HAYDN PRIMARY SCHOOL
Nottingham City Council Children's Services

Design and Technology Policy 2020

National Curriculum

The National Curriculum 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."

Curriculum Intent

Design and technology at Haydn Primary School; building a better future! Our curriculum has been designed to prepare children to take part in the development of tomorrow's rapidly changing world. In a world which is so over-supplied in every sense, one of the ways to succeed and standout is to have a creative and lateral way of thinking about things. Our aim is for our pupils to contribute to and make positive changes to their quality of life and that design and technology encourages children to become autonomous and creative problem solvers, both as individuals and as part of a team. We want design and technology to enable our pupils to identify needs and opportunities and to respond by developing ideas and eventually 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 industrial practices. We see importance in allowing children to reflect on and evaluate present and past design and technology, its uses, and its impacts. Ultimately, design and technology helps all children to become informed consumers and potential innovators.

The aims of design and technology are to:

- Develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making.
- To nurture creativity, design and innovation and take creative risks, solving relevant real life problems with open-ended outcomes.
- To develop skills in designing, planning, making, adapting and evaluating products for a particular purpose.
- Enable children to talk about how things work and to draw and model their ideas.
- To reflect on and evaluate present and past design and technology, its uses and effects.
- Encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures.
- Explore attitudes towards the made world and how we live and work within it.
- Develop an understanding of technological processes, products, their manufacture and their contribution to our society.

Design and technology curriculum planning

Design and technology is a foundation subject in the National Curriculum. We carry out the curriculum planning in design and technology in three phases: long-term, medium-term, and short-term. The year group specific long-term plan maps out the units covered in each term. Our medium-term plans give details of each unit of work for each term. They identify learning objectives referenced from the National Curriculum for each unit and ensure an appropriate balance and distribution of work across each term. At Haydn Primary School teachers plan in a cross curricular way so that they develop and adapt ideas to consider knowledge, skills and understanding to ensure continuity. We feel it is important to sustain meaningful links across subjects where appropriate. For example, In Year 2 the children learn about World War 2 as part of their history topic. Their design and technology project is to design and build a submarine which is connected to the science topic where pupils explore different man made and natural materials. This is further extended by reading and learning key World War 2 facts and writing a fact file in literacy.

The design and technology subject leader is responsible for overseeing and reviewing these plans and advising staff members in the organisation of their year group specific curriculums. We plan the activities in design and technology so that they build upon the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

Foundation Stage

The long term and medium term plan is drawn from the curriculum objectives outlined in the Early Learning Goals (ELG) See **Appendix 1** – EYFS Long Term Plan.

Short term planning identifies taught sessions, focussed activities and provision in the environment (weekly) for the goals identified.

Key Stage 1 and 2

The whole school long term planning gives an outline of the design and technology topics that are taught in each year group and when these are taught alongside other areas of the National Curriculum. **See Appendix 2**
Medium term planning provides an insight into the National Curriculum objectives taught each half term. This year group specific planning is reviewed annually by teachers in all year groups and the subject leader. The planning is designed to ensure relevant links are made for a cross curricular style of teaching. See **Appendix 3**
Short term design and technology planning is completed weekly alongside other subjects in the curriculum. This covers individual lessons that form a unit of work. Short term planning includes clear objectives taken or connected to the National Curriculum, the teaching sequence, differentiated activities, key questions and ICT opportunities and resourcing.

A progression ladder was designed by the subject leader to ensure a clear progression of knowledge and skills that should be taught in each year group. The progression ladder enables teachers to see where the year groups' learning was focused last year and where it is heading next year. See **Appendix 4**

Curriculum Implementation

Teaching

Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning, making products and evaluating them. We do this through a mixture of whole class teaching and individual/group activities. Within lessons we give children the opportunity to develop their ideas by working independently and in groups. They are exposed to a wide range of materials and resources, including ICT.
Projects are designed and delivered considering 6 key areas:

- **User:** Pupils should have a clear idea of the user of their product, considering their values, needs, wants, interests and preferences.
- **Purpose:** Pupils should be able to communicate the purpose of the product they are designing and making.
- **Functionality:** Pupils should design and make products that work/function effectively to fulfil the purpose for the intended user.
- **Design Decisions:** Pupils should be provided with opportunities to make their own design decisions. This allows them to demonstrate their creative, technical, and practical expertise.
- **Innovation:** In the designing and making process, pupils need scope to be original with their thinking.
- **Authenticity:** Pupils should design and make products that are believable, real and meaningful to themselves and others.

Foundation Stage

We encourage the development of skills, knowledge and understanding that help Foundation Stage children to make sense of their world as an integral part of the school's work. In the Foundation Stage of the National Curriculum, we relate the development of the children's knowledge and understanding of the world to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for children aged three to five.

Activities are well planned and purposeful, with a consistent focus on developing children's awareness of the world around them. The children's learning includes using a range of construction materials, exploration through dismantling different objects, questioning and discussion and choosing and using a range of different tools. These experiences encourage children to make connections between on area of learning and another and forms the foundations for later work in design and technology. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity. Provision, where children have the opportunity to engage in self-initiated activities in order to develop their design and technology based skills, curiosity and a widening vocabulary is planned weekly.

Key Stage 1

In Key Stage 1, design and technology teaching is taught through a topic-based approach, making as many meaningful cross-curricular links as possible. Projects are delivered in units which allows for more effective learning in which teachers can focus on high quality teaching and developing key skills, allowing children to develop their ideas and techniques. This ensures that children are immersed in the topic, can use specialist vocabulary, develop their enquiry skills and make learning purposeful and relevant to them. Teachers deliver at least two stand-alone units of design technology per year. In addition to these, teachers are expected to teach a project based on food and nutrition.

In Key Stage 1, the main focus of design and technology teaching is to start building knowledge, understanding and skills needed to engage in an iterative process of designing, making, and

evaluating. It is important children understand each key step and how they inform the next steps in the process. We want our pupils to feel confident to generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate information and communication technology. Teachers provide opportunities for pupils to select and use a range a range of materials and tools and explore the sensory qualities of these materials. It is important to teach children how to demonstrate excellent attitudes to learning and independent or collaborative working and carry out activities with safety and hygiene in mind. We feel this teaching supports our core values which are ready, resilient, resourceful, reflective and respectful and these are referred to and demonstrated by both staff and pupils.

Key Stage 2

In Key Stage 2, design and technology is also taught through a topic-based approach with the aim to create meaningful cross curricular links. Teachers in Key Stage 2 also deliver at least two stand-alone units of design technology per year. In addition to these, teachers are expected to teach a project based on food and nutrition.

The main focus of design and technology teaching in Key Stage 2 is to build on pre-existing knowledge and skills. Pupils are expected to build upon their early childhood investigations to explore progressively how things work. Teachers encourage pupils to learn how products were designed and made to meet the needs of people who used them in the past, and how this happens now. We teach our pupils how to critically evaluate existing products and use their findings to inform/develop their ideas. We give children the opportunity within lessons to evaluate their own ideas and methods and work with others to say what they think and feel about them. At Haydn we want to provide our children with as many chances to use and secure increasing knowledge of which tools, equipment and materials to use and to build upon their previous experience and understanding of relevant scientific and mathematical concepts. Pupils will learn the working characteristics and properties of the materials they are using and why one material, ingredient or component is suitable for the purpose. As they progress through each key stage, pupils should respond ambitiously to an increasingly complex range of designing and making projects showing significant levels of originality and take creative risks to produce innovative ideas and prototypes.

The Environment

At Haydn, our classroom and corridor displays serve as a celebration of children's work, as well as an invaluable teaching aid and resource for encouraging independent learners. Displays feature and explain specialist vocabulary for each unit of work. The classroom as an environment for the teaching of design and technology celebrates children's creative learning through dedicated displays in each classroom that cover key topics. The displays provides children with the vocabulary needed for the current design and technology topic, and particularly in the Early Years, offers children independent access to equipment. This equipment and resources provide our pupils with opportunities to build and construct structures, use their senses to discover different materials and become exposed to a range of products. Wherever possible, teachers are encouraged to use the outdoor learning environments for the teaching of design and technology, with a dedicated 'garden' area for the planting and nurturing of fruit and vegetables. Children can use the outdoor space to investigate natural and man made materials and design and create products for outside use.

Health and safety

The general teaching requirement for health and safety applies in this subject. During design and technology lessons we teach children how to follow proper procedures for food safety and hygiene. Pupils are expected to use equipment and materials safely and with care.

Teaching design and technology to children with special educational needs (including Gifted and Talented)

At our school we teach design and technology to all children, whatever their ability. Design and technology forms part of the school curriculum by providing a broad and balanced education to all children. Through our design and technology teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. We are working to assess against the National Curriculum to allow us to consider each child's attainment and progress against expected levels.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors classroom organisation, teaching materials, teaching style, differentiation so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs. Our work in design and technology considers the targets set in the children's EHCP (education healthcare plan), IPM (individual provision map) or PSP (pupil support plan). Appropriate adaptations are made e.g. Use of specific or specialist equipment. We enable pupils to have access to the full range of activities involved in learning design and technology. Where children are to participate in activities outside the classroom, for example, a museum or factory trip, we carry out a risk assessment prior to the activity to ensure that the activity is safe and appropriate for all pupils.

Contribution of design and technology to teaching in other curriculum areas

English

Design and technology contribute to the teaching of English in our school by providing valuable opportunities to ask and answer questions to develop their ideas and share viewpoints. During lessons, teachers are actively promoting the skills of thinking, reading, writing, speaking, and listening. Children develop their specialist vocabulary through hands, practical experiences and active discussion with their teachers. As in all areas of the curriculum at Haydn there are opportunities for children to develop their reading skills; children are exposed to a wide variety of non-fiction texts in design and technology and pupils in Key Stage 2 will undertake active research using the internet to look at existing products and gather ideas. Our pupils are encouraged to compare ideas, methods and approaches in their work and that of other children. The evaluation of products requires children to articulate their ideas and to compare their views with those of other people. Through discussion children learn to justify their own views and clarify their design ideas.

Mathematics

Design and technology contribute to the teaching of mathematics in several ways. There are many opportunities for children to apply mathematical knowledge and skills through the design and technology curriculum, using measurements, space and shape and using both two and three dimensions. This cross curricular learning can help pupils solve mathematical problems in the designing and building of functional products. Equally, working with construction elements requires a great deal of maths, from working out how much material is used to how many elements will fit in a certain space.

Computing

We use computing to support design and technology teaching when appropriate. Children use software to enhance their skills in designing and making and use ICT to collect or research information. Older children can collect visual information and research existing products. Teachers also encourage children to develop their ideas using iPad's and laptops to record their observations.

Science and Geography

Science and design and technology have a particular role to play in understanding many worldwide issues through the curriculum alongside geography and citizenship. Often working in a cross curricular way with these subjects is a good way to re-enforce learning, while taking a holistic approach. Pupils can learn about the environment, solar energy and sustainability and design specific products made for outdoor environments e.g. a water saving system.

History

Design and technology also contributes to the teaching of history in a cross curricular way. Projects will often link to historical topics where products are designed and made in response to past traditions or in connection to ancient civilizations, cultures and practices. Pupils learn about the history of design and technology where they investigate and evaluate products from the past and learn about how manufacturing has changed in the 21st Century.

Personal, social and health education (PSHE) and citizenship

Design and technology contribute to the teaching of personal, social and health education and citizenship. We encourage the children to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets, where food comes from and how it is farmed with consideration of the environment. The chosen projects encourage children to be responsible and to set targets to meet deadlines. They also learn through their understanding of personal hygiene, how to prevent disease from spreading when working with food. Children are encouraged to discuss how they feel about theirs and others work and critically evaluate the process of designing and making their products. They are taught how to do this constructively and without hurting the feelings of others.

Spiritual, moral, social, and cultural development

The teaching of design and technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Our groupings allow children to work together and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important and that the needs of individuals are not the same as the needs of groups.

Curriculum Impact

Our design and technology curriculum is skillfully designed to match the full range of pupils' needs and objectives set out in the National Curriculum. Our curriculum planning ensures that pupils have extensive opportunities to develop knowledge and understanding as well as practical skills in design and technology. We want our systematic links with other subjects to be highly productive in strengthening pupils' learning in design and technology and that projects are coherently planned in response to pupils' prior learning.

Through the curriculum planning and delivery of science at Haydn, we expect the vast majority of children to reach age related expectations or better by the end of each key stage. At the end of EYFS we expect the children to achieve the Early Learning Goal, achieving a 2 (expected) or 3 (exceeding) in the Understanding the world strand. By the end of Key Stage 1 we expect pupils to achieve age related standards (secure) or better (mastery) in the strands taught in design and technology. We want

our pupils to be demonstrating an interest and curiosity about the subject, to be able to talk confidently about their technological ideas and be able to evaluate their journey as they go along, using outcomes to inform their next steps.

By continuing to make the expected progress, by the end of Key Stage 2 we expect pupils to achieve age related standards (secure) or better (mastery) in all strands of the design and technology curriculum. The impact of our curriculum is measured by assessment of pupil attainment and progress, and through ongoing monitoring and reviewing of the subject through the role of the subject leader, as outlined below. We expect children to leave Haydn being able to work with increasing independence in developing their work and demonstrate resilience in solving design problems and technical challenges. It is important that our pupils develop excellent attitudes to learning, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs and the context for their work. We work towards our children holding a passion for the subject and that they keep up to date with new technological innovations in this rapidly changing world we live in.

Assessment and recording

Teachers assess children's work in design and technology by ongoing observations during lessons, through active questioning and regular marking of pupils' projects. They sometimes make notes of the progress that children make by assessing the children's work against the learning objectives for their lessons. At the end of a unit, each child is deemed to be either emerging, developing, secure or mastery for each of the objectives covered. This is based on their understanding and application of the content of the National Curriculum 2014 and this information is inputted into SIMs. At the end of the year, as part of the annual report, teachers inform parents on the progress their child has made and pass this information on to the next teacher. Progress and attainment are reported to parents through parents' evenings.

Resources

Our school has a range of resources to support the teaching of design and technology across the school. Classrooms have basic resources, with the more specialised equipment being kept in the resource cupboard. In Year 1, each child has an art, design and technology book to showcase their work. This allows children to draw and sketch their designs and prototypes and is carried through each year group up to Year 6.

Monitoring and review

The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the design and technology subject leader. The work of the subject leader also involves supporting colleagues in the teaching of design and technology, informing about current developments in the subject and what's on in and around Nottingham or courses and providing a strategic lead and direction for the subject in the school. The headteacher allocates leadership time to the design and technology leader so that s/he can review samples of children's work and undertake lesson observations of this teaching across the school. The subject leader builds a comprehensive portfolio of children's work across all key stages. This is evaluated thinking about typical progression in knowledge and skills. A termly report is written for the governor responsible for design and technology to keep them fully informed. This reports on recent development work, performance analysis, pupil outcomes in relation to development priorities, their impact on teaching and learning and any future developments. The governor meets with the subject leader to review progress termly and consider the report.

Signed: Katie Smith

Date: 11.5.20

Appendix 1 – EYFS Long Term Plan

EY Long Term Plan									
F1	**Term**	**Themes**	**PSED**	**Physical**	**C and L**	**Literacy**	**Maths**	**UW**	**EAD**
	Autumn 1	Me and My Nursery Autumn	Rules and Routines, Settling In, Getting to know each other. New Beginnings (SEAL)	Fine motor assessment. Learning to use tools, including pencil control Gross motor assessment and next steps	Daily story times including	Shark in the Park The Gingerbread Man – oral storytelling	See long term Maths Planning	Goose Fair Autumn Visit to Woodthorpe Park	Painting in response to Goose Fair
	Autumn 2	Festivals	Christmas performance Getting on and Falling Out (SEAL)					Bonfire Night Diwali Christmas Rosh Hashanah Food Prep Nocturnal animals Dark and light Lantern Walk	Transient Art Clay divas Performance, Singing Construction projects
	Spring 1	Winter Chinese New Year Cold Lands Cafe			Question of the day				
	Spring 2	Spring Easter						Our bodies The senses	
	Summer 1								
	Summer 2								
F2	**Term**	**Themes**	**PSED**	**Physical**	**C and L**	**Literacy**	**Maths**	**UW**	**EAD**
	Autumn 1	Me and My School	Rules and Routines, Settling In,	Fine motor assessment. Learning to	Introduction to oral storytelling	The Three Little Pigs	See long term maths	Goose Fair Autumn Visit to	Printing Models

		Autumn The Three Little Pigs	Getting to know each other. New Beginnings (SEAL)	use tools, including pencil control. Gross motor assessment and next steps.	– The Three Little Pigs. Daily story times incl. poem of the day. Speech in stories.	Autumn Information books Pumpkin Soup	plan	Woodthorpe Park	Construction
	Autumn 2	Festivals Little Red Riding Hood	Christmas performance Getting on and Falling Out (SEAL)	Introduce fasteners – split pins, treasury tags Gross motor – throwing and catching large balls	Preparing sentences, story maps, Story sequencing. Daily story times incl. poem of the day.	Little Red Riding Hood Owl Babies Non fiction books about nocturnal animals		Bonfire Night Diwali Christmas Food Prep Nocturnal animals Dark and light	Transient Art Clay models Performance, Singing Construction projects
	Spring 1	Winter Chinese New Year Cold Lands Getting to Know an Author (Oliver Jeffers)	Keeping warm Going for Goals (SEAL)	Fine motor assessment and next steps Gross motor assessment and next steps	Daily story times incl poem of the day.	One Snowy Night Oliver Jeffers Books – Lost and Found Non-fiction books		Chinese New Year Polar animals and lands Freezing and melting water Magnets Food prep Chinese food Café visit	Colour mixing Colour wash Dragon dancing Drumming Large modelling dragon head
	Spring 2	Long Long ago… Goldilocks and the Three Bears Jack and The beanstalk Easter Spring and growing	It's Good To Be Me (SEAL)	PE Getting dressed for PE Haydn Mile Jumping, hopping	Daily story times incl poem of the day.	Goldilocks and The Three Bears Snow White		Mother's Day Easter Growing	Observation drawing – oil pastels and watercolours Making jewellery
	Summer 1	People who help us	Relationships (SEAL) SRE	Go Ride sessions	Daily story times incl poem of the day.	Jack and The beanstalk		Lifecycle of a frog Castles and	Vegetable printing

		Families Our bodies				Supertato The Jolly Postman		living in the past People Who Help Us and helped us in the past Maps and our local community. Our bodies Keeping Healthy Our senses	
	Summer 2	Summer Minibeasts Arts Week	Changes (SEAL)	Final assessment	Daily story times incl. poem of the day. Retelling the Very Hungry Caterpillar	Non fiction books about minibeasts The Very Hungry Caterpillar Handa's surprise		Eid-al-Fitr Lifecycle of a Caterpillar and other insects Symmetry The Seaside	Arts Week

Links to the National Curriculum Key	
Science	
Geography	
History	
Art and Design	
DT	
Music	
R.E	
PSED	

Appendix 2 – Whole School Long Term Plan

			Literacy	Numera	Humanities					ARTS				Science and Technology	
	TERM	Themes and Enrichments			MFL	PSHE & Citizenship	History	RE	Geography	PE	D&T	Art	Music	Science	ICT
Year 1	AUTUMN	Holidays / Myself & my world / Under the sea	Writing simple sentences Information texts Stories & Poems Recounts Simple instructions Key texts - Paddington bear – Micheal Bond It's the Bear – Jez Alborough The bear and The hare – John Lewis advert (visual literacy)	See Long Term Maths Planning	Greetings/ Colours/ Numbers	New beginnings Getting on and falling out	Changes within living memory – family trees Local history – goose fair / Robin Hood	Christianity- stories of Jesus Diwali Hanukah	Name & Locate UK and its countries Capital cities – London Compare & contrast cities and countryside Compare UK and non-European country (Peru) Simple fieldwork Ariel photographs Using maps	Games Gymnastics	Designing making & evaluating aquariums Selecting and using a range of tools and equipment	Use a rang oe materials creatively to design and make products Use drawing and painting to expres ideas,	Singing for an audience – songs linked to topics on 'Ourselves' and Christmas performance	Myself – parts of the human body senses Seasonal change – Autumn and Winter Under the sea – Animals and habitats	Word processing Programming simple software, e.g. roamers and beebots. Retrieving digital content- using google
	SPRING	Polar regions / Space	Visual literacy Writing stories Recounts Instructions Diary entries Poems The Bear – Raymond Briggs Poles Apart – Jeanna Willis Lost and found – Oliver Jeffers Beegu – Alexis Deacon			Going for goals It's good to be me	Polar regions – significant individuals Robert Falcon Scott Space – significant people Neil Armstrong	Christianity Parables The Easter Story	Polar regions – Continents Compare weather Using maps and atlases	Gymnastics Dance	Designing making and evaluating Food technology – meringue icebergs	Using clay for sculpture Exploring new materials – chalk pastels	Listening to music linked to topics on 'Winter' and 'Space. Also play untuned instruments musically	Polar regions – Animals and habitats Carnivores, herbivores and omnivores Properties of materials Space – everyday materials Working scientifically	Using 2 create to make a simple book linked to topic.

Year 2

SPRING	AUTUMN	TERM	
Nonsense/ Venus Fly Trap *White Post farm.*	Where we live? What's in our local area? What different types of houses are there? *Blackwood's/Christmas*	**Themes and Enrichment**	
Non fiction- Venus Fly Traps. Nonsense poems- The Booktime Book of Fantastic First Poems. Michael Rosen. Acrostic poems- Animals. Instructions- How to plant a magic bean. Traditional tale- Twisted Jack and the Venus Fly Trap. Mr Gum- book review.	Welcome to NG5/ Into the woods. Tiger that came to tea- Invitation The Day the crayons quit- Letter Dragon Stoorworm- Description. Tidy – Story/ Poem Greenpeace- Letter Letter to Santa.		**Literacy**
See Long Term Maths Planning			**N**
Numbers to 12		**MFL**	**Humanities**
Mindfulness- Being kind to others. Children's Mental Health Week.	New beginnings/ Getting on and Falling out/ Anti-bullying	**PSHE & Citizenship**	
	(WW1 – Remembrance Day & Centenary)	**History**	
Buddhism	Christianity- The story of Jesus's birth.	**RE**	
Exotic plants around the world. Locate on a map.	Welcome to NG5- Different types of homes/ map labelling/ postcodes/ Sherwood/ Blackwoods	**Geography**	
Dance	Swimming/ Games/Gymnastics	**PE**	**ARTS**
Venus Fly Trap- levers and sliders,	Models of our homes.	**D&T**	
	Leaves and Autumn Colours- Blackwood's- Tidy book.	**Art**	
Play tuned instruments musically – introduce simple chords and play	Singing for an audience – 'Christmas' production. Songs about animal habitats	**Music**	
Animals, including Humans Health & Growth- Venus fly traps/photosynthesis/ life cycle of a plant/ germination. The night flower	. Living Things & Their Habitats- Focus on Nocturnal / woodland animals.	**Science**	**Science and Technology**
Unplugged activities/ Venus Fly Trap poster on word- focus copy and pasting/ saving/ opening document.	Entering text/Saving & Opening documents Google Earth – finding locations/ E- safety posters. Tour of the server room.	**Computing**	

SUMMER	
Dinosaurs / Rainforests	
Descriptive writing –setting descriptions Fiction writing Poetry Phonics / reading comprehension Key texts - Harry and the bucketful of dinosaurs – Ian Whybrow Sloth Slept On – Fran Preston-Gannon	**Literacy**
	N
Drug aware SRE Transitions	
Dinosaurs – comparing ways of life to the prehistoric world	
Other beliefs, e.g. Islam and Sikhism	**Humanities**
Dinosaurs – Using vocabulary linked to key physical features – prehistoric world Continents – Pangea Rainforests – Continents Seasonal and daily weather patterns in the UK and other country related to the equator Using maps, atlases and globes	
Designing and making 3D models – dinosaur landscapes	**ARTS**
Drawing, painting and sculpture, observational drawing, exploring a range of materials	
Experimenting with selecting and combining rhythms – introduction of rhythmic notation	
Rainforests – Plants and animals	**Science and Technology**
Word processing linked to literacy.	

Year 3

AUTUMN	TERM	
Romans/ Shakespeare Julius Caesar& Anthony and Cleopatra / Escape from Pompeii C Balit	Themes and Enrichment/ Core Books	
Myths Information Texts/reports Letters Boudicca – heroine or terrorist? 'Vacation Under A Volcano' Story Instructions Myths and legends Shape poems		Literacy
See Long Term Maths Planning		Numeracy
See the national curriculum		
Spanish speaking countries, Greetings, Introducing ourselves, asking and answering simple questions- Numbers 1-20, playground games	MFL	Humanities
Romans, timeline, Pompeii	History	
Christian Symbols (linked to textiles)	RE	
Volcanoes and Italy	Geography	
Swimming, cricket, basket ball, football	PE	ARTS
Olive pot, Book front cover design	D&T	
3D casts and press mould, roman tiles,	Art	
Introduce written notation Listen to and analyse music Introduction of	Music	
Light and dark Rocks and soils	Science	Science and Technology
Programming - Scratch	Computing	

Year

SUMMER	TERM	
WW2/ Ahoy there! Sleepover/ Woodthrope Park.	Themes and Enrichment	
WW2 Nonfiction texts. Great Women in History Non fiction text and Jamaica. Amelia Earhart- Non fiction text- Talking story- Adventure story. Letter to David Attenborough- Jamaican animals. Bird fish- Animal description. Diary entry- Mary Seacole.		Literacy
	See	Numeracy
	MFL	Humanities
SRE	PSHE & Citizenship	
Florence Nightingale/ Mary Seacole WW2- Submarines/ Spitfire/ Amy Johnson/ British Timeline./Nottingham Blitz.	History	
Judaism – The Torah Festivals/ Hanukah /Christianity Belonging and Beliefs/	RE	
Ahoy there! Comparing UK and Jamaica. Map work and climate/ population physical geography labelling.	Geography	
Athletics/ games/	PE	ARTS
Submarines	D&T	
Sherwood Arts Week theme. Study of a local artist and international	Art	
Playing Steel pans – Listening to Caribbean music and reggae	Music	
Uses of everyday materials	Science	Science and Technology
Computing week- Jamaican PowerPoint/ Scratch Junior.	Computing	

Year 3		Themes and Enrichment/ Core Books	Literacy	Numeracy		Humanities				ARTS				Science and Technology	
	TERM			See Long		MFL	History	RE	Geography	PE	D&T	Art	Music	Science	Computing
	SPRING	At the movies	Script writing Planning and editing Reports Poems to perform Dialogue and play Adventure and mystery		See the national curriculum	What are you good at, months of the year, simple party games, respond to and write simple sentences and phrases, understand additional verbs, follow instructions	Movie history	Sikhism	Planet Based Diets + carbon footprints	Gymnastic/ Swimming	Stop motion/Claymation/	Rangoli patterns		Body Forces and Magnets	
	SUMMER	In the Wild	Hernan Cortes Stories with familiar settings Language play Information texts Explanations Authors and letters		See the national curriculum	Day of the Dead – festival, Follow a simple story and respond to it. Understand descriptions (simple)	Aztecs/Incas/Mayans - Hernan Cortes/	Buddhism	Climate/change in environment	Sherwood Arts Week	Shelter building	Printing		Light Plants	

			Literacy	Numera	Humanities					Arts				Science and Technology	
	TERMM	Themes and Enrichment/ Core Books			MFL	PSHE & Citizenship	History	RE	Geograph	PE	D&T	Art	Music	Science	Computing
Year 4	AUTUMN	Ancient Egypt/Electricity The Egg/ Egyptian Cinderella Where the poppies now grow.	Narrative – Issues and Dilemmas/ Reports (Newspaper) Tuesday Poetry (Exploring Form)	See Long Term Maths Planning	How do we travel, written and oral sentences Memorise and present short texts. Writing to a travel agents/ read and respond to email.	Changes/ Feelings/ New beginnings	Egypt	Judaism (Moses)		See Matt's Plans	Circuits/ Cooking- Egyptian flatbread/ Make Shaduf	Collage/tactile elements Dragons eyes Scarab Beatles- 3 D and impression Masks, Sarcophagus masks Cartouches	Ancient Egypt - understanding and playing chords	Sound Electricity	Stykz- animation/ Cut and paste tools
	SPRING	Anglo Saxons/ Beowulf- historical narrative/	Historical Narrative Recount – revisit report Persuasive writing Poetry Kennings Cinquains		Listen and respond with actions to story- (Beauty and the Beast) Recognise adjective and nouns and write simple sentences/ Apply simple agreements to adjectives. Perform story in front of audience	Relationships SRE	Anglo Saxons	Christianity – Miracles and teachings of Jesus	Rivers		Anglo Saxon Village- weaving and plaiting	Anglo Saxon helmets/ shields/ jewelery	Learning songs, rehearsing and performing for an audience – Year 4 production	Digestion / Teeth Changes of State/Solids and liquids/ Gases	Dance Mat Word skills- word processing- create newsletter

Year 5

AUTUMN	TERM	
'The Explorers' Katherine Rundell 'Where the forest meets the sea' 'The Hidden Forest'.	Themes and Enrichment/ Core Books	
Myths and legends (Greek) Play scripts Persuasion		Literacy
See Maths Plans		Numeracy
Food, packed lunch, ordering food, food for celebration/ local area/	MFL	Humanities
New Beginnings Getting on and Falling Out	PSHE & Citizenship	
Ancient Greeks	History	
Judaism	RE	
Forests	Geography	
Gymnastics/ Swimming Net & Wall	PE	ARTS
	D&T	
Record from experience, imagination and firsthand observation. Collect visual examples to develop ideas. (Goldsworthy	Art	
Space – focus on Holst Planet's Suite – tempo, dynamics, orchestration. Mars – focus on rhythm	Music	
Earth & Space Forces	Science	Science and Technology
Scratch Including switches (link to DT objectives)	Computing	

SUMMER	TERMM	
Rwanda /Habitats Living Islands Live Rivers Castleton Camp Wind in the Willows	Themes and Enrichment/ Core Books	
Poetry – descriptive and explanatory (Castleton)		Literacy
	See Long	Numera
Carnival of the Animals Name animals/ habitats Listen for sounds rhythm and rhyme	MFL	Humanities
Caring for our world and others Drug Aware	PSHE & Citizenship	
	History	
Islam	RE	
Rivers/ China	Geograph	
	PE	Arts
Wheels and Axles- design a car for Toad	D&T	
Water colours- use Monet- wind in the willows watercolors/ sketching from life Hockney ipad Art- Optical patterns	Art	
Compositions to tie in with literacy topic – rehearsing, evaluative and performing	Music	
Food chains and Habitats	Science	Science and Technology
Programming (Kodu)	Computing	

Year 5

	TERM	SUMMER	SPRING
	Themes and Enrichment/ Core Books	Street Child	'The Merchant of Venice'William Shakespere
Literacy		Street Child Berlie Docherty Recount Film Narrative (Dickens)	Ted Hughes - Key Author Classical Poetry Instructions
Numeracy		Pattern - rangoli	Practical measuring opportunities related to DT food work Statistics - co-ordinates link to orienteering
Humanities	MFL	Months of the year/ Seasons/ Weather Short pieces of writing about the weather/ seasons/ planets	Pronunciation / intonation of alphabet/ features in the locality/ journey to school/following directions
Humanities	PSHE & Citizenship	Relationships Changes SRE	Going For Goals Good to be Me Drug Aware
Humanities	History	Victorians local Study Queen Victoria Victorian Railways	Local History- Tudors/ Wollaton Hall
Humanities	RE	Hinduism	Christianity
Humanities	Geography		
ARTS	PE	Athletics Striking & Fielding	Dance/ Ice Skating Invasion Games
ARTS	D&T	Moving Toys Cam mechanisms Product Improvement and development Use	Cook food - investigating taste, flavour and texture changes
ARTS	Art	Mastery of Techniques Great Artists (William Morris)	Materials and processes using craft and design. The roles and purposes of artists working in different times and cultures
ARTS	Music	Victorians: composition using rhythm. Focus on Classical and Romantic composers	Performance to tie in with Shakespeare Project
Science and Technology	Science	Properties and Changes of Materials	Living Things and their Habitats
Science and Technology	Computing	Digital Media Computing Theory	Presentations Databases

Year 6

SPRING	AUTUMN	TERM	
Class novel: Letters from the Lighthouse	Class novel: Wonder	Themes and Enrichment/ Core Books	
Class novel: Letters from the Lighthouse Non-fiction: Arguments Biography Information texts Journalistic writing Persuasion (letters) Narrative: Evacuation Grammar Comprehension	Class novel: Wonder Narrative genres: Journey Shakespearean play Poetry - The Highwayman Non-fiction: Instructions Grammar Comprehension		Literacy
See Long Term Maths Planning			Numeracy
Fluency, problem solving and reasoning. Consolidation of all topics Times tables Arithmetic 5 a day Plus circles and extended algebraic concepts.	Fluency, problem solving and reasoning. Consolidation of all topics Times tables Arithmetic 5 a day Plus circles and extended algebraic concepts.		Numeracy
Food/ recipes/ celebrations/ planning a celebration. Creating a café/ visiting the café Whats in the news? Read and understand main points? Express opinion about new story.	Languages and cultures in school Where is spain? Classroom objects Translation of short conversations-/ undersatdnding of short written passages/ where things are/ simple directions Attitudes towards everyday life Continents and rivers/ Amazon/ Weather/ Explorers	MFL	Humanities
Enterprise project	Street Aware Peer Mediation	PSHE & Citizenship	
WW II linked to local history and class novel	Goose Fair British History: 20th Century leisure and entertainment	History	
Christianity/Islam	Buddhism	RE	
	Extreme Earth	Geography	
Invasion games	Dance Swimming Tag rugby	PE	ARTS
	Fairground rides linked to history and Goose Fair	D&T	
Linked to topic	Linked to topic	Art	
History of music: Classical (Beethoven's 5th symphony, focussing on rhythm) Romantic (Mussorgsky) detailed analysis	History of music: listening and appraising - Renaissance and Baroque - Handel, Mozart's 4th horn concerto	Music	
Body Pump	Evolution and inheritance	Science	Science and Technology
	Programming HTML Crumble	Computing	

Year 6

SUMMER	TERM	
Narrative Fiction: The Long Walk Residential to Caythorpe	Themes and Enrichment/ Core Books	
Narrative Fiction: The Long Walk The Arrival Information texts Recounts Grammar Comprehension		Literacy
	See Long Term	Numeracy
Fluency, problem solving and reasoning. Consolidation of all topics Times tables Arithmetic 5 a day Plus circles and extended algebraic concepts.		Numeracy
Understand places in the town Centre. Writing, reading and speaking in more complex sentences and phrases. Tourist guides	MFL	Humanities
Great Project SRE	PSHE & Citizenship	
Late Neolithic hunter gatherers Or The Bronze Age Or Iron Age hill forts	History	
Islam	RE	
	Geography	
Athletics Striking and fielding Net/wall	PE	ARTS
Dyson Project	D&T	
Art Week SAW plus	Art	
Performance – singing with confidence, expression and control – performing for an audience	Music	
Light	Science	Science and Technology
Dyson Project	Computing	

Appendix 3 – Example Medium Term Plan

Foundation Subjects Medium Term Planning

Year Group: 6 Subject/ topic: DT – Fairgrounds - Link to computing, art and design and science. Term: Autumn

Week	Key Questions Theme	Objective/ Learning Outcomes	Activity	Key Vocab	Differentiation	Resources/ including ICT
1	How do things move? Can children identify everyday objects that use electrical motors to cause rotation? Can children identify how rotation is used in fairground rides? Can children explain how electrical circuits and motors are used to make objects rotate?	To look at a range of familiar products that use rotating parts.	Ask: How many different fairground rides have you been on? What were they like? How did they move? Share ideas. Look at the different pictures of fairground rides on the slides. Ask: How does it turn? Can you see the mechanism? How are the components joined together? Explain that lots of rides and everyday objects use electric motors to make them work. Show pic of circuit with a motor on. KQ: How does the motor work and how many other objects can they think of that might use an electric motor to make parts rotate? Think, pair, share. Activity: In sketch books or on paper, ask children to sketch a fairground ride from the picture cards or from their memory and label how the rotating parts work. Plenary: How could you speed up or slow down the rotation of an object or part of an object using an electrical circuit? Children share ideas.	Circuit Motor Rotate, rotating, rotation Electrical Component Movement	Mixed ability groups – peer support, teacher support. questioning, observation.	Slides Picture cards Worksheet 1A/1B/1C Objects with rotating parts Large sheet of paper

2	Can children describe how an electrical circuit with a motor can be used to create rotating parts? Do children understand how pulley and belt systems can be used to transfer movement? Can children use electrical components to investigate ways of creating replica fairground rides?	To investigate ways of using electrical motors to create rotating parts.	Show children the components needed to make an electrical circuit with a motor using the pictures on the slides and real objects if possible. KQ: How can this be used to make a fairground ride with a rotating part? What would we need to attach to the motor? What different kinds of rotating parts could we have? Think, pair, share ideas. Go through the info on the slides showing how pulley and belt systems can be used to transfer movement from one axle to another. How could we use this in a design for a fairground ride? Explain that we will be investigating how to use these systems to create different kinds of fairground rides. What rides do you think might use systems like this? Think, pair, share ideas. Activity: Provide children with wires, motors, switches, card, elastic bands, reels etc and ask them to create a circuit suitable for making a fairground ride. (Challenge card B) Extension: How could they change the speed of rotation and how could it be controlled? Plenary: Children describe the systems they created explaining how they work and how they make the moving part of the fairground ride move.	Circuit Motor Rotate, rotating, rotation Electrical Component Movement Motion Switch Wire Control Speed Pulley, Belt	See extension activity. By outcome, confidence, experience.	Slides Challenge cards A,B Wires, motors, switches, etc for electrical circuits Elastic bands, cotton reels, dowelling, card etc

3	Can children describe ways of strengthening and reinforcing structures? Can children suggest ways in which ideas for frameworks could be developed to ideas for their own fairground ride designs? Can children use a variety of materials and components accurately?	To investigate ways of making the framework for a fairground ride.	Show children the pictures of various fairground rides on the slides and ask them to think about how they could create frameworks for these rides using e.g. cardboard doweling etc Tell children that today they will be investigating different ways of making frameworks in preparation for designing and making their own fairground rides. Go through the slides showing different ways of strengthening materials and joins e.g. using avid triangles and diagonals. Activity: Children to work through the challenges on the appropriate worksheet (3A,B,C) describing how they could use the ideas in their designs for their fairground rides. Provide card paper string straws doweling scissors glue tape and any other appropriate materials. Plenary: Invite children to share their work with the rest of the class. What ideas did they get for their own designs as they were working? Did they find the processes easy or difficult? How could they combine the electrical circuit with their framework design? Children to share their ideas.	Circuit Motor Rotate, rotating, rotation Electrical Component Movement Motion Switch Wire Control Speed Pulley, Belt Strengthening Reinforcing Developing	Differentiation by outcome, experience and confidence Teacher and peer support	Slides Worksheet 3A 3b 3C Card dowelling string paper straws etc Glue scissors rulers etc

4	Can children make a decision about what kind of ride will make? Can children design an appropriate electrical circuit for their ride. Can children describe the process they need to go through to successfully complete their product?	To be able to design a fairground ride with a rotating part.	Explain that in the next few lessons they will be designing and making and evaluating their own rides. They need to form good working groups of about 3, 4 or 5. Discuss their ideas so far about a design for their own fairground ride? Encourage children to think about work they have done on using circuits and motors, and on creating stable frameworks. KQ: What kind of ride would they like to make? Which part will rotate? How will they control movement? How will they make a framework? Children think, pair, share their ideas and agree on groups. Activity: In groups, children design their own fairground ride using the appropriate worksheet. Extension: children to think about how they will make their structure stable and how they will control the speed of the moving part. Plenary: Children to show designs to the class. Is the design clear? Have they included all the details they need to include? What do you like about their design? Is there anything they can think could be improved upon?	Circuit Motor Rotate, rotating, rotation Electrical Component Movement Motion Switch Wire Control Speed Pulley, Belt Strengthening Reinforcing Developing evaluate, evaluation	Differentiation by outcome, experience and confidence. Teacher and peer support	Slides Worksheet 4a/ 4B Paper Design card

5	Can children follow a design to create a fairground ride with a rotating part? Can children work accurately and safely with a variety of tools, materials and electrical components? Can children identify ways of improving their fairground rides to create a finished product of high-quality?	To be able to make a fairground ride following a design.	Ask the children to look through their designs from lesson 4 and look through to remind themselves of what they want to achieve. Challenge children to describe the making process to their group to ensure they have thought carefully about how they will go about making their fairground ride. Go through the questions on the slides. KQs: How will you make sure your finished product we look like your original design? How will you make sure your framework structure is stable? What will you do if something goes wrong? How will you make sure you work safely with the various tools, materials and electrical components? Activity: In groups, children work together to follow the designs to create their own fairground rides with rotating parts. Ensure children work to a high standard and that they use a variety of finishing techniques to make sure their finished product looks good as well as works accurately. Plenary: Encourage children to look carefully at the finished product to ensure there is nothing more they can do to improve it further. Are there any joins that need to be made more secure? Can you see any parts of the electrical circuit that should be hidden? Does your fairground ride look good as well as work well?	Circuit Motor Rotate, rotating, rotation Electrical Component Movement Motion Switch Wire Control Speed Pulley, Belt Strengthening Reinforcing Developing evaluate, evaluation assessment	Differentiation by outcome, experience and confidence. Teacher and peer support	Slides Completed designs from lesson 4 Appropriate components for electrical circuits Card doweling straws string elastic bands Cotton reels empty boxes etc Scissors craft knives glue sellotape etc

6	Can children evaluate a finished product fairly? Can children suggest ways they could improve their product if they were to make it again? Can children recognise ways in which they have been successful?	To be able to evaluate a finished product.	Ask the groups to look at their fairground rides. Collate the rides and create a mini fairground in the classroom by grouping all the completed rides together. Give the children some time to look at the other rides and examine how they work. Which designs do you like best and why? Go through the questions on the slides as a class. KQs: Why do you think it is so important to evaluate a finished product? What's the best/worst aspect of their design and fairground ride? What would you do differently if you were to make it again? Children discuss their answers with a partner and as a class. Activity: Complete the evaluation on worksheet (6A,B) Plenary: What do you think is the most important thing you have learnt through this unit? Why? Include the teamwork aspect. Children to think, pair, their share ideas. Extension: Children to write a recount of the designing and making process using questions on worksheet 6C as a guide. Children to describe what they most enjoyed about making it, what they found most tricky, how they overcame problems and what they have learnt during the process. Children could take photographs to copy and paste it onto a document and or find a picture of the fairground ride they were replicating. When all the work is completed it could be made into a class book or display and shared with the school.	Circuit Motor Rotate, rotating, rotation Electrical Component Movement Motion Switch Wire Control Speed Pulley, Belt Strengthening Reinforcing Developing evaluate, evaluation assessment	Differentiation by outcome, experience and confidence. Teacher and peer support. See extension	Completed fairground ride models slides Worksheet 6A/6B Worksheet 6C

Appendix 4 – Design and technology progression ladder

		EYFS	KS1		KS2			
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	**Understanding contexts, users and purposes**	All pupils should: ▪ State what they are designing and making and how it works ▪ State what the product is for	All pupils should: ▪ State what products they are designing and making ▪ Describe what their products are for ▪ Say how their product works ▪ Say how they will make their product suitable for the user	All pupils should: ▪ State what products they are designing and making ▪ Say whether their product Is for themselves or other users ▪ Describe the key purpose and function of their product ▪ Say how their product works ▪ Say how they will make their product suitable for the user ▪ Use simple design criteria to help develop their ideas	All pupils should: ▪ Describe the purpose of their products ▪ Indicate the design features of their products that will appeal to intended users ▪ Explain how particular parts of their products work ▪ Develop their own design criteria and use these to inform their ideas		All pupils should: ▪ Describe the purpose of their products ▪ Indicate the design features of their products that will appeal to intended users ▪ Identify the needs, preferences and values of particular individuals and use this to inform their design ▪ Explain how particular parts of their products work	
	Generating, developing, modelling and communicating ideas	All pupils should: ▪ Share their ideas through active discussion ▪ Learn to record their experiences by drawing, writing, voice recording or modelling	All pupils should: ▪ Draw on own personal experiences to generate ideas ▪ Use knowledge of existing products to come up with own ideas ▪ Communicate and develop ideas through active discussion and designing	All pupils should: ▪ Draw on own personal experiences to generate ideas ▪ Use knowledge of existing products to come up with own ideas ▪ Communicate and develop ideas through active discussion and designing ▪ Model ideas through templates or mock ups ▪ Use ICT where appropriate to help develop ideas	All pupils should: ▪ Share ideas through active discussion ▪ Model their ideas using prototypes or pattern pieces ▪ Use annotated sketches, drawings or diagrams to develop and communicate ideas ▪ Use CAD to develop and communicate ideas ▪ To generate ideas that are realistic focussing on the needs of the consumer		All pupils should: ▪ Share ideas through active discussion ▪ Model their ideas using prototypes or pattern pieces ▪ Use annotated sketches, drawings or diagrams to develop and communicate ideas ▪ Use CAD to develop and communicate ideas	
Making	**Planning**	All pupils should: ▪ Have a purpose in mind when planning to build or make a product or object ▪ Understand what tools they need to use to make a product e.g. scissors, glue, tape	All pupils should: ▪ Select from a range of tools and equipment ▪ Select from a range of materials and components according to their characteristics	All pupils should: ▪ Select from a range of tools and equipment ▪ Select from a range of materials and components according to their characteristics ▪ To explain their choices in equipment and materials	All pupils should: ▪ Select tools and equipment that are suitable for the task ▪ Select materials and components that are suitable for the task ▪ Explain their choice of these according to their properties and aesthetic qualities ▪ Order the main stages of making		All pupils should: ▪ Select tools and equipment that are suitable for the task ▪ Select materials and components that are suitable for the task ▪ Explain their choice of these according to their properties and aesthetic qualities ▪ Produce appropriate lists of tools, equipment and materials they will need for making	

	Practical skills and techniques	All pupils should: ▪ Use simple tools and techniques competently and appropriately ▪ Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary ▪ Select the tools and techniques they need to shape, assemble and join materials they are using	All pupils should: ▪ Follow procedures for safety and hygiene ▪ Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components ▪ Measure, mark out, cut and shape materials and components ▪ Assemble, join and combine materials and components ▪ Use finishing techniques, including those from art and design	All pupils should: ▪ Follow procedures for safety and hygiene ▪ Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components ▪ Measure, mark out, cut and shape materials and components with some accuracy ▪ Assemble, join and combine materials and components with some accuracy ▪ Apply a range of finishing techniques, including those from art and design, with some accuracy	All pupils should: ▪ Follow procedures for safety and hygiene ▪ Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components ▪ Accurately measure, mark out, cut and shape materials and components ▪ Accurately assemble, join and combine materials and components ▪ Accurately apply a range of finishing techniques, including those from art and design ▪ Show resourcefulness when tackling any practical problems

		EYFS	**KS1**		**KS2**			
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluating	**Existing products**	All pupils should explore: ▪ A variety of products understanding their key purpose and how they work ▪ How everyday objects work by dismantling things and looking closely at their component parts	All pupils should explore: ▪ What products are and who they are for ▪ How the products work, how and where they are used ▪ What materials products are made from ▪ What they like and dislike about products		All pupils should explore: ▪ How well products have been designed and made ▪ Why materials have been chosen ▪ What methods of construction have been used ▪ How well products work and achieve their purpose and needs of the user ▪ Who designed and made the product ▪ Where the products were designed and made ▪ When the products were designed and made ▪ Whether they can be recycled or reused		All pupils should explore: ▪ What products are and who they are for ▪ How the products work, how and where they are used ▪ What materials products are made from ▪ What they like and dislike about products ▪ How much products cost to make ▪ How innovative products are ▪ How sustainable the materials in products are ▪ The products impact beyond their intended use	
	Own ideas and products	All pupils should: ▪ Talk about their ideas and what they made ▪ Talk about the reasoning behind what they made ▪ Identify parts that work and don't work	All pupils should: ▪ Talk about their design ideas and what they are making ▪ Make simple judgements about their ideas	All pupils should: ▪ Talk about their design ideas and what they are making ▪ Make simple judgements about their ideas against the design criteria ▪ Suggest how their products could be improved	All pupils should: ▪ Identify the strengths and areas for development in their ideas and products ▪ Consider the views of others, including intended users, to improve their work ▪ Refer to their design criteria as they design and make ▪ Use their design criteria to evaluate their completed products		All pupils should: ▪ Identify the strengths and areas for development in their ideas and products ▪ Consider the views of others, including intended users, to improve their work ▪ Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make	

Technical Knowledge	**Making products functional**	All pupils should: ▪ Explore how to make structures stand up and strong ▪ Know about simple mechanisms such as how wheels turn to move a car	All pupils should know: ▪ About simple working characteristics of materials and components ▪ About the movement of simple mechanisms such as levers, sliders, wheels and axles ▪ How free standing structures can be made stronger, stiffer and more stable	All pupils should know: ▪ How to use learning from science to help design and make products that work ▪ How to use learning from mathematics to help design and make products that work ▪ That materials have both functional properties and aesthetic qualities ▪ How mechanical systems such as levers and linkages or pneumatic systems create movement ▪ How simple electrical circuits and components can be used to create functional products ▪ How to make strong, stiff shell structures	All pupils should know: ▪ How to use learning from science to help design and make products that work ▪ How to use learning from mathematics to help design and make products that work ▪ That materials have both functional properties and aesthetic qualities ▪ How mechanical systems such as cams or pulleys or gears create movement ▪ How more complex electrical circuits and components can be used to create functional products ▪ How to reinforce and strengthen a 3D framework
Cooking and Nutrition	**To know where food comes from**	All pupils should know: ▪ That all food comes from either plants or animals ▪ That food must be farmed, caught or grown elsewhere (e.g. home, ocean, farm)	All pupils should know: ▪ That all food comes from either plants or animals ▪ That food must be farmed, caught or grown elsewhere (e.g. home, ocean, farm)	All pupils should know: ▪ 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	All pupils should know: ▪ 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 ▪ That seasons may affect the food available ▪ How food is processed into ingredients that can be eaten or used in cooking
	Food preparation, cooking and nutrition	All pupils should: ▪ Begin to understand some of the tools, techniques and processes involved in food preparation ▪ Know that to be healthy humans should eat fruit and vegetables everyday ▪ Practice stirring, mixing, pouring and blending ingredients during cooking activities	All pupils should know: ▪ How to name and sort foods into the five main groups ▪ That healthy humans should eat at least five portions of fruit and vegetables every day ▪ How to prepare simple dishes considering safety and hygiene without using a heat source ▪ How to use techniques such as peeling, cutting and grating.	All pupils should know: ▪ How to prepare and cook a variety of savoury dishes considering safety and hygiene (Can use heat source when appropriate) ▪ How to use a range of techniques such as chopping, peeling, slicing, grating, mixing, spreading, kneading and baking ▪ That a healthy diet is made up from a balance of food and drink ▪ That food and drink provides energy for the body	All pupils should know: ▪ How to prepare and cook a variety of savoury dishes considering safety and hygiene (Can use heat source when appropriate) ▪ How to use a range of techniques such as chopping, peeling, slicing, grating, mixing, spreading, kneading and baking ▪ That recipes can be adapted ▪ That food and drink contains different substances that are needed for health (water, fibre, nutrients)

		EYFS	**KS1**		**KS2**			
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Non Negotiable: What knowledge or skills must they know? **Decided by the teachers.**	I can tell an adult what I have made. I can use the tools in the workshop appropriately. I can say why I like my model. I can make a structure that is able to stand up. I know that I need to eat fruit and vegetables to be healthy.	I can say what I am designing and making. I can select appropriate tools and materials. I can say what I like and dislike about what I have made. I can suggest how to make something stronger. I can identify foods that come from plants and animals.	I can discuss why I have selected certain design ideas. I can explain my choices and material selection. I can discuss what materials are suitable and not. I will know the difference between levers and sliders. I can understand that food must be caught, grown or farmed.	I can describe the purpose of my product. I can mark out, measure and cut materials with accuracy and independence. I can identify strengths and weaknesses of my own work. I cam explain how levers and linkages can create movement. I can understand how food is cooked.	I can develop my own designs and use this to inform future ideas. I can select tools, equipment, materials and components suitable for the task. I can assemble, join and combine materials and components with some accuracy. I can use design criteria to evaluate. I can understand what a healthy and balanced diet is.	I can model my ideas through using annotated sketches and prototypes. I can evaluate the quality of the product and if it fits its use. I can understand how mechanical systems work such as cams. I can accurately assemble and join materials and components using a range of tools. I can identify how food is processed into ingredients.	I can articulate the key purpose of the product. I can use annotated sketches in designing. I can critically evaluate my work. I can understand how mechanical systems work. I can understand that food and drink contains different substances.
What trips or extra-curricular activities are available for pupils in your year group?	Autumn Walk – collecting natural materials for construction	Lego Club Art Club Space Centre – Design and make a rocket.	Lego Club Art Club Blackwoods Forest	Lego Club Art Club Lincoln Castle – Make a shield Cinema – Animated film performing shadow puppets	Lego Club Art Club Castleton – Candle making DERBY Museum – Make a Shabti	Lego Club Art Club Prop making for Shakespeare production.	Lego Club Art Club Caythorpe – Raft and Buddy building
What texts could you use to give your reading a purpose?	Lets Build a house. By Mick Manning	Audrey the amazing inventor. By Rachel Valentine Eddies garden, how to make things grow.	The Magnificent Thing. By Ashley Spires Good enough to eat. By Lizzie Rockwell	Izzy Gizmo and the Invention Convention. By Pip Jones and Sara Ogilvie	Rosie Revere Engineer. By Andrea Beaty	Iggy Peck Architect. By Andrea Beaty	Girls think of everything – Stories of ingenious inventions by women. By Catherine Thimmeah The Dragon Machine – Helen Ward