How we teach D&T at Tudor School

TUDOR PRIMARY SCHOOL

Summer 2022

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"D&T is often one of a child's favourite subjects. Children like making decisions for themselves and doing practical work. They love creating products they can see, touch – and even taste – for themselves. They feel proud to have done so." (D&T Association)

Mission Statement

Our vision is that through the teaching of Design and Technology at Tudor School, our children will become passionate, resilient and confident designers. They will not only develop a range of practical skills, but will become problem-solvers, creative-thinkers and risk-takers. By working together, they will build on existing knowledge and use their imagination to create innovative and original solutions and products.

'It teaches us skills that we can use in real life.' (Year 6 child)

INTENT

National Curriculum Aims

The National Curriculum for Design and Technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high- quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Additional Tudor Aims

- to develop an interest and enthusiasm for designing and making for children of all abilities.
- to develop children's capability and confidence in their own ideas
- to develop an understanding of the ways in which people from the past and present have used design and technology to meet their needs
- to develop skills and techniques in using and selecting a range of tools and materials safely

The main elements that underpin the teaching of Design and Technology are:

1. Designing
2. Making
3. Evaluating
4. Technical knowledge
5. Cooking and nutrition

At Tudor School, we pride ourselves on our thematic teaching approach, which stimulates the creative thinking of our children and fully engages them in their learning. This approach creates a strong foundation for high-quality Design and Technology teaching across all phases. By working alongside the Art lead, teachers are aware of the clear distinction between the subjects and ensure that they are teaching specifically D&T skills in D&T units.

This document will clearly explain how we ensure that the national curriculum aims are being taught effectively, how we monitor and evidence clear progression across the school and how staff are enabled to deliver high quality teaching experiences for the children at Tudor.

IMPLENMENTATION

How we cover the curriculum objectives

At Tudor, we have created a curriculum map that identifies when we will cover specific objectives in our two-year rolling thematic curriculum cycle. This enables us to link the objectives with topics that will inspire the children and engage them fully in their learning. We are also able to see which unit will be covered each term to ensure all aspects of D&T are taught. Our curriculum map covers all key stages, including foundation stage, and helps us to show how the skills develop in D&T from EYFS to Year 6. In KS1, the main aspects covered are mechanisms, structures, food and textiles. In KS2, the aspects are mechanical systems, electrical systems, structures, food and textiles. Each year group will cover a food unit every year.

From September 2022, we will be restructuring how we cover the D&T curriculum to ensure that children develop a depth of skills in each specific aspect. Each year group will be given specific aspects that compliments their themes and cooking and nutrition will continue to be taught every year.

Year Group	Home Under the Hammer	From Field to Fork	Seaside Rescue		Toy Stories	Wings, Waves & Wheels	Turrets and Tiaras
1	**Structures**	**Food**	**Mechanisms** Levers & Slides		**Structures**	**Mechanisms** Levers & Slides	**Food**
2	**Mechanisms** Wheels & Axles	**Food**	**Textiles**		**Textiles**	**Mechanisms** Wheels & Axles	**Food**
	Buried Treasures	**Crime-Busters**	**What a Wonderful World**		**Is It Right To Fight?**	**Up Pompeii**	**Tomb Raiders**
3	**Food**	**Mechanisms** Pulleys, Cams & Levers	**Structures**		**Mechanisms** Pulleys, Cams & Levers	**Structures**	**Food**
4	**Food**	**Electrical Systems** Alarms	**Textiles**		**Textiles**	**Electrical Systems** Alarms	**Food**
	Raiders and Traders	**Extreme Environments**	**Step Back in Time**		**A Whole New World**	**Spaceship Earth**	**It's All Greek to Me**
5	**Food**	**Structures** Computer- Aided Design (CAD)	**Mechanisms** Springs, Gears, Cams, Pulleys, Levers		**Food**	**Mechanisms** Springs, Gears, Cams, Pulleys, Levers	**Structures** Computer- Aided Design (CAD)
6	**Textiles**	**Food**	**Electrical Systems** Game		**Textiles**	**Food**	**Electrical Systems** Game

Each year group produces a topic map, at the beginning of each term, which clearly shows which aspect of D&T will be taught that term. It also breaks down the unit and shows the objective and task that will be taught in each session so that there is a clear flow to the sequence of lessons. By using detailed termly topic overviews, we are able to make sure we allocate the appropriate amount of time to each objective and plan when we will teach these. D&T units are typically taught for one – two hours a week over half a term. Our topic maps are updated throughout the term, so if any objectives have not been covered confidently, these are quickly identified so that they can be covered before the end of the year, or at the beginning of the following academic year. In addition to using the National Curriculum, we use statements on Target Tracker to ensure a full coverage of a range of skills.

Overview of Statements

Band 1 (10 statements)	Band 2 (10 statements)	Band 3 (10 statements)	Band 4 (10 statements)
Processes Use pictures and words to describe what he/she wants to do	Processes Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Processes Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes	Processes Create designs using exploded diagrams
Processes Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing	Processes Choose appropriate tools, equipment, techniques and materials from a wide range	Processes Safely measure, mark out, cut, assemble and join with some accuracy	Processes Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks
Processes Use a range of simple tools to cut, join and combine materials and components safely	Processes Safely measure, mark out, cut and shape materials and components using a range of tools	Processes Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them	Processes Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them
Processes Ask simple questions about existing products and those that he/she has made	Processes Evaluate and assess existing products and those that he/she has made using a design criteria	Processes Investigate and analyse existing products and those he/she has made, considering a wide range of factors	Processes Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user
Processes Build structures, exploring how they can be made stronger, stiffer and more stable	Processes Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable	Processes Strengthen frames using diagonal struts	Processes Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas
Processes Use wheels and axles in a product	Processes Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products	Processes Understand how mechanical systems such as levers and linkages or pneumatic systems create movement	Processes Understand and use electrical systems in products

How is D&T taught in EYFS?

In line with the new EYFS framework, D&T is no longer taught as a stand-alone subject, it is embedded within many areas of the EYFS curriculum including literacy, play and learn and expressive art and design. It is also a great tool to support communication and language for the children alongside developing their creativity and problem solving skills. During play and learn sessions the children are provided with a variety of materials both inside and outside to explore, whether that is independently, or used as part of a group.

At Tudor, we make reference to the 'Development matters' document. Below are some objectives from the document, in relation to D&T, which the EYFS team ensure is covered throughout their time in Nursery and Reception.

Development Matters Birth to three	**Development matters three and four year olds:**	**Development matters children in Reception:**	**Early Learning Goal:**
Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials. Make simple models which express their ideas Explore materials with different properties.	Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. Make healthy choices about food, drink, activity and tooth brushing. Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. Use one-handed tools and equipment, for example,	Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.

	making snips in paper with scissors. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures		

Planning 'to inspire'

Our thematic approach enables us to link specific D&T units to certain topics within our 2-year cycle to ensure that the children are fully immersed in their learning. For example, in KS1, the D&T food statements linked to knowing about the origins and sources of different foods, are taught during our termly topic "From Field to Fork". This means that this topic is used to link all of the curriculum together, making the learning more relatable and therefore helping the children to develop a deeper understanding.

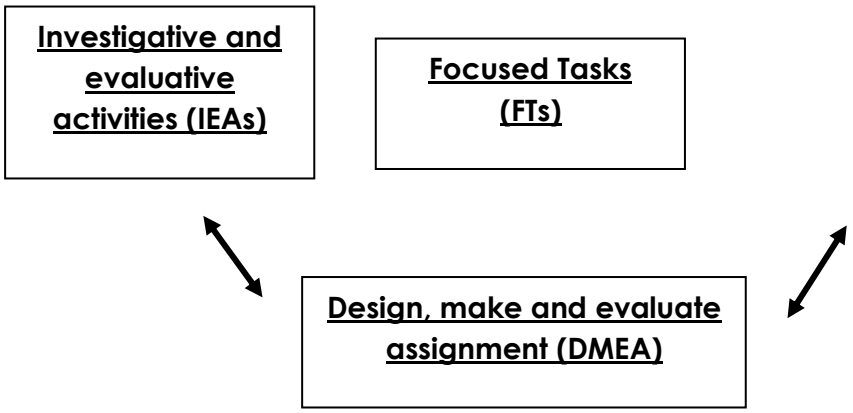
We aim to link the D&T unit of work directly to the topic, allowing the children to solve problems that are meaningful and purposeful, rather than a stand-alone unit of work. This engages the children further, as they have a broader knowledge of the topic and are able to utilise skills from other subjects more easily. This way of teaching also helps the children to develop skills that they can use in a real life context.

We aim to have a cross-curricular D&T approach and draw on and develop skills, knowledge and understand in subjects such as science, computing, English, maths and art, to provide additional learning opportunities. However, each D&T lesson is focused on developing an aspect of D&T, potentially supported by other subjects.

Each D&T unit includes these three types of activity:

- **Investigative and Evaluative Activities (IEAs)** where children learn from a range of existing products and find out about D&T in the wider world.
- **Focused Tasks (FTs)** where they are taught specific technical knowledge, designing skills and making skills.

- **Design, Make and Evaluate Assignment (DMEA)** where children create functional products with users and purposes in mind.



How we support children with SEND

At Tudor we endeavour to ensure every child, no matter what their individual needs or barriers to learning are, has equal access to learning and the same opportunities to achieve. The curriculum is designed to be ambitious and meet the needs of all pupils. In D&T we ensure that children with additional needs are supported, and lessons are adapted to overcome possible barriers to learning in a variety of ways, including:

- Using multi-sensory approaches to teaching and learning
- Use of visual aids e.g., vocabulary mats, checklists
- Additional adult support
- Resources to support individual physical needs
- Use of learning partners

- Having a variety of resources and materials accessible to all
- Tasks and activities being simplified/adjusted as required
- Scaffolding of tasks e.g., use of writing frames

IMPACT

Monitoring of Standards

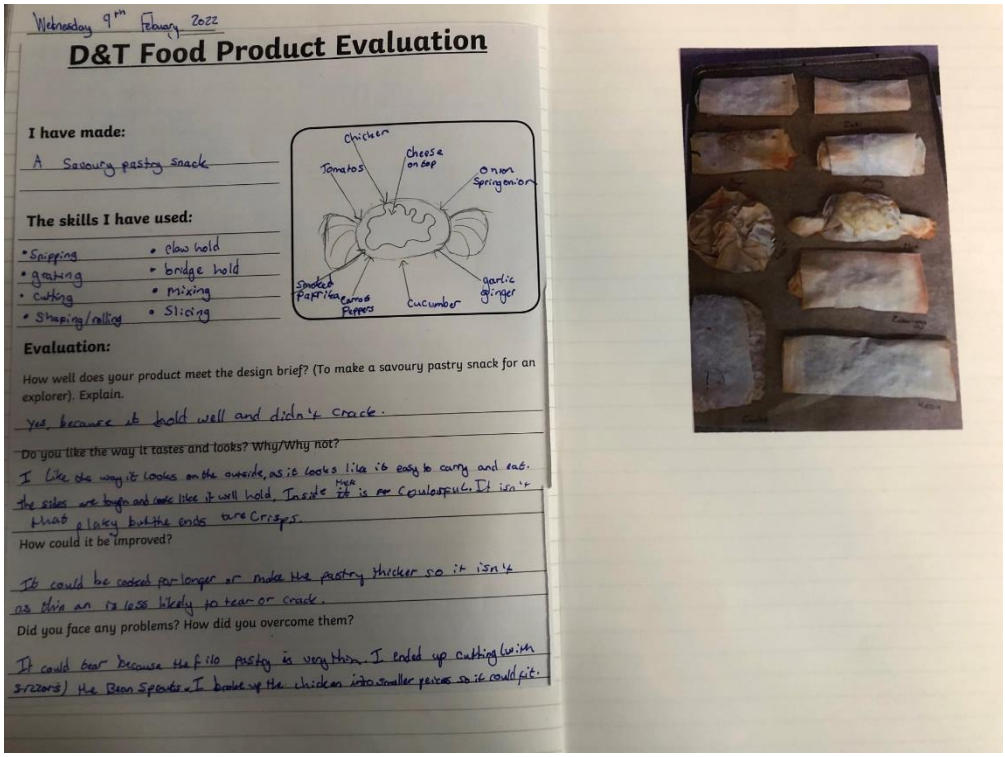
At Tudor, we monitor the standard of D&T in a range of ways.

Using a combination of the National Curriculum, Target Tracker statements, our curriculum overview and our topic maps, a D&T unit is created, with clear lesson objectives planned for each lesson. This may be a skills-based objective, for example "use techniques that require more accuracy to cut, shape, join, finish his/her work". Each lesson is planned around a clear objective and activities are carefully thought-out so that teachers can clearly see whether the child has met the objective. As the objectives can be quite broad, it may take several lessons for children to have covered all parts of the objective.

We have recently started to use "Feedback Sheets" to evidence how successful each lesson was, how much progress the children have made and what may need to be readdressed in the subsequent lessons. The teacher will use these formative feedback sheets, as well as D&T sketchbooks and practical pieces of work, to assess how well the children met the objective at the end of each lesson. At the end of the unit, they will use Target Tracker to complete a summative assessment for each individual child.

"Pupil Voice" is used by the D&T lead to assess how children feel about their D&T learning and whether they are able to identify the skills they are using. Children should be encouraged to use subject-specific vocabulary when they are explaining and discussing their learning. Children should be able to explain their design choices and justify their thinking.

D&T sketch books, feedback sheets and photos on the staff drive are reviewed regularly by the subject leader. The main focus is on seeing clear progress between key stage groups and skill progression rather than the just focusing on the end result. Photos need to be taken of children developing their skills during the sequence of lessons, and not just of the final product they produce at the end of the unit.



Wednesday 9th February 2022

D&T Food Product Evaluation

I have made:

A Savoury pastry snack

The skills I have used:

- Snipping
- grating
- cutting
- Shaping/rolling
- claw hold
- bridge hold
- mixing
- Slicing

Evaluation:

How well does your product meet the design brief? (To make a savoury pastry snack for an explorer). Explain.

Yes, because it held well and didn't crack.

Do you like the way it tastes and looks? Why/Why not?

I like the way it looks on the outside, as it looks like it is easy to carry and eat. the sides are tough and look like it will hold. Inside it is a Coulourful. It isn't that flaky but the ends are Crispy.

How could it be improved?

It could be cooked for longer or make the pastry thicker so it isn't as thin as it is less likely to tear or crack.

Did you face any problems? How did you overcome them?

It could tear because the filo pastry is very thin. I ended up cutting (with 3+2 arms) the Bean Sprouts. I broke up the chicken into smaller pieces so it could fit.

Teachers were asked to complete a questionnaire at the start of 2020 to identify areas where they felt they needed more support to develop their own D&T skills and subject knowledge. These areas will be either addressed on a one-to-one basis or during a future staff meeting. A particular area of D&T will be focused on each year.

There will be a staff meeting led by the D&T lead each year to develop teacher's subject knowledge and confidence, discuss teachers' ideas, address any issues from book scrutiny's and pupil voice and update the staff team on any changes or developments in the teaching of D&T.

Pupil Attainment (including use of target tracker)

At the end of each unit (usually end of a half term) teachers will assess each child's progress using Target Tracker. Feedback sheets will be used to help teachers assess progress and will help to provide evidence of skill progression. Target tracker allows us to assess children at a 'working towards' (red) 'achieved' (blue) and 'mastered' (gold) level. This enables teachers to be able to clearly see which

children need further support in future units and which children need extending further.

Using Target Tracker, the D&T subject lead can compare classes and year groups across the school to monitor Tudor's overall progress and focus on specific groups, for example boys, girls, SEN and PPG.

Health and Safety

The safety and hygiene of the children within each class is the responsibility of the class teacher. Risk assessments for teaching all aspects of D&T at Tudor School can be found on the staff drive, as well as resources to support teachers and children using a range of equipment, for example cutting using knives.

Food Safety

The D&T Subject Lead has a current "Food Safety in Catering Level 2" certificate and provides staff with food safety and food hygiene teaching resources. D&T Lead and TA regularly check that food equipment has been cleaned and stored correctly.
At the start of a food unit, an "Ingredients Check" letter must go home to all parents to check if there are any foods that need to be carefully handled due to any food allergies, intolerances or religious views.

There are Food Safety risk assessments available on the staff drive and all staff are encouraged to read through these before carrying out a D&T food unit.

Resources

At Tudor, there are three locked D&T cupboards located in the KS2 building. One contains resources specifically for textiles, one has resources for cooking/food technology and one has resources for mechanisms and structures.

A thorough resources audit was carried out in 2018 (see previous action plan) to identify which resources were missing. A resources document has been created and sent out to staff – this is regularly updated and sent out at the start of each term. Staff are asked at the end of each term (when we have a staff meeting allocated for next term's planning) if there are any resources that they will require for the next D&T unit to ensure we have the necessary resources in school when needed.

An investment was made into cooking resources in 2019, to ensure that there was enough equipment for each class to take part in practical food lessons at one time as each class now carries out a food unit each year.

Each year, some of the D&T budget will be allocated to updating and adding to our current D&T resources.

Subject Leader Action Plan- 2021-2022 - Subject Leader: Danni Cohen

Current Situation:

- It was difficult to teach D&T during lockdown, so certain skills will need to be retaught to fill in any gaps in the children's learning.
- Teachers use The National Curriculum, the Tudor Curriculum Maps and Target Tracker to ensure there is good coverage of skills over the two-year cycle, to inform planning and guide lesson objectives.
- Children to have D&T sketch book to include project sheets, sketches, photos and evaluations.
- Teachers are linking their D&T topics to their termly theme.
- Food units are being taught every year.
- Teachers are required to check we have the necessary resources for their project at the beginning of each term, so that I can place orders if needed.
- D&T is taught in a half-term block, with Art being taught during the other half-term.
- There are three D&T resources cupboards in the KS2 building. A stock check has been carried out and new resources have been bought to improve the quality of teaching for textiles and mechanisms.
- D&T Lead has a food safety certificate.

Action Plan:

Area to be developed	Start date	Completion deadline	Activities to deliver target	Budget cost	Success criteria
Teachers to have a clear understanding of what high-quality D&T teaching is and looks like.	Sept 21	Sept/Oct 21 Nov 21 Nov 21 July 21 Dec 21	• Lead a staff meeting to highlight key skills that need to be taught in each year group **(Jan 25th 2022)** • Teachers are aware of what key vocabulary needs to be made explicit during each project. **(More vocab to be saved on the staff drive).** • Suggest and discuss possible design projects for topics and phases. **(As needed)** • New resources from the D&T Association explaining how to teach high quality D&T lessons to be put on the shared area. **(On staff drive).** • Share new innovation and high quality resources with staff, taken from websites such as 'STEM learning' https://www.stem.org.uk/ **(On the staff drive).** • Provide support for skills where teachers feel less confident. **(look into possible planning scheme – promote Oak Academy video).** • Subject lead to complete additional online training through the D&T Association on	D&T Association yearly membership cost.	• Ensure teachers are clear how Art and D&T are different. **(Covered in staff meeting)** • Teachers are able to teach high-quality D&T lessons across the school. **(Covered in staff meeting)** • Teachers feel more confident teaching D&T. **(Feedback from staff meeting).** • Teachers have clear ideas on how to teach high quality D&T lessons. **(Provide further resources, training and exemplars).** • Teachers are aware what high-quality outcomes look like in D&T. **(Continue to build bank of photos of staff drive).** • To be able to share ideas to support teachers. **(Support teachers as needed and attend phase meetings as needed)** • Children able to use subject-specific vocabulary **(email key vocabulary to teachers).**