Design and Technology Subject Policy

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Policy Monitoring, Evaluation and Review

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1.0	May 2024	K Hussey and R. Trivett	Initial policy written

Contents

Together We Make a Positive Difference

ENTHUSIASM	KINDNESS	RESPONSIBILITY	RESILIENCE	COURAGE	CURIOSITY
Offering a knowledge-rich, culturally inclusive, exciting curriculum that breeds enthusiasm for learning.	Giving pupils the steps to succeed, respect others, work collaboratively and become kind, inclusive members of society.	Teaching pupils to become responsible citizens to themselves, their families, the school, the community and the wider world.	Allowing pupils to make mistakes, the opportunity to adapt to change and build resilience to overcome adversity.	Providing the occasion for pupils to push boundaries, challenge their world view and be courageous in their decision making.	Fostering a culture of curious questioning, independent research, self-led learning and discovery through exploration.

Design & Technology Intent 

Each outcome piece has a specific purpose and design brief.	We provide opportunities for peer /self-evaluation and constructive feedback.	Pupils are responsible for using and looking after resources and materials.	Units are planned with opportunities for practice and re-drafting.	Pupils are encouraged to have a go at new skills.	Pupils investigate how things are made and where things come from.
Pupils use a range of materials to create a broad range of outcomes.	We encourage collaborative working and sharing knowledge with our peers.	Pupils are taught how to make healthy choices when buying and making food.	Pupils solve real-life problems by using trial and error and through testing materials.	Ambitious and challenging outcome pieces are planned.	Pupils explore a range of materials and skills.
We make links with our feeder secondary schools and use their facilities.	Pupil outcomes are valued, displayed or presented to an audience.	Pupils are trusted to use a range of, increasingly dangerous, equipment: e.g. saws.	Materials are available for making mistakes and adaptions to their original plans.	Pupils present their outcomes to a wide range of audiences.	Pupils learn how design and technology fits into real life: e.g. STEM opportunities.

Design & Technology

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.

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

KS1 pupils should be taught:	**KS2 pupils should be taught:**
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].	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].

Progression of Knowledge and Skills

Elements	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Research	I can observe and talk about different types of technology. I can begin to ask questions about how things work.	I can explore which materials are best for my product. I can begin to use research to design a product.	I can explore the purpose of some technologies e.g. drawstring bridge and pop-up puppet. I can explore how things work. I can research and carry out tests to decide which materials are best.	I can begin to gather information from various sources. I can identify the purpose for what I am designing.	I can explore and analyse existing products. I can use research to inspire and influence my design.	I can conduct independent research to support my design. I can begin to use a wider range of sources, including digital technologies, to gather detailed information and derive inspiration for designs.	I can conduct independent research with an emphasis on identifying users needs. I can use a wider range of sources, including digital technologies, to gather detailed information and derive inspiration for designs.
Design	I can draw or talk about simple designs.	I can design simple structures or products with purpose in mind. I can begin to communicate my ideas through talking, drawing, templates or mock-ups.	I can consider how my design meets a specific criterion. I can select the right materials to meet a specific criterion. I can communicate my ideas through talking, drawing, templates or mock-ups.	I can design a working product following a specific criterion. I can begin to consider the aesthetics of my design. I can communicate my designs through detailed sketches and models.	I can create detailed designs through sketching, modelling and digital tools. I can consider the aesthetics of my design. I can communicate my design ideas through annotated sketches.	I can design appealing structures and products that are fit for purpose. I can communicate my design ideas though prototypes and annotated sketches.	I can establish the users needs and wants and incorporate them into my designs. I can communicate my ideas through cross-sectional and exploded diagrams.
Construction	I can explore different construction materials. E.g. Lego, blocks, cardboard, playdough. I can create basic structures by stacking, connecting and assembling parts.	I can use scissors safely to cut and shape different materials. I can join materials together using glue and tape.	I can use scissors safely to cut and shape different materials with increasing precision. I can join materials with increasing accuracy using glue, string, staples or tape. I can begin to understand how to make a product more stable.	I can use a wider range of materials and tools such as plastic, wood, elastic, drawing pins, hot glue guns, serrated scissors, handsaws, sandpaper and hand drills.	I can use tools such as a craft knife, ruler, hole punch, scissors with accuracy and precision.	I can use tools and materials such as a craft knife, ruler, pencil, scissors, split pins, glue, twine, saw, cardboard, tape and dowl with accuracy, precision and growing independence. I can undertake more complex construction projects that require precision and attention	I can use a range of tools and materials independently to produce more complex constructions that require precision, attention to detail, involving multiple steps and combining different materials. I can use advanced structural principles

						to detail, combining different materials.	such as how triangles can be used to strengthen.
Food/ nutrition	I know the names of some fruits and vegetables. I can begin to understand where fruit and vegetables come from.	I know which food are healthy and unhealthy. I know that too much sugar is not healthy. I can use the colour system of green, yellow, red on packaging to decide if food is good for me.	I know the difference between fruits and vegetables. I know where some fruits and vegetables grow. I can begin to understand the health benefits of fruits and vegetables. I can begin to understand what is included in a balanced diet.	I know that fruits and vegetables are seasonal produce. I know that some food is grown in other countries. I know the main flavours of the Mediterranean.	I know the impact of too much sugar on my health. I know which food contains unhealthy sugars. I can understand what is included in a balanced diet.	I know cultural differences and preferences with food e.g. vegetarian, halal, haram, vegan, kosher. I can sort food into grown, reared or caught.	I know the impact of diet on my health and wellbeing. I know that food is imported and exported around the world. I know which food was rationed during WW2 and why. I can understand the nutritional content of food by reading the labels on food.
Cooking	I can begin to spread and cut a sandwich in half. I can observe how simple recipes are made. e.g. soup. I can make gingerbread dough with adult support. (F2) I can roll dough and cut out a shape using a cutter.	I can peel, chop, slice and deseed fruits and vegetables with support. I can begin to spread butter independently. I can assemble a sandwich.	I can peel, chop, slice and deseed and fruits and vegetables with growing independence. I can create a crunchy rainbow salad.	I can follow a simple recipe which includes measures. I can use simple kitchen equipment including a grater and peeler. I can measure ingredients using standards units. I can use the oven with supervision	I can use the hob or microwave with supervision. I can measure ingredients independently using scales.	I can use a wider range of tools independently. I can follow more complex recipes. I can use more complicated cooking methods: boil, mash, Sautee, fold, seal, fry	I can use sharp knives independently. I can create my own recipes. I can follow recipes that have multiple steps. I can use more complicated cooking methods: dice, simmer,
Textiles	I know that there are different materials. I can use all my senses to explore materials, including fabrics.	I can sew using a plastic needle and wool. I can sew materials together with precut holes to create a puppet.	I can sew using a metal needle and thread. I can follow an outline to create an image with stitching.	I can sew using running stitch. I can follow a pattern and cut out my fabric.	I can sew together and stuff a decoration. I can embellish my decoration.	I can embellish a t-shirt using embroidery, buttons, tassels, fabrics and fraying.	I can thread my own needle. I can use applique as a decorating technique.

	I can thread by hand with different materials e.g beads onto string,						
Mechanisms	I can explore pushing and pulling toys and objects. I can manipulate simple tools like scissors, glue sticks and construction equipment. I can notice and discuss how things move e.g. wheels, doors.	I can use a basic mechanism such as a lever and pivot. I can create a moving picture using a slider and pivot.	I can create a mechanism that incorporates a wheel and axle. I can make a product that incorporates a lifting device. E.g. a drawbridge I can incorporate a pop-up mechanism into a puppet.	I can build a catapult that incorporates and lever and uses tension.	I can build a sarcophagus with a pneumatic hinge.	I can explore a range of mechanisms. I can select the appropriate mechanism for my design. I can create a moving model that incorporates a mechanism such as gears, pulleys, levers, cams.	
Electronics					I can create a product that incorporates a simple circuit with a switch and a bulb.		I can create a product that incorporates a more complex circuit including a motor.
Evaluate	I can say what I like and dislike through sensory experiences. I can say if I like my own design or product.	I can express my preferences for different products based on colour, size or shape. I can begin to discuss what went well with my design and what could be improved.	I can evaluate my design against a simple criterion. I can identify what went well with my design and what could be improved.	I can evaluate more critically my own and other's products and designs against a specific criterion. I can begin to suggest improvements for existing products.	I can identify good and bad features of existing products. I can suggest improvements for existing products. I can evaluate what went well and improvements for my own and other's products and designs.	I can evaluate my own and other's products and designs against a detailed criterion, considering useability, effectiveness and aesthetic qualities. I can suggest specific ways to improve my own and other's products and designs.	I can evaluate and test my own and other's products and designs against a detailed criterion, considering useability, effectiveness and aesthetic qualities. I can reflect on the processes used and outcomes achieved. I can suggest detailed improvements, considering the views of potential users.
Health and safety	I know the meaning of what is safe and unsafe. E.g. sharp vs not sharp; hot vs cold.	I know how to move around the classroom safely during practical lessons.	I know how to give people space when they are working practically.	I know why safety rules are in place for practical working.	I know why and how risk assessments are carried out before	I know and consider the consequences of not following safety procedures.	I know and can manage potential hazards like burns and cuts.

	I know that I need to be careful around appliances and utensils when cooking. I can wash my hands before eating and cooking. I can use appropriate tools safely e.g. rolling pin, scissors, cutters.	I can clean my work surface before and after cooking. I can use and store plastic needles safely.	I can begin to use sharp tools under supervision. I can use and store metal needles safely.	I know how to stay safe in the kitchen and around heat. I can begin to use hand tools and understand their correct and safe use. I can use safety gear, like gloves, if necessary.	completing practical tasks. I know basic food hygiene principles e.g. cross-contamination. I can use more varied tools and understand their correct and safe use.	I can manage my own safety by keeping my workstation organised.	I can manage my own and other's safety by keeping my workstation organised.
Sustainability	I know the importance of taking care of the environment thorough stories and practical activities. I can care for my immediate environment e.g. tidying up, putting rubbish in the bin, litter picking.	I know the importance of recycling. I can sort materials into paper and plastic.	I know the damage plastic is doing to the oceans. I can reuse materials in my projects.	I know the impact of different materials on the environment. I can design products that have natural resources and support the environment.	I know that some natural resources are limited and need to be conversed. I can identify if an item is fairtrade.	I know the effect of pollution on the ecosystem. I can create products that include recycled materials.	I know the environmental impact of fossil fuels. I know the importance of moving towards green energy. I can suggest how technology can solve environmental problems. I know the impact of importing and exporting food on the environment. I can begin to consider food miles when shopping for my own produce.

Progression of Vocabulary

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Build	Material	Technology	Lever	Analyse	Longship	Cross-section
Make	Research	Mechanism	Force	Annotated	Hull	Exploded diagram
Create	Template	Purpose	Tension	Embellish	Keel	Edwardian
Design	Mock-up	Test	Fulcrum	Sew	Bow and Stern	First class
Wheels	Scissors	Criteria	Catapult	Stuff	Mast	Silhouette
Cut	Cut	Template	Pivot	Pneumatic	Oar	Drapery
Stick	Tape	Mock-up	Habitat	Piston	Scale	Palette
Glue	Join	stability	Ecosystem	Air compressor	Vegetarian	Bodice
Scissors	Healthy	Fruit	Structure	Pressure	Halal	Skirt
Taste	Unhealthy	Vegetable	Natural	Hose	Haram	Seam
Smell	Sugar	Exotic	Layering	Valve	Vegan	Hem
Mix	Slice	Ground	Decompose	Hinge	Kosher	Lace
Stir	Deseed	Balanced	Sustainability	Circuit	Grown	Fur
Chop	Spread	Diet	Nook and cranny	Switch	Reared	Embroidery
Cook	Assemble	Carbohydrate	Dough	Bulb	Caught	Beadwork
Hot	Needle	Fats	Knead	Battery	Boil	Ration
Cold	Wool	Protein	Yeast	Volt	Mash	Import
Healthy	Lever	Recipe	Roll	Current	Sautee	Export
Soft	Arm	Measure	Sauce	Insulator	Fold	Nutrition
Hard	Effort	Thread	Topping	Conductor	Seal	Simmer
Texture	Life	Stitch	Grate	Wire	Fry	Dice
Colours	Move	Wheel	Bake	Risk assessment	Prototype	Ladel
Shapes	Pivot	Axel	Oven	Conserved	Embroidery	Broth
Thread	Slider	Drawstring	Seasoning	Fair trade	Fashion	Motor
Sharp	Colour	Reuse	Mozzarella	Cocoa bean	Era	Fossil fuels
	Shapes	Reduce	Mediterranean	Roasting	Style	Green energy
	Recycle		Aesthetics	Tempering	Motif	Applique
	Card		Sketch	Moulding	Symbol	Scale
	Split pin		Load distribution	Melt	Influence	Frame
			Seasonal	Solidify	Decade	Corrugated
			Produce		Culture	Chassis
			Running stitch		Tassel	Gear
					Traying	Aerodynamic
					Levers	
					Pulleys	
					Cams	
					Useability	
					Effectiveness	

Construction	Electronics	Food/Nutrition	Textiles	Mechanisms

	Autumn 1	Autumn 2		Spring 1	Spring 2	Summer 1	Summer 2	
EYFS		**What's the twist in the tale?** **Outcome:** A sandwich	**What do I celebrate and why?** **Outcome:** Gingerbread man	**How do people help us in the community?** **Outcome:** A community vehicle	**How do things grow and change?** **Outcome:** Evaluate fruit	**Is it reality or fantasy?** **Outcome:** Brick castle	**Are all journeys the same?** **Outcome:** Explore how things move	
Year 1		**What's so special about this time of year?** **Outcome:** Christmas puppet				**Are all animals the same?** **Outcome:** Healthy packed lunch	**How do we know dinosaurs existed?**	**Outcome:** Junk model dinosaur that moves
Year 2	**Where in the world is Africa?** **Outcome:** African necklace	**Who were the Victorians?** **Outcome:** Victorian pop-up puppet		**Why do we have castles?** **Outcome:** A castle with a draw string bridge	**Why do we have castles?** **Outcome:** Easter card	**Why is the sun so important?** **Outcome:** A crunchy rainbow salad.		
Year 3	**What makes Britain beautiful?** **Outcome:** Bug hotel	**What happened from the Stone Age to the Iron Age?** **Outcome:** Stone Age needle pouch				**Why did the Romans invade Britain?** **Outcome:** Roman catapult	**Why did the Romans invade Britain?** **Outcome:** Mediterranean pizza	
Year 4	**What was the Industrial Revolution?** **Outcome:** Factory electronic night light			**Where does chocolate come from?** **Outcome:** A new Cadbury chocolate bar	**Where does chocolate come from?** **Outcome**: Stuffed and embellished butterfly	**Who were Ancient Egyptians?** **Outcome**: Pneumatic sarcophagus		
Year 5	**What makes Britain great?** **Outcome:** Era t-shirt	**Why did the Vikings invade Britian?** **Outcome:** Viking long ship				**What is the Golden Age of Islam?** **Outcome:** Samosa	**How can we help the planet?** **Outcome:** Models that move	
Year 6		**How did WW2 impact our world?** **Outcome: Savoury Scones to have at a Victory party** Made with carrot, courgettes, sweetcorn		**How did WW2 impact our world?** **Outcome:** Anderson shelter		**What will the future look like?** **Outcome:** Motorised race cars	**What will the future look like?** **Outcome:** Fossil plush pillow	

Enrichment

- Chocolate workshop (Year 4)
- Samosas at Castle Mead (Year 5)
- Picnic (Year 1)

Extra-curricular

- Cooking club
- Lego Club

SEND

All children across Fosse Mead Primary Academy receive quality first teaching. Those children who have been identified as having additional needs may require additional strategies and/or resources to enable them to succeed in their learning. These adaptations and considered at a pupil level and will vary dependent on need.

Adaptive curriculum

For children who do not have an age-appropriate level of literacy, Fosse Mead Primary Academy provide an adaptive curriculum. The aim of this is to ensure they have full access to the curriculum and the learning intended within art as a subject. To achieve this, pupil work or outcomes may be recorded differently to their peers.

These adaptations include but are not limited to:

- Adults scribing pupil voice
- 1:1 or small group support for D&T projects
- Providing hands on resources where possible
- To use stories and props as a springboard for discussion
- Scaffolded sheets

Challenge

Adding challenge for pupils in D&T is important as it provides opportunities that push boundaries, deepen understanding, and encourage leadership and critical thinking. Carefully planned questioning can encourage this and other strategies may include, but are not limited to:

- **Problem-Solving:** Choosing the most suitable equipment and resources to complete a project.
- **Sustainability:** Create products that minimize environmental impact.
- **Balancing functionality with aesthetics:** create a product that looks good but also does the job that it is meant to.
- **Collaboration:** Working together to create larger projects

Children are given the opportunity to show case their work, where they gain experience in presenting their work to the school community.

Equality, diversity and inclusion

At Fosse Mead Primary Academy, we are dedicated to creating an educational environment where equality, diversity, and inclusion (EDI) are fundamental principles guiding our interactions, teaching, and community engagement. We believe that a diverse and inclusive school community enriches the educational experience and prepares our students for a global society. We integrate EDI principles into our curriculum, ensuring that learning materials reflect the diversity of our community and the wider world. We aim to provide a balanced education that celebrates different cultures, perspectives, and histories.

Health and safety considerations

Fosse Mead Primary Academy takes the health and safety of all pupils and staff seriously. Teachers will carry out a risk assessment before each activity considering the tools, materials and equipment being used. Before undertaking practical tasks, pupils should be taught to use tools correctly in order to ensure safety. The school D&T Risk Assessment is saved in the D&T Folder.

Assessment and recording

Assessment of D&T will primarily take place through teachers' observations of students' designing and making their projects. The Research, Design, Make and Evaluate process will be evidenced in the Art and D&T books. Pupils working towards and above the expected standard are recorded on the assessment sheet. Evidence of the practical activities can be recorded on iPad and saved in the D&T evidence folder on the network or tweeted out using the tag #fmDandT.

D & T data is collected and analysed at the end of each year and conclusions used to target specific groups or themes that needs additional coverage and support.

Monitoring

Monitoring in D&T will take place through planned, twice yearly book scrutiny and learning walks. Pupil voice surveys are conducted twice a year. Informal discussions will take place with teachers throughout the year to ensure projects provide the correct level of challenge for the pupils. The Curriculum Leader provides strategic leadership and direction for D&T within the school. The D&T Leader supports colleagues in their teaching practices and ensures they are informed about current developments and best practices in the subject