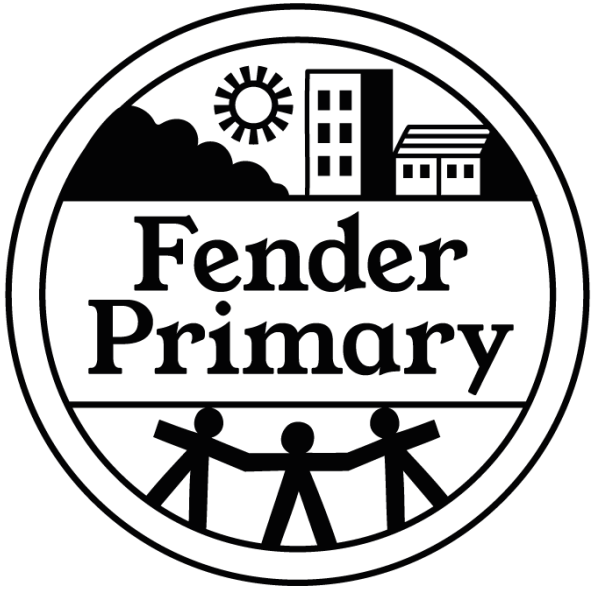

D.T. at Fender

Intent

Our Design and Technology curriculum is driven by a commitment to creativity, innovation, and purposeful learning; we aim to empower all children to become confident problem-solvers and thoughtful designers who make a positive impact on the world around them.

Through an engaging, hands-on curriculum, pupils explore real-life challenges using a rich blend of skills from across the STEM subjects. They are encouraged to think critically, take risks, and reflect on their design decisions as they move through the iterative process of designing, making, and evaluating.

Sustainability is a core theme, with children learning to consider the environmental impact of their designs and make responsible choices about materials and resources. Strong links with our local community provide opportunities for meaningful projects, collaboration, and the celebration of diverse design influences.

By the end of primary school, our pupils are not only equipped with practical skills and technical knowledge but also a growing sense of agency—ready to shape their future with curiosity, compassion, and creativity.

Our curriculum is rooted in high expectations for all supported by high-quality adaptive practice. Diverse and high-quality texts underpin our curriculum, as well as rich opportunities for oracy, vocabulary development and a growing mastery of knowledge, skills and concepts.

Implementation

Our pedagogy is built around three key concepts:

1. Command of the Content / Excellent Subject Knowledge
2. Consistent Environment, Relationships and Routines
3. Cornerstones of Teaching & Learning (outlined beneath)

Core Knowledge	Oracy Rich Opportunities	Adaptive Practice
The core knowledge for each lesson is clear and explicit. This learning is broken down into clear steps.	Oracy elevates learning and offers the opportunity to promote disciplinary talk. Oracy is a feature of every lesson and is the outcome of at least one lesson per unit.	Learning is adapted carefully to meet the needs of all learners regardless of need or starting point.
Diverse & High-Quality Texts	**Vocabulary**	**Revision & Assessment**
Our curriculum is underpinned by diverse and high-quality texts that allow themselves to see themselves and others.	Vocabulary is explicitly taught and revised. This builds a bank of disciplinary vocabulary that is revised	Assessment is ongoing and purposeful. Each lesson begins with a review of last week's learning.

	regularly	Each unit ends with a summative assessment.
Careers	Modelling	CPD
Real life opportunities are woven into the curriculum including visits, trips and opportunities to look at careers within the subject. At our annual Careers' Festival, the subject is represented by professionals.	Modelling is one of our true cornerstones of teaching and learning. Whatever the task, high-quality modelling helps unlock student understanding.	Ongoing CPD for subject leaders, teachers and teaching assistants ensures fidelity to our pedagogy.
Cultural Capital	Parental Involvement	Monitoring
Children learn about significant events, people and places that bolster their knowledge of the world. This is supported through visitors, trips and visits, and strengthened through our careful curation of high-quality and diverse texts.	Parents are invited to share in the learning journey through our engaging road maps. Learning is shared routinely on Class Dojo. Parents are invited in for special occasions, events and celebrations.	Subjects are monitored routinely through book looks, learning walks, pupil voice and governor visits
Impact		
The impact of our Design and Technology curriculum is that children leave primary school with a strong foundation of practical skills, creative confidence, and a problem-solving mindset. They are able to apply their knowledge of materials, structures, mechanisms, and electronics in thoughtful and innovative ways, drawing on their understanding of science, maths, and computing. Pupils develop a critical awareness of how design affects daily life and are able to evaluate products—including their own—with insight and purpose. They understand the importance of sustainability and ethical design choices, showing respect for the environment and communities. Most importantly, our children see themselves as designers and engineers of the future: resilient, reflective, and ready to face new challenges with curiosity and imagination. Children are engaged and enthused about DT as shown in lesson visits, book looks, governor visits and pupil voice.		

D.T. Long-Term Plan							
	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Cooking & Nutrition: Vegetable Soup	Cooking & Nutrition: Smoothies	Cooking & Nutrition: Healthy Wraps	Digital: Wearable Technology - Microbits	Mechanisms: Slingshot Cars	Cooking & Nutrition: Developing a Bolognaise Recipe	Textiles: Bags
Spring	Textiles: Book Marks	Mechanisms: Wheels and Axels	Mechanisms: making a moving monster	Electrical Systems: Museum Display	Cooking & Nutrition: Adapting Recipes	Textiles: Stuffed Toys	Electrical Systems: Steady Hand Game
Summer	Structures: Boats	Textiles: Puppets	Structure: Baby Bear's Chair	Cooking & Nutrition: Seasonal Food Tart	Structures: Pavilions	Gears & Pulleys	Cooking & Nutrition: Come Dine With Me (3 course meal)

FENDER PRIMARY SCHOOL

Long Term Plan - Design Technology

F2

Autumn: Cooking & Nutrition (vegetable soup)
Spring: Textiles - Book Marks
Summer: Structures - Boats

F2

1

2

3

4

5

6

YEAR 1

Autumn: Cooking & Nutrition (smoothies)
Spring: Mechanisms - Wheels and Axels
Summer: Textiles - Puppets

YEAR 2

Autumn: Cooking & Nutrition (healthy wraps)
Spring: Mechanisms - Moving Monsters
Summer: Structure - Baby Bear's Chair

YEAR 3

Autumn: Digital - Wearable Technology (Microbits)
Spring: Electrical Systems - Museum Display
Summer: Cooking & Nutrition (Seasonal Tart)

YEAR 4

Autumn: Mechanisms - Slingshot Cars
Spring: Cooking & Nutrition (Adapting Recipes)
Summer: Structures - Pavillions

YEAR 5

Autumn: Cooking & Nutrition (developing a bolognaise recipe)
Spring: Textiles - Stuffed Toys
Summer: Gears & Pulleys

YEAR 6

Autumn: Textiles - Bags
Spring: Electrical Systems - Steady Hand Game
Summer: Cooking & Nutrition - Come Dine With Me (Three-Course Meal)

Careers

Careers education is woven through our DT curriculum as are life skills. Students learn about possible opportunities that studying DT can open up to them.

Oracy

Oracy skills are embedded throughout the DT curriculum - children are given opportunities to evaluate, explore, build on and analyse their creations and those of others.

Progression Map							
	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	Explore ideas through play and talk about what they are making.	Generate simple ideas based on given tasks; draw simple pictures.	Plan by drawing, labelling, and describing ideas; suggest materials.	Research, plan, and develop ideas using labelled sketches.	Create detailed designs with step-by-step plans, considering tools and materials.	Independently develop, refine, and adapt design ideas based on research.	Produce innovative, detailed design proposals considering purpose, audience, and functionality.
Making	Use simple tools and materials with support (cutting, sticking).	Choose and use simple tools safely (scissors, glue, tape).	Select from a wider range of tools and materials for a purpose.	Use appropriate tools and techniques to measure, mark, cut, and shape materials accurately.	Use tools and equipment with increasing accuracy and skill (saws, glue guns, stitching).	Select and use specialist tools for precision work; combine materials effectively.	Work with high-level accuracy; independently adapt techniques and use complex materials and equipment.
Evaluating	Talk about what they made and what they like about it.	Talk about how their product works and suggest simple improvements.	Evaluate against simple design criteria; suggest changes.	Evaluate their product against their original design and suggest improvements.	Evaluate their product considering functionality, aesthetics, and user needs.	Critically evaluate their own work and existing products; suggest adaptations.	Complete detailed evaluations, considering innovation, effectiveness, user feedback, and improvements.
Technical Knowledge	Explore how things move and join (push, pull, hinge).	Build simple structures and mechanisms (sliders, levers, wheels).	Develop understanding of simple mechanisms (axles, pulleys).	Understand and use mechanical systems (levers, linkages) in products.	Apply understanding of electrical systems (circuits, switches) and reinforce structures.	Use mechanical and electrical systems in more complex products (e.g., motors).	Apply advanced mechanical, electrical, and computing systems confidently in design solutions.

Cooking and Nutrition	Explore food play (taste, smell, simple preparation).	Begin to understand where food comes from and prepare simple dishes.	Prepare simple healthy dishes safely (e.g., fruit salad).	Understand basic food groups and healthy eating; follow simple recipes.	Measure ingredients accurately and prepare savoury dishes safely.	Research and prepare a range of dishes considering seasonality and nutrition.	Plan, prepare, and cook a variety of complex dishes using a range of techniques.
Structures	Build simple models using construction toys and blocks.	Create freestanding structures using simple joining techniques (e.g., gluing, taping).	Explore ways to make structures stronger and more stable (folding, rolling, layering).	Apply knowledge to reinforce and strengthen frameworks and structures.	Design and build more complex structures using joins, braces, and triangulation.	Explore structures in depth (e.g., bridges, domes); use complex joining techniques.	Master designing, building, and evaluating sophisticated structures considering forces and stability.
Textiles	Explore different textures and join fabric with glue.	Cut and join fabrics using simple techniques (stapling, gluing).	Use simple sewing techniques (running stitch) to join materials.	Develop stitching skills (running, backstitch); begin designing textile products.	Use a range of stitches and finishing techniques (e.g., hemming, applique).	Accurately measure, cut, and join textiles using patterns and templates.	Design, cut, sew, and decorate more complex textile products with a range of skills.
Mechanisms	Play with toys that have moving parts (wheels, sliders).	Create simple moving models using sliders and levers.	Explore wheels and axles in moving products.	Use linkages to make movement (e.g., pop-up books).	Design and build more sophisticated mechanical systems using cams and pulleys.	Incorporate motors and control systems into mechanical designs.	Develop automated/mechanised products integrating mechanical and electrical systems.

Progression of Materials / Tools / Techniques							
Cutting Tools (scissors, snips, saws)	Use child scissors to snip paper and card.	Cut along lines using scissors; begin to cut simple shapes.	Cut fabric, card, and thin materials with growing accuracy.	Use junior saws (e.g., hacksaws) with support to cut wood.	Accurately saw wood and rigid materials independently.	Use precision cutting tools (craft knives, junior tenon saws) safely.	Master cutting a range of materials with high precision and independence.
Joining Materials (glue, tape, stitching, fasteners)	Stick with glue and tape.	Use glue, tape, and simple fasteners (split pins, clips).	Join materials more securely with stronger adhesives; introduce basic stitching.	Use a range of joining techniques (glue guns, nails, stitching).	Join materials confidently (brackets, bolts, hinges, stitched seams).	Select appropriate fixings and techniques based on material properties.	Combine joining methods creatively and securely for sophisticated builds.
Structures (paper, card, wood, construction kits)	Build simple towers and walls with blocks and kits.	Use card and paper to make simple models.	Strengthen paper/card models with folds and layers.	Create strong frameworks using wood and card.	Design structures with reinforcement (triangulation, cross-bracing).	Use woodworking tools to create complex structures (frames, bridges).	Design, construct, and refine large-scale or load-bearing structures independently.
Textiles (fabric, thread, sewing techniques)	Explore fabric textures; stick fabric pieces.	Cut and stick fabric shapes; weave with paper and textiles.	Learn basic stitching (running stitch) to join fabric.	Use running stitch, cross-stitch, and backstitch for strength.	Decorate textiles with embroidery and embellishment; use templates.	Measure, cut, join, and finish fabric products neatly (e.g., small bags, cushions).	Design and create functional and decorative textile products with complex stitching techniques (e.g., seams, pleats).

Mechanisms (sliders, levers, wheels, linkages, cams)	Play with toys that have moving parts.	Create simple moving parts (sliders, levers).	Build products with wheels and axles.	Use linkages to create more complex movement (e.g., moving storybooks).	Construct mechanical systems with cams, pulleys, and gears.	Integrate motors and mechanical systems into projects.	Design automated products combining mechanical and electrical systems.
Electrical Systems (simple circuits, motors, switches)	Explore toys that light up or move.	Introduce simple battery-operated toys.	Begin understanding basic circuits (bulbs, batteries) through exploration.	Build simple series circuits into products (e.g., a light-up sign).	Incorporate switches and motors into working products.	Develop complex circuits with multiple components and programmable control.	Integrate sophisticated electrical systems (e.g., programmable microcontrollers like Crumble or Micro:bit).
Cooking and Nutrition (tools, ingredients, techniques)	Handle food (washing, mixing) with support.	Prepare simple uncooked dishes (fruit salad, sandwich).	Use basic tools (spreader, peeler) to prepare foods safely.	Follow simple recipes independently, measuring ingredients.	Prepare and cook savoury dishes using heat (baking, boiling, frying).	Apply more complex cooking skills (kneading, seasoning, balancing flavours).	Plan, prepare, and cook complete dishes with an emphasis on nutrition, skill, and presentation.
Digital and Computing Tools (CAD, programming, control technology)	Explore simple cause-and-effect toys or apps.	Begin to use simple programmable toys (Bee-Bots).	Create basic instructions for programmable devices.	Use basic Computer-Aided Design (CAD) tools for 2D designs.	Design and simulate products digitally (simple CAD software).	Use programmable systems (e.g., Crumble, Micro:bit) to control products.	Design and control complex products using digital tools and programming software.

Vocabulary						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
chop, mix, cut, taste, smell, vegetable, soup, cook, safe, pour, blend, healthy	smoothie, fruit, peel, measure, pour, design, mark, stitch, needle, thread, felt, puppet, wheel, axle, move, turn, push, pull	wrap, healthy, ingredient, choose, spread, fold, monster, lever, linkage, design, join, decorate, chair, structure, balance, strong, test, build	wearable, microbit, code, light, program, sensor, sew, stitch, join, decorate, pattern, template, tart, seasonal, local, grate, chop, combine	slingshot, car, chassis, wheel, axle, friction, pavilion, structure, support, frame, strong, join, adapt, taste, texture, healthy, savoury, evaluate	bolognaise, simmer, season, flavour, recipe, adapt, stuffed, toy, stitch, seam, pattern, decorate, gear, pulley, motion, rotate, force, mechanism	bag, textile, stitch, design, durable, functional, steady, hand, game, wire, circuit, buzzer, dine, starter, main, dessert, serve, garnish

National Curriculum – DT

Purpose of study

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

Aims

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

♣ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world

♣ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users

♣ critique, evaluate and test their ideas and products and the work of others

♣ understand and apply the principles of nutrition and learn how to cook. Attainment targets By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject content

Key stage 1

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

♣ design 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

♣ 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

♣ 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.

Key stage 2

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

♣ 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

♣ 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

♣ 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.

Cooking and nutrition

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.

D.T. Lesson Structure
Revision & Recap Teacher revisits learning from last week, last term and last year. Absent children from the previous week/lesson find out the core learning from last week.
Vocabulary / Oracy Vocabulary is explicitly taught using oracy-rich strategies.
Explicit Teaching of New Knowledge Teacher uses the road map to place new learning in the context of the unit. Teacher uses core principles of our Fender Pedagogy to teach new core knowledge from that week.
Independence Children practice and develop their knowledge, through application of a historical skill in their independent (or group) work. This could be written or orally recorded, dependent on the knowledge, skill and task of that lesson.
Review...Revise...Reflect...Where Next? Teacher to make explicit the core knowledge from that lesson - three core facts! Revise that lesson's taught vocabulary Use the road map to look ahead - where does this knowledge take us next?

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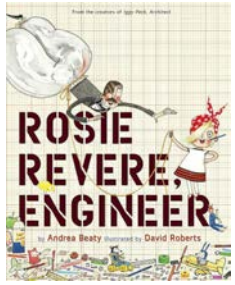
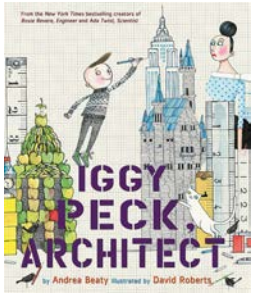
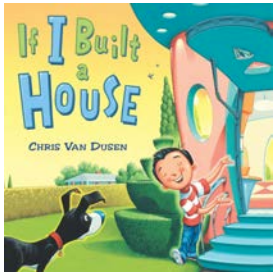
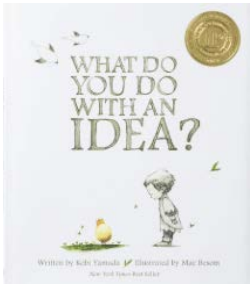
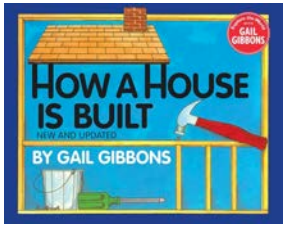
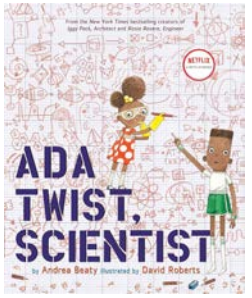
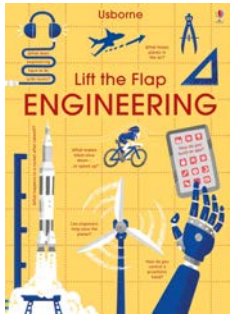
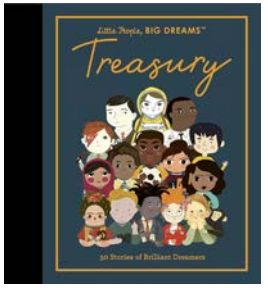
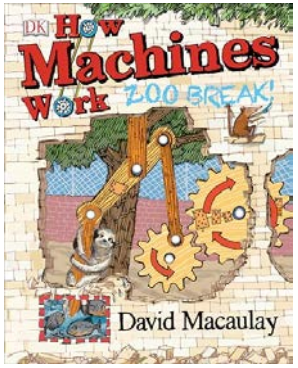
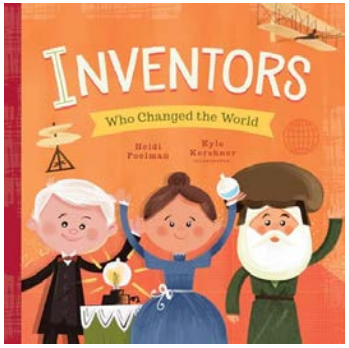
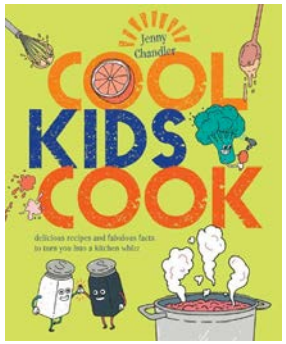
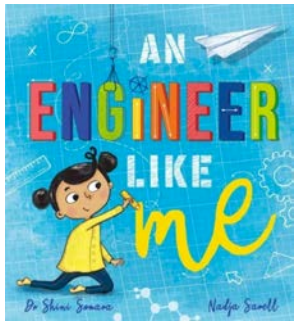
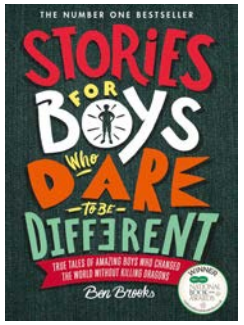
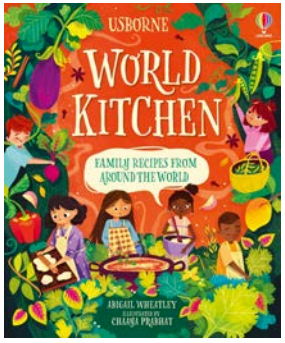
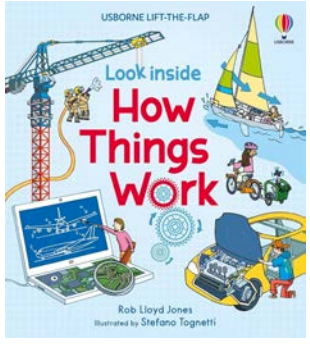
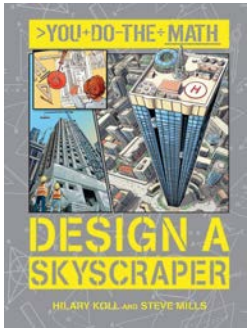
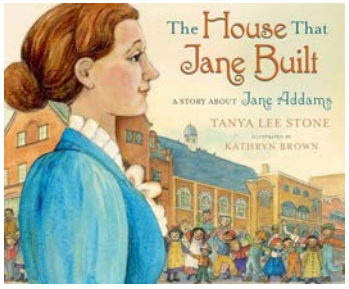
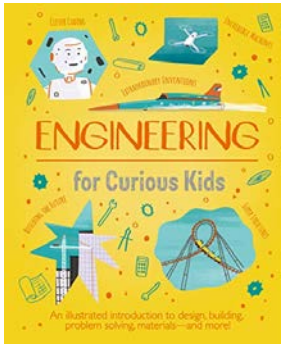
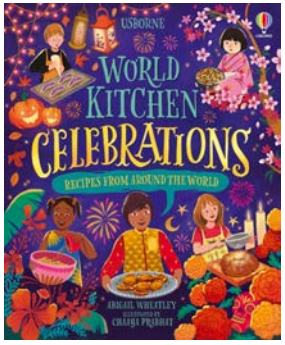
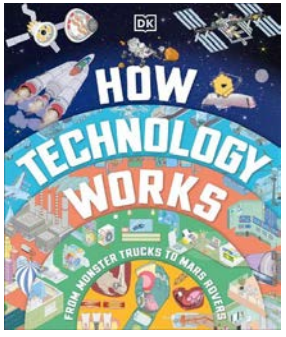
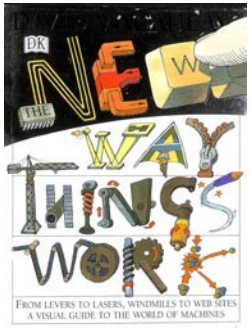
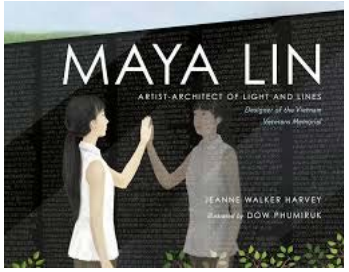
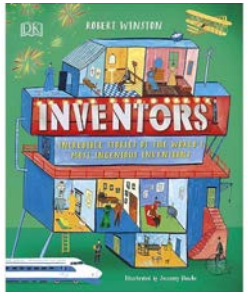
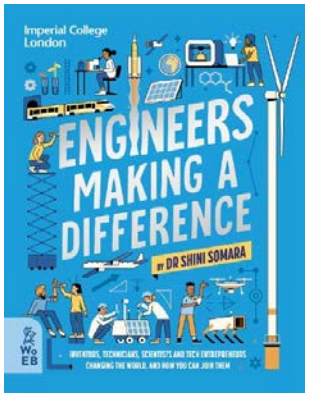
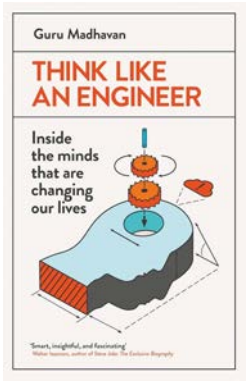
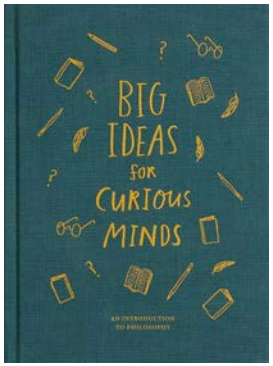
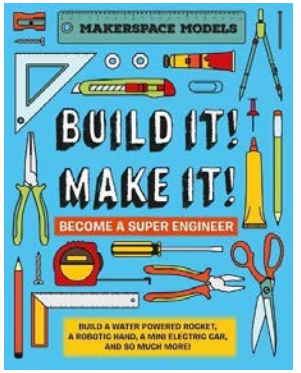
EYFS	     
Year 1	     
Year 2	     

Year 3	     
Year 4	     
Year 5	     

Year 6	 Imperial College London ENGINEERS MAKING A DIFFERENCE BY DR SHINI SOMARA  Guru Madhavan THINK LIKE AN ENGINEER Inside the minds that are changing our lives  SUPER SIMPLE COOKING FOR KIDS LEARN TO COOK WITH 50 FUN AND EASY RECIPES FOR BREAKFAST, SNACKS, DINNER, AND MORE!  BIG IDEAS FOR CURIOUS MINDS  MAKERSPACE MODELS BUILD IT! MAKE IT! BECOME A SUPER ENGINEER BUILD A WATER POWERED ROCKET, A ROBOTIC HAND, A MINI ELECTRIC CAR, AND SO MUCH MORE!  Little People, BIG DREAMS Steve Jobs