Subject Policy
Design and Technology

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INTENT: At Debden Church of England Primary Academy, all of our curriculum disciplines are used to underpin our school vision, which is to ensure that the children in our care:

- Progress exceptionally well academically, across a broad and knowledge-rich curriculum;
- Develop into confident compassionate, well-rounded individuals, in a safe, caring, Christian environment;
- Become equipped with the learning skills needed to deal with future challenges;
- Create happy, positive memories of their childhood.

Our Design and Technology curriculum has been carefully constructed through close consideration of both the expectations of the National Curriculum and the vision and contextual requirements of our school and its children. Through our DT curriculum, we aim to:

- Inspire children, through a broad range of practical experiences, to create innovative designs which solve real and relevant problems, within a variety of different contexts;
- Encourage children to utilise an iterative 'research, design, make, evaluate' process towards projects, systematically developing their key skills in each stage throughout each project.
- Equip children with a comprehensive knowledge of important technological vocabulary and processes, making incisive links with other subject disciplines, where appropriate;
- Influence children to become the next generation of innovators, through studying key individuals and technological achievements that have helped to shape the world, showing the impact of design and technology on the wider environment.

There are five distinct disciplines that recur throughout the DT curriculum: Structures, Mechanisms, Textiles, Food and Nutrition and Electrical Systems. The skills of Researching, Designing, Making and Evaluating run through each of these technical disciplines.

DT Disciplines	**DT Skills (running through all units)**
1. Structures 2. Mechanisms 3. Textiles 4. Food and Nutrition 5. Electrical Systems	1. Researching 2. Designing 3. Making 4. Evaluating

DT Skills: The skills that we aim to equip all children with throughout each stage of their development are detailed within our progression of skills map. All skills fall under researching, designing, making or evaluating.

DT Vocabulary: The vocabulary that children should be able to understand and use at each stage of their DT learning is mapped in DT Progression of Vocabulary outline.

DT Knowledge: We have created knowledge organisers for each of our units of learning. These organisers map out the information that children should know and understand by the end of each teaching unit. They contain key details about the specific discipline and unit being studied. They are sent home to parents at the start of each unit, are used by teachers throughout the planning and teaching process, and are used in part to form our end of unit assessments.

Curriculum Mapping: Our curriculum map outlines the units of learning that are covered throughout a child's time at Debden. Wherever possible, matching disciplines are taught across the school at the same time, making it easier to ensure that there is adequate progression of knowledge and skills outcomes between phases. We have also worked thoughtfully and collaboratively to ensure that there is an appropriate range and progression of knowledge and skills throughout each unit.

IMPLEMENTATION:

'Blocking': Our DT curriculum is taught in 'blocks' – within each term, children learn DT intensively in the afternoons over a period of 2-3 weeks. This provides the same time allocation to the subject as timetabling DT continuously for an hour per week, but gifts the advantage of enabling teacher and children to truly immerse themselves within a subject. This enables a greater depth of study and embeds key skills. Furthermore, DT units have been mapped with close consideration of cross-curricular links (e.g. the blocked DT unit of 'electrical systems' is coupled with the teaching of Electricity in science), enabling increased opportunities to build schemata.

Lesson Sequencing: A typical unit of Design and Technology should include at least one lesson in the research phase, 2-3 lessons of design, 2-3 lessons of making, and at least one lesson on evaluating (teachers are flexible with these guidelines, in line with their own professional judgement).Throughout the research/design, make, and evaluate process, we encourage children to take an iterative and reflective approach, continuously considering how products can be improved, applying changes, and reflecting on their effectiveness.

Resources: As a base for teachers planning, the 'Design and Technology Association' schemes of work are used to underpin unit structure and curriculum structure, however staff have the flexibility to adjust these schemes in order to best meet the interests and needs of their class. We have found that these schemes, written by experts in the Design and Technology teaching field, enable our children to make excellent progress against the knowledge and skills expectations that we set at Debden.

Pedagogical Approach: Across all subjects at Debden Primary Academy, we use teaching strategies drawn from Rosenshine's work on *The Principles of Effective Instruction* and Lemov's recommendations in *Teach Like a Champion*, and this includes within the teaching of DT. Some of the most important pedagogical strategies include:

-New Material in Short Steps: The individual components of large-scale works are given in small chunks of new material, ensuring that children's working memory is not overloaded.

-Regular Review: We spend the initial portion of lessons reviewing what has been learnt in prior lessons, terms and years. This helps to commit information to long-term memory.

-No Hands Up/ Cold Calling: We want to ensure that every child is an active participant in their learning, who fully engages and is able to contribute ideas. Cold calling also helps us to gauge what every child in the class understands, in order to tailor our teaching to the children's needs. To allow children to orally rehearse responses, we also provide regular opportunities for talk partners.

-Guided Practice and Independent Practice: Throughout units we aim to progress from practice that is more heavily guided and scaffolded, to more independent practice when a high success rate has been achieved.

-Provide Models: Children are given models through the expert technology/ mechanisms that they explore as a part of the research phase. We work to develop children's critical curiosity and appreciation of how models are aesthetically-pleasing, functional and fit for purpose. We facilitate this through a range of questions, including:

-Who is this product for? *-What is its function?* *-In what ways is this product innovative?* *-Describe the mechanism/ structure etc. in this model.* *-What component parts is this made of?*	*-How does this appeal to its target audience?* *-What efforts have been made to make this model aesthetically-pleasing?* *-What are the strengths and weaknesses of this product?*

Metacognition: Owing to the nature of the subject, children are encouraged to become leaders in all stages of their learning, including the planning, monitoring and evaluating phases. We recognise that a child's ability to be creative, resilient and reflective are vital in enabling them to become the next generation of innovators.

DT Exercise Books: Children are encouraged to record their observations and research within their DT exercise books, and use them to develop, review and revisit ideas. In the vast majority of DT units, the three aspects of research, design and evaluate will be evident within DT exercise books – making is evident through the quality of the product itself.

IMPACT:

Whole-Class Feedback – In addition to the verbal feedback that is provided within each DT lesson, teachers are expected to complete at least one whole-class cycle within each DT block. This includes highlighting strengths, identifying misconceptions and next steps, and commenting upon the children's presentation/ clarity of thought. A 'blue sticker task' (the call to action) should be utilised to address misconceptions and learning that has not been secured.

End of Unit Assessment – At the end of each unit, teachers assess children's attainment using a score of 1-15, in line with our Foundation Assessment system. In DT, the make-up of the 15 marks are outlined below:

5 marks for…	5 marks for…	5 marks for…
Research and Design *Exercise Books/ additional evidence assessed against the criteria in the 'research' and 'design' areas of the skills map.*	Make *Final product assessed against the criteria in the 'make' area of the skills map.*	Evaluating *All children complete a Debden DT Project Evaluation Sheet. This is marked against the 'evaluate' area of the skills map.*

Score (0-5 Scale)	Descriptor
0	Does not demonstrate any of the skills in the appropriate section/s of the skills map.
1	Demonstrates a small minority of the skills in the appropriate section/s of the skills map.
2	Demonstrates an increasing number of the skills in the appropriate section/s of the skills map.
3	Demonstrates around half of the skills in the appropriate section/s of the skills map.
4	Demonstrates most of the skills in the appropriate section/s of the skills map.
5	Demonstrates all of the skills in the appropriate section/s of the skills map.

Children's scores are tracked via our 'Insight' monitoring system, to enable us to understand the progress that they are making throughout the school, and to tailor our approaches accordingly.

'Pop-up Galleries' – At the end of each unit of DT, work will be displayed via a 'pop-up gallery', which will showcase the children's DT compositions from across the school. Parents will be invited to view the DT on display alongside their children. This will help to celebrate and inspire the children, as well as building their confidence in their DT endeavours.

Monitoring – 2-3 times per year, subject monitoring of art takes place, which is normally carried out by the subject leader (at times, this may be a senior leader). At least once per year, this is carried out alongside the link Governor for the subject. The subject monitoring process includes:

-Lesson visits;
-Trawl of children's sketchbooks;
-Student chats;
-Checking of student understanding of information on knowledge organisers;
-Viewing classroom displays;
-Conversations with teachers;
-Analysis of assessment data;
-Subject leader 'deep-dive' questions and review of key subject documents (when with link Governor).

The information gathered from teachers is fed back in a timely fashion via our subject leader monitoring reports.