

### Intent

Design and Technology at Christ Church is an inspiring, rigorous and practical subject that supports our school vision of inspiring *life in all its fullness* through developing creativity and problem solving skills. Pupils learn how to take risks and to become resourceful, innovative, enterprising and capable citizens. Our design and technology curriculum is designed to provide opportunities for all children to build their knowledge and key skills progressively, working with a range of materials including mechanics, structures, electrical systems, textiles and food technology.

The intent of our high-quality design and technology curriculum is to cultivate creativity and imagination and to give all children the skills and knowledge they need to design and make products that solve real and relevant problems within a variety of contexts and with an identified purpose and audience. Our Design and Technology curriculum, which works sequentially towards the end points as set out in the EYFS and National Curriculum, makes explicit links to learning in several other subject areas including mathematics, science, computing and art and lays the foundations for interest and engagement in areas of engineering, design and food technology. The ongoing evaluation and testing process is vital to understanding how and why a product or design element has been successful or not, with evaluation evidence used to inform learning in an iterative process. Our curriculum aims to highlight the importance of creating sustainable products and to develop in all children a firm knowledge of where materials come from and the environmental impact they have.

### Implementation

- Taught by class teachers, with support from subject leader and SLT.
- Carefully planned Design and Technology (DT) class projects that have a focus on designing and making a product with intent for use. For example, Year 3 in the spring term make an obelisk structure to grow plants and our Autumn term DT projects produce items to be sold at the school fair and therefore have a particular audience and use in mind.
- Each project has time given for the three core concepts within DT: design, make and evaluate. Evaluation in each project is two-fold: at the beginning, including research of existing products and an introduction to any relevant engineers, inventors, designers or chefs, and then again at the end of the process to review and refine their own product or prototypes or the work of their peers. There is an emphasis on the process of designing and creating the product, rather than producing a 'neat' or standardised outcome.
- CPD in DT includes in-school training sessions and distribution of DT 'project on a page' resource booklet. Additionally, the subject leader attends and contributes to the Camden DT network and shares resources and skills gained from the network within staff meetings and/or to support with individual projects.
- Rec/KS1 have ample opportunities during playtimes, golden time and within play (EYFS) to explore different building materials and construction toys. Often children will orally design and evaluate their work as they build at this stage.
- Recording in DT has been refined to highlight class projects within the DT portfolios. These project packs provide evidence for learning at each stage of the project as well as including pupil voice and peer assessments.
- Resources have been built up as we have refined the curriculum and established the different projects. All projects have been well resourced which enables all the children to make a high-quality product. Where possible we are reusing and recycling materials to increase the sustainability in our curriculum.
- Enrichment opportunities in DT include visitors/workshops (e.g. musical instrument making workshop) and links to after school clubs (Lego club and cooking club).
- Our DT curriculum is accessible for all pupils across the school, with adaptations or bespoke curriculums in place to support children with SEN when appropriate. The curriculum and teaching is designed to challenge all pupils with high expectations for each child in the learning of DT.

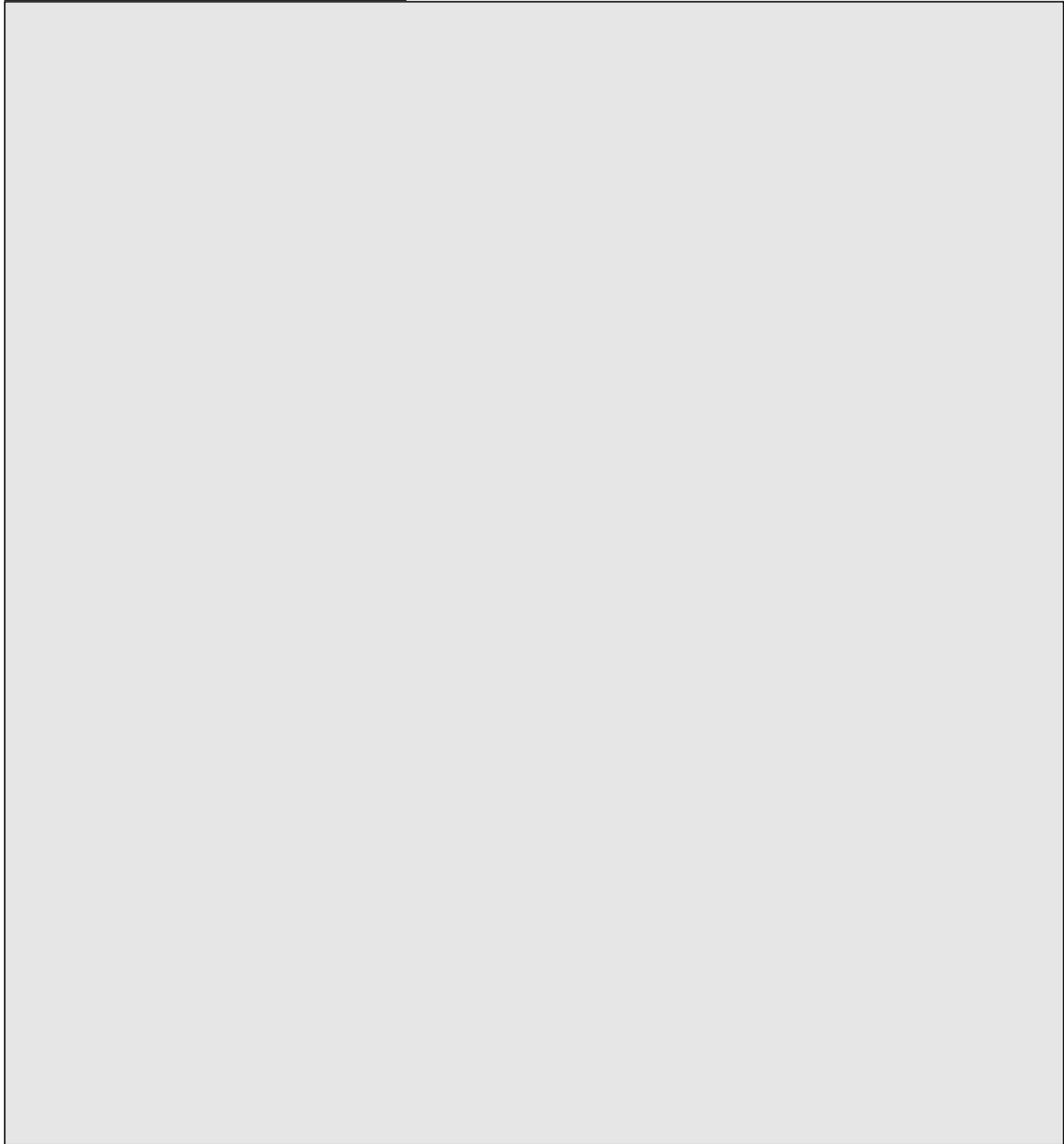


### Impact

- All children have the opportunity to design, make and evaluate a high-quality product/prototype each term. They enjoy DT across the school.

- Children use relevant DT vocabulary and understand simple technical processes, for example, levers and pulleys.
- Children have opportunities to develop risk-taking and critical-thinking.
- Children have the opportunity to learn about existing products with emphasis on sustainability.
- All children are given the opportunity to work collaboratively by sharing knowledge, skills or research in DT and show they can do this successfully with their peers.

### **Whole school standards (three year trend)**



### **Approach to assessment in DT**

#### **Ongoing assessment:**

Teachers provide wide-ranging, engaging and accessible DT lessons for all pupils. Ongoing, on-the-spot assessments within the lesson or a sequence of lessons may identify children who would benefit from additional or different adult support, groupings, time or resources in order to achieve the key learning or outcome in the lesson. These adaptations are made

flexibly and as soon as possible in the lesson/sequence of lessons. Adaptations to support offered for certain topics may also be made in response to children's skills or access to the work such as responsibility in using tools or support in textiles for those with visual impairments. Teachers' ongoing assessments in DT are made through observations, questioning and discussions with children, as well as using information from other adults in the classroom. Ongoing assessments are made of children's learning across all areas of a project (research, design, make, evaluate) and also their ability to apply taught techniques such as blanket stitch in textiles or strengthening a structure. Low stakes questioning and quizzes are used at the beginning and end of a unit of work to support spaced retrieval from prior learning and for teachers to identify any gaps or misconceptions.

### **Summative assessment:**

Key learning for each year group is identified in our progression documents. Many of the identified key statements are focused in the different processes in the projects alongside specific technical knowledge. Transferable skills can also be assessed within other subjects and areas of the curriculum such as designing in art and evaluation of writing or music. The cookery skill strand is a stand-alone strand and looks at where food comes from, alongside learning cooking techniques such as whisking or kneading. Teachers, with support where needed from the DT leader and our work sample documents, make summative end of year assessments against these key standards for all pupils. These assessments are reported to parents in our end of year reports and used in the whole school standards analysis above, which in turn is used to support improvement planning in DT.

### **Learning – 'an alteration in long-term memory':**

As a staff team, we considered how we ensure children are learning well in DT; that, as OFSTED define it, there is an alteration in long-term memory. Our curriculum content ensures we revisit and develop learning through spaced retrieval and creating memorable experiences for the children to recall. The buzz about our block DT projects ensures the learning becomes sticky learning.

### **Last year's key developments and successes in 2021/22:**

1. To continue to cover a range of diverse role models within Design and Technology. *All children to have access to a diverse range of role-models in design and technology. Understanding the impact they had on the industry and the key skills used to develop their ideas or inventions.*

**(20/21 Target ongoing)** Teachers' confidence in structuring a DT project has flourished, allowing refinements to existing projects and enhancing the learning by offering role-models in architecture, design, cookery and inventions. We have been a broad range of role-models across the curriculum such as Coco Chanel, Nicholas Grimshaw (architect of the Eden project) and Nadiya Hussain. This is something we continue to strive to incorporate into our curriculum, updating role models and comparing our work to those of existing products.

2. To maintain a consistent form of evidencing of class DT projects, ensuring full coverage of our termly topics and enrichment opportunities. *Detailed termly project packs to include lesson plans, links to skills and prior learning. Breaking down each part of the projects infused with pupil voice.*

**(20/21 Target achieved)** Each project is recorded in a project pack, allowing planning, recording and reviewing of each project to be considered using the document. Our consistent model has allowed new teachers to use the pack as a guide to lead a project. Some differences, dependent on the age of the children or project being taught can be seen, however, these documents are consistent across the school. When monitoring it was evident that each part has some pupil voice contributions alongside links with prior learning from other year groups.

3. To continue to re-establish communication and book cooking facilities from different schools and providers, which were previously established before COVID, providing ample opportunity to develop key cookery skills and learning about where food has come from. *Children will continue to build key cookery skills from both class projects and enrichment opportunities.*

**(20/21 Target achieved)** As we strive to provide all children will the opportunity to learn cookery skills alongside learning about where food comes from we have seen links with our PSHE curriculum. Children learning about healthy diets and food groups in PSHE provided good discussions and links with our DT projects to create healthy snacks. Every pupil in upper KS2 had the opportunity to visit a kitchen at a



neighbouring school and use the facilities including how to safely use ovens and hobs. Additionally, our cookery club after school has remained popular in KS2, allowing children to explore recipes and alternative ingredients such as

spices. We are in contact this year already with Waitrose cookery school and a local farm to provide local trips to find out more about where food comes from.



**Additional successful development in 2021/22-** After reviewing our DT curriculum through monitoring, discussions with pupils and with teachers. I wanted to ensure we had a tools progression document that clearly outlined what tools were introduced and from which year group. Our tool progression document now includes ratios, guidance, and CPD to all staff for best practice when using tools with pupils. We have defined a tool as something that is used to make a product or prototype

and this include rulers, scissors, saws, needles or wooden spoons.

### **Recovery curriculum - review of 21/22 provision**

No major adaptations to our Design and Technology curriculum had to be made for 21/22 school year, as the majority of key skills continued to be taught at home or at school. Some prior learning was addressed and taught if a class project was missed; prior assessment was a valuable tool for teachers to recognise gaps in learning. The DfE recovery curriculum document highlighted the importance of design, specifying children should learn about “*different factors that contribute to complex design decisions*” emphasising the need to use subject specific vocabulary and clear teaching in each part of a project. This has been the driving power behind the use of the DT flow chart in classes, which is now embedded across the school. In addition to this, the recovery document reiterated that, when appropriate, children should be introduced to the use of simple tools and therefore this was a consideration when embedding the tools progression document.

### ***No Ofsted DT Research review to date November 2022***

### **Key actions moving forward (development priorities for 2022/23):**

Target and <i>intended outcome</i>	Planned actions (including dates where applicable)
<p>1. To continue to embed our tool progression document, ensure safety is at the forefront of our curriculum when using a range of tools and that there is also an appropriate opportunity for growing independence. <i>Children will learn how to use a range of tools correctly and safety. Ensuring all children have the opportunity to build on prior learning.</i></p>	<p><b>Autumn term</b>-CPD on tools progression before class projects. This will recap the tools progression document, risk assessments and ratios. Giving teachers time to consider which tools they will be introducing or re-introducing in their projects. Will they need additional adults/planning? Audit the tools to ensure they are all clean, safe and ready for use. Tools that need to be locked away are in the secure DT draw.</p>
<p>2. To continue to build and maintain links with local facilities to enrich the DT curriculum. <i>Children will continue to build key learning across all stands of DT from both class projects and enrichment opportunities.</i></p>	<p><b>Autumn term</b>- Co-ordinate a trip to Waitrose cookery school, the brands museum and book A-life to come into school to teach about healthy and balanced diets. <b>Autumn term</b>- Give some time in a staff meeting for staff to identify areas in their curriculum where DT could enhance topics or learning. When can spaced retrieval work? <b>Spring term</b>- Book Ted Baker for support with our textiles topic. <b>Spring term</b>- Launch the Primary young engineer awards as optional home work for KS2. Subject leader to offer support and drop in lunchtime sessions to support any child wanting to take part. <b>Summer term</b>- Look at links through Camden STEAM hub for mechanical systems</p>
<p>3. Refining our curriculum to highlight enrichment/cross-curricular opportunities to ensure children are re-visiting key skills and embedding our robust curriculum across the year and beyond. <i>Children will embed knowledge and key skills by revisiting prior learning and transferring skills into other areas of the curriculum.</i></p>	<p><b>Autumn term</b>- Ensuring planning has time for spaced retrieval, discussions with class teachers. When did they last learn about the focused stand and what skills did they gain? This should be shared with pupils <b>Autumn term</b>- CPD with staff in a staff meeting to recap what DT teaching and learning looks like a Christ Church –individual support for newer staff <b>Spring term</b>- Host and present at the Camden DT hub to support development in DT across Camden. <b>Spring term</b>- Collate evidence of where DT is being taught or referenced to in other subjects so far.</p>

## Pupil voice

### *Spring 2022*

#### **Children could identify how they can remember what they have learnt in DT.**

Yr 2- learning we have done before

Yr 4- improving on things we have already learnt

Yr 6- spaced retrieval and testing things

#### **Children could talk about the main functions on the product or prototype they made.**

Yr2- Puppets. Teachers help us and we used fabric and a needle to attach two pieces of felt together.

Yr 3- We learnt about the pressure in the syringe making a card pop up (Child 2: it was the mechanism). It pushed the air out and that made the santa or whatever you drew POP!

Yr 5- For our seasonal baking we researched different recipes online before deciding as a class to make gingerbread as it was simple and seasonal. We made a batch test and got to decide which recipe to choose. We also looked at how to knead and how to whisk which I hadn't done before. Someone had never cracked an egg so that was new for him.

Yr 4- We did lots of problem solving. We looked at biscuit boxes and look them apart, to find out how the net was made. We had to investigate which way was best to reinforce our boxes so Miss Brenta put a weight on our models to test them. We choose to make cubes as they fit the biscuits in the best and strengthened them using corrugation. We all choose different paper to decorate with.

### *Autumn 2022*

#### **All children were able to recall prior learning in DT. Some made links further back in the curriculum.**

Y5 – We made money containers, but had to look at some money containers that were in shops being sold and take inspiration from them. We then designed the money containers to suit the consumer which was us. We could choose which stich we wanted to use and added zips, buttons or Velcro...so fasteners I guess. The CAP project sewing was when I first learnt how to do some basic stitching. We learnt running stich. I do sewing at home so I knew a lot already.

Y4 – We made an obelisk structure to help plants grow because Reception's kept falling over. We used wood, a special wood maybe bamboo and some people used net if they wanted to. We made models from sticks and clay to play around with different designs. Each group chose the best design to make. Previously, we made swing or slide structures in Year 1, different but helped with the models.

Y2 – How to use a knife to safely make a fruit salad. How to keep fruit from rotting and what fruits we like and dislike. In Reception we had learnt how to hold and cut with a plastic knife.

#### **Children spoke of why they find DT enjoyable**

Y1- I like drawing and designing things. I like putting the cape on and testing it

Y2- editing something to make it better, eating what you have made so maybe evaluating.

Y3- using your own ideas, testing things to see if they work and finding out why. It doesn't matter if something goes wrong

Y4 – designing mechanical products- finding out how things work.

Y5- creativity and we get to make projects home

Y6- fun, creative and uses your own ideas.

#### **Children could successfully identify which tools they have used in a project**

Y1 Scissors, felt-tip and paper

Y2 knife, chopping board, spoon and bowl

Y3 paint brushes, saw, thing to hold saw still (clamp), scissors, pencils

Y4 pencils, scissors, spade, gloves

Y5 needles, fabric scissors, rulers, pencils

Y6 glue gun, saw, vice, clamp, ruler, scissors

#### **Autumn term DT projects**

**Year 6** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y6-Christmas-DT-3D-sewn-decorations.pdf>

**Year 5** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y5-Christmas-DT-seasonal-gingerbread-biscuits.pdf>

**Year 4** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y4-Christmas-DT-biscuit-boxes.pdf>

**Year 3** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y3-Christmas-DT-pneumatic-cards.pdf>

**Year 2** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y2-Christmas-DT-sliders-and-levers-cards.pdf>

**Year 1** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Y1-Christmas-DT-sewn-puppets.pdf>

**Reception** <https://christchurchschool.co.uk/wp-content/uploads/2021/12/Reception-Christmas-DT-salt-dough-decorations.pdf>

#### **What makes our curriculum provision for Design and Technology exceptional and beyond the expected?**

- ❖ The high-quality of our curriculum planning and progression in DT, as well as our high expectations for teachers and pupils in terms of process and outcomes. Opportunities are taken to combine and reinforce learning from other subject areas, such as the crumble coding used to program the sensors for the Y6 night light project.
- ❖ Giving real life purpose for our class projects, such as making products to sell at the Christmas fair.



- ❖ A wide range of cross curriculum links, giving children the opportunities to revisit key skills and apply their knowledge in a range of different contexts.
- ❖ Cooking enrichment opportunities each year including cooking club and our cooking projects using local cooking suite and trips to explore where food has come from.
- ❖ A wide range of resources to explore and use which allows for more creativity and experimental aspects of each projects. This includes some opportunities' to use tools (when appropriate).

**Key points for discussion with governors about this report**

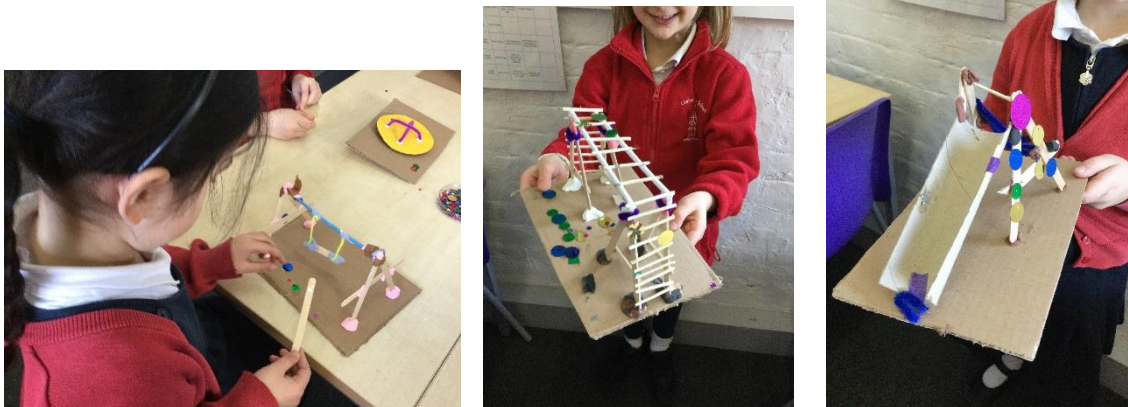
- Share evidence in class DT portfolios and display of high-quality DT work around the school (classrooms and communal areas like the front office cabinet, musical instruments and wicker horses)
- Developing cooking skills-showing the cookery skills development documentation, discussing the local links already made.
- Success of DT in 2021/22 in response to the recovery curriculum-ensuring no gaps were created or not addressed.
- Skills progression document divided into design, make, evaluating and technical knowledge.
- Our dedication to using a diverse range of role models in the design and technology industry to promote key skills and learning.

**Strand progression: Structures**

**Reception Junk Modelling**



**Year 1 Free standing structures (playground equipment models)**



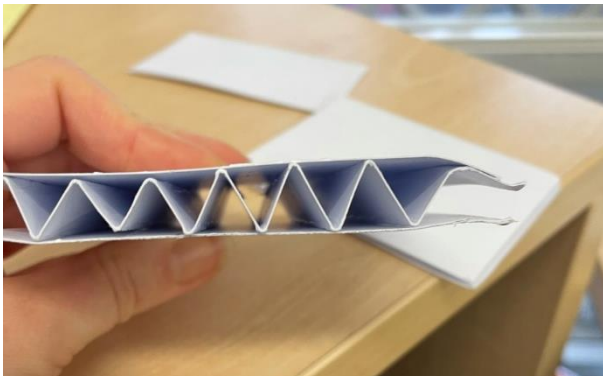
**Year 2 Free standing structures and reinforcing joints (Cars)**



### Year 3 Frame Structures (supported) (plant obelisks)



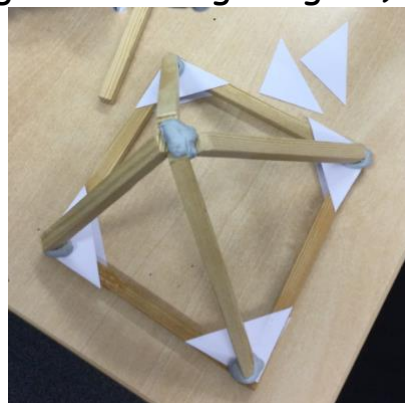
### Year 4 Shell structures (strengthened biscuit boxes)



### Year 5 Frame structures (more complex) (animal shelters)

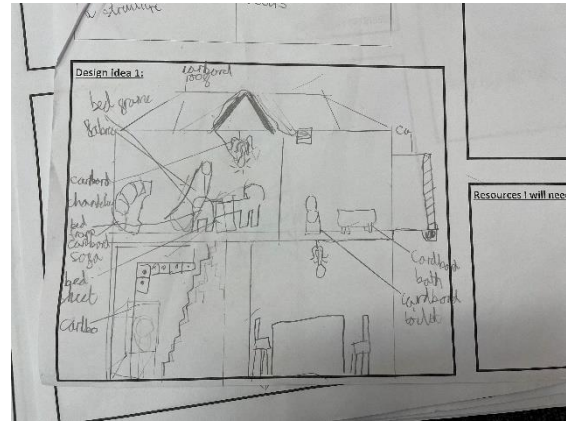


### Year 6 Shell Structures/ strengthening a frame (Supporting sensor controlled moving cars and night lights)

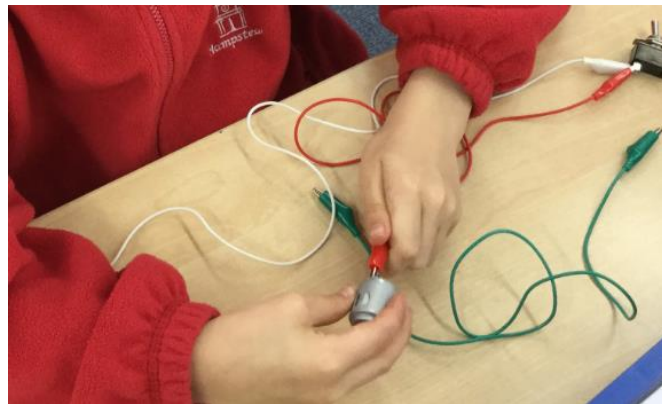


## Strand progression: electrical systems

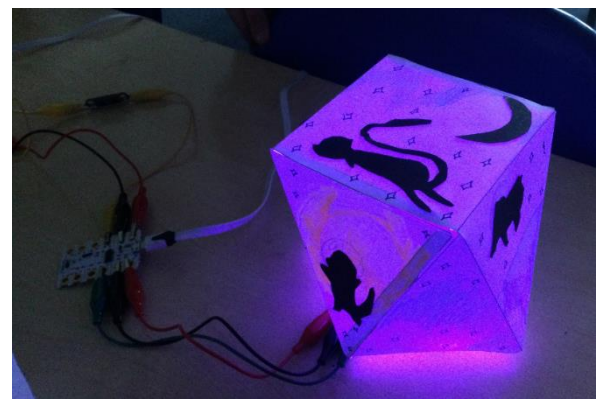
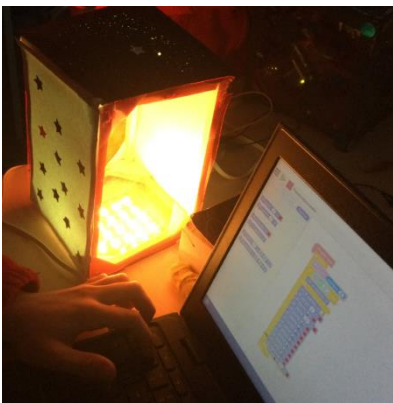
Year 4 Simple circuits and switches, introducing remote control (dolls houses)



Year 5 Circuits with motors (fairground rides)



Year 6 Monitoring and control (Night lights using Crumble)



Year 6 More complex switches and motors (moving vehicles)





## Strand progression: Mechanical systems

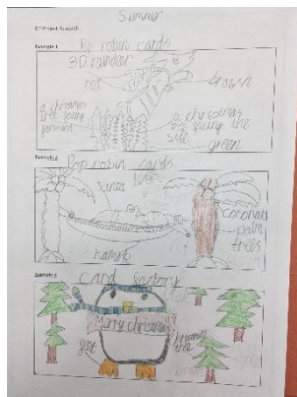
### Year 2 Sliders and levers (Christmas cards)



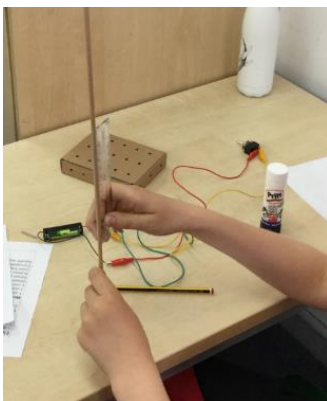
### Year 2 Wheels and axles (simple vehicles)



### Year 3 Levers and linkages; pneumatics (Christmas cards)

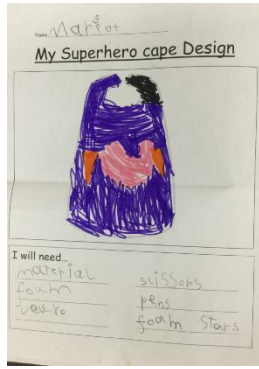


### Year 5 Pulleys and gears; cams (Fairground rides)



## Strand progression: Textiles

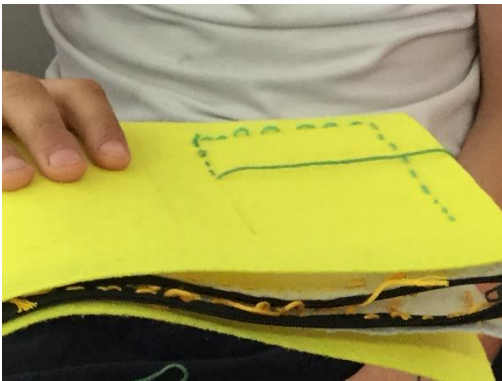
### Reception- cutting fabric and attaching decorations (Capes)



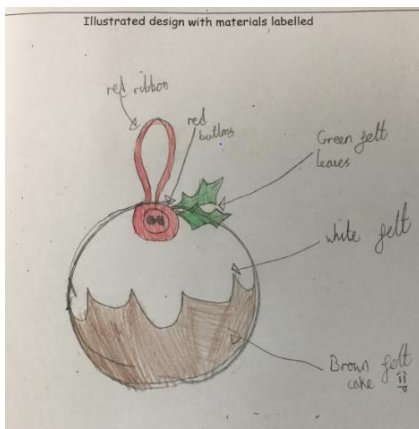
### Year 1 Templates and joining (Christmas puppets)



### Year 4 2D fabric to 3D textile product (Wallets)



### Year 6 Combining fabric shapes and finishing (Christmas pudding decorations)



## **Strand progression: Cooking**

### **Reception-Where fruit and vegetables grow from-making sandwiches**



### **Year 1 Preparing fruit and vegetables (e.g. linked to Science learning about animals including humans)**



### **Year 2 Food preparation - safe and hygienic (e.g. in keeping healthy and safe week or linked to instruction writing)**



### **Year 3 Healthy varied diet, origins of food (e.g. cooking school visit)**



## Year 5 Culture and seasonality in food (Christmas biscuits)



## Year 4 and 6- Cookery enrichment (Trip to Fitzjohn's Primary school)

**Year 6 Cooking**  
This week, Year 6 were lucky enough to visit Fitzjohn's Primary School kitchen to cook some delicious food!

We worked in groups to cook a delicious vegetarian tomato based sauce to enjoy with pasta. We decided in our groups the quantities of ingredients according to our taste. The experience provided a brilliant opportunity for us to practise our chopping skills we learned in Year 3 D&T. It was fantastic to use the amazing local kitchen to prepare and cook the food! We couldn't wait to eat it!

A collage of photographs showing Year 6 students in a kitchen setting, engaged in various cooking activities like chopping, stirring, and eating.