discussion, annotated sketches, prototypes and pattern pieces (with reference to techniques, resources and other designs)?	Can I draw upon market research and user research to identify needs, wants, and product requirements to create my own design criteria? Can I create, follow and refine a logical plan, communicating ideas including cross-sectional, exploded diagrams, computer-aided design (with reference to techniques, resources and other designs justifying my choices)?
"Make" Develop and create using appropriate	Can I use these Fine motor skills: pencil grip, scissor skills?	Can I select tools and materials to cut, shape, join and	Can I select and describe tools and materials they are	Can I use a range of suitable tools, materials and	Can I use a wider range of suitable tools, materials and	Can I select from, and use, a wider range of suitable	Can I select from, and use, a wider range of suitable

tools		finish and explain choices? (scales, scissors, hack saw, staple, glue, card, paper) Can I Identify problems and explain these to others?	using and explain choices? (Can I Identify problems and suggest possible changes which could be made?	equipment accurately, considering aesthetic qualities? Can I discuss their own and their peers' work and show willingness to alter designs?	equipment accurately, considering functional properties Can I start to suggest how they and their peers can improve their work and show willingness to alter and/or restart designs?	tools, materials and equipment accurately, considering functional properties and aesthetic qualities? (whisk, knife frying pan, Can I Make reasonable suggestions for how they and their peers might improve their work and modify their work accordingly?	tools, materials and equipment accurately, considering functional properties, aesthetic qualities and constraints? (hacksaw, hand-drill, glue gun, scissors, clamp, hole punch, Can I follow plan, critique and make necessary adaptations to improve quality and respond to practical problems which arise?
Evaluate	Can I talk about what they like about their own work?	Can I talk about their own work thinking about design criteria? Can I talk about what could make the product better	Can I talk about their own and others' work saying what went well, thinking about design criteria? Can I talk about what they would do differently if they were to do it again and why?	Can I test and evaluate my own products against design criteria considering product requirements against given criteria?	Can I test and evaluate my own and others' finished products against design criteria considering needs and wants against my own criteria?	Can I test and evaluate my own and others' finished products against design criteria considering needs, wants and product requirements? Can I Identify ways and resources to make improvements where necessary?	Can I test and evaluate my own and others' finished products against design criteria considering needs, wants and product requirements? Can I identify ways and resources to improve where necessary considering cost, innovation and sustainability?

Additional skills building

Sewing - all classes create Christmas Hoops practising sewing techniques
Paper craft - all classes create Easter pop-up cards