Christ Church School, Hampstead
A village school in London inspiring ***life in all its fullness***

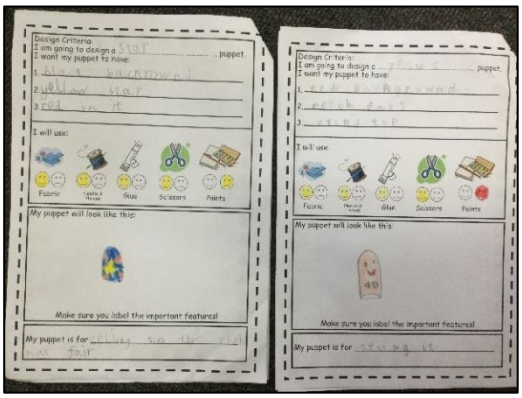
Curriculum report to Governors
Design and Technology
2022-2023
Subject leader: Victoria Innes

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 curriculum 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 purpose 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', 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 are well resourced which enables all the children to make a high-quality product. Where possible we are reusing and recycling materials to increase 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

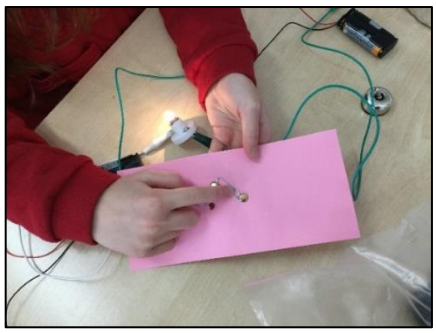
Ongoing assessment:

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 on 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.

Adaptive teaching case studies



Most pupils with SEND or additional individual needs can fully access our Design and Technology curriculum without specific adaptations to teaching. These are two case studies where small but specific adaptations have supported pupil progress.

- A pupil who needs support with developing fine motor skills, accesses our DT curriculum fully with small adaptations and extra practice when using specific tools. Ratio consideration and carefully planning when grouping children is considered by the teacher. At times, some of the resources have been made larger such as making a hand puppet instead of a finger puppet and using a larger, plastic needle.
- A pupil on SEN register with social and communication needs has been supported within our DT curriculum to ensure that safety is taught explicitly and directed to the pupil when learning. Teacher have also made some adaptations to instructions to make them simple and easy to follow alongside carefully planning the groups/pairing for this child within DT. Some variations in tools and/or the level of support given when using the tools have been made, such as bigger syringes for pneumatics and working one-to-one when using the saws and vices when making a toy car.

Last year's key developments and successes in 2022/23:

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. *Children will learn how to use a range of tools correctly and safety. Ensuring all children have the opportunity to build on prior learning.*

(22/23 target achieved) Subject leader has ensured the document was implemented by all staff members, including helpful tips when using tools and ratios for different tools. This has supported more independence in pupils. Furthermore, teachers have developed their confidence is using tools within the classroom with some additional support for ECTs when planning DT activities.

2. To continue to build and maintain links with local facilities to enrich the DT curriculum. *Children will continue to build key learning across all stands of DT from both class projects and enrichment opportunities.*

   (22/23 target ongoing) Getting back to supporting Camden learning for DT will be an important step moving forward into next year. Additionally, the external support and resources can be built on and used next year to enrich DT projects. We have booked a local cookery school for Year 3 and the cookery unit at a local school for our Year 6 class to develop skills using ovens.

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. *Children will embed knowledge and key skills by revisiting prior learning and transferring skills into other areas of the curriculum.*

   (22/23 target met) Although we will continue to strive to deepen the richness our DT curriculum at Christ Church, we have given children ample opportunities this year to revisit key skills during enrichment clubs, trips and cross-curriculum learning. We continue to have a cookery and Lego club after school. Children are using key skills in structures when planting in CREW to support the growing vegetables (linked with their learning from Year 3) and Year 6 will be making props for their Year 6 production.

No Ofsted DT Research Review or Subject Report to date

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

Target and *intended outcome*	Planned actions (including dates where applicable)
1. To ensure a good introduction and associated (and relevant) support for new teachers, particularly ECTs. *Maintenance of high curriculum standards and coverage in DT, alongside safe use of tools.*	- Talk through the curriculum pack with new teachers, explaining each document. - Direct them to the tools supervision ratios and where the specific tools are locked away - Support with planning and delivering units of work and associated resourcing.
2. To continue to further develop and refine particular units of work, exploring allowing the children more choice and freedom. *Increase in children's independent skills in DT where close supervision is not required. Increase in children's confidence and problem solving skills when carrying out DT work.*	- Focus on certain structures units, such as Y4 Christmas boxes and Y3 Obelisks. Explore how to increase children's options within the unit to further foster independent DT skills. Focussing on units without specific tools which require supervision is the right place to start. - Where possible, the DT lead or a member of SLT should teach these units, making adjustments and reflecting on is as it progresses. - Update planning accordingly.
3. To explore further curriculum enrichment opportunities to help children understand and see a real-life purpose for DT. The Young Engineers Competition was a success in academic year 2022/23. *Increase in children's understanding of DT in a wider context and in real life situations, helping them to make sense of it whilst also giving it a purpose.*	- Further review the impact of the Young Engineers Competitions (since it happened at the end of the academic year) - Work with the subject leader network in Camden to further identify any similar opportunities for the coming academic year - Contact the organisation which ran that last DT competition to see what else might be running this year. - Internet search possible opportunities or even trips which will help to enhance and enrich the children's experience of DT at Christ Church.

Pupil voice

How does prior learning help with your new learning?

Y3: We learnt about playgrounds in y1 and that helps us to remember how to attach things which helped with our obelisk structures.
Y6: Sewing in y4 helps us in y6 and even the sewing in y1
Y2: We can look back at models from last year
Y5: When doing a project, you think back and relate to other learning, you think what can help me with this one?
Tinkering helps me.

In DT what helps you move learning into long term learning?

Y4: Looking at existing products, DT folders of our previous work, quizzes about our learning before
Y5: Display boards and the DT stuff in the office.
Y6: When it's fun, evaluation sheets and using those signs so we know which bit is happening.

Children enjoy DT at Christ Church

Y2: You get to make and do things. You get to design and make it your own. It is fun because there is no right or wrong. If you don't know how to do something you learn how to do it

Y3: it is different from other lessons, it is creative. It is very exciting and normally new learning

Y5: I enjoy it because it is harder, calm but good fun and usually something that challenges me

Children are able to talk about specific technical DT skills and wider skills

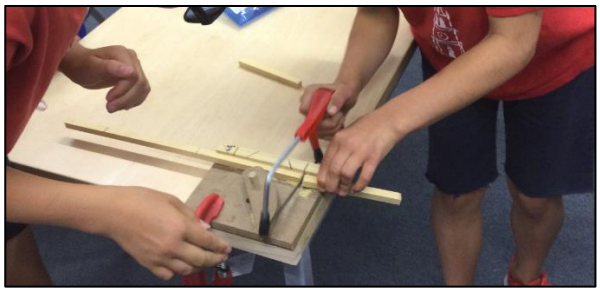
Y2: How to do different types of cutting and peeling. Safety around knives

Y3: How to tie string and knots

Y5: We learnt baking skills and teamwork

<u>What makes our curriculum provision for Design and Technology exceptional and beyond the expected?</u>

- 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 curricular 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).



<u>Key points for discussion with governors about this report</u>

- 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.
- 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)

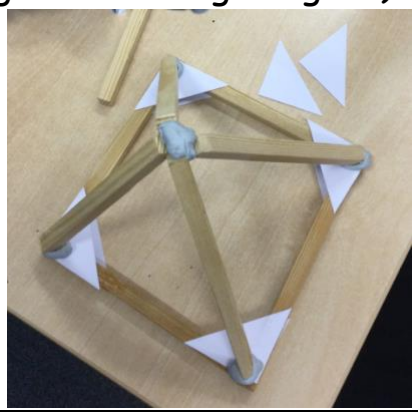
Year 2 Free standing structures and reinforcing joints (Cars)

Year 3 Frame Structures (supported) (plant obelisks)

Year 4 Shell structures (strengthened biscuit boxes)

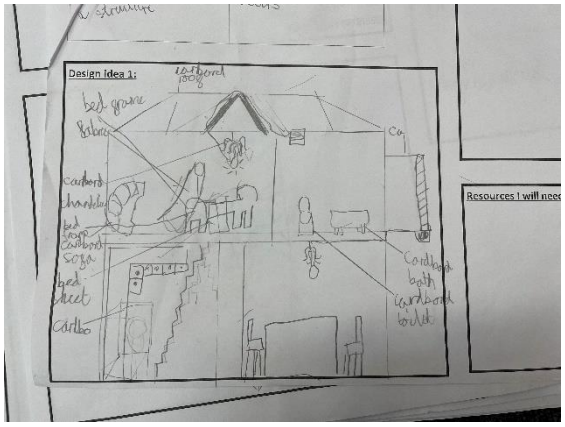
Year 5 Frame structures (more complex) (animal shelters)

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

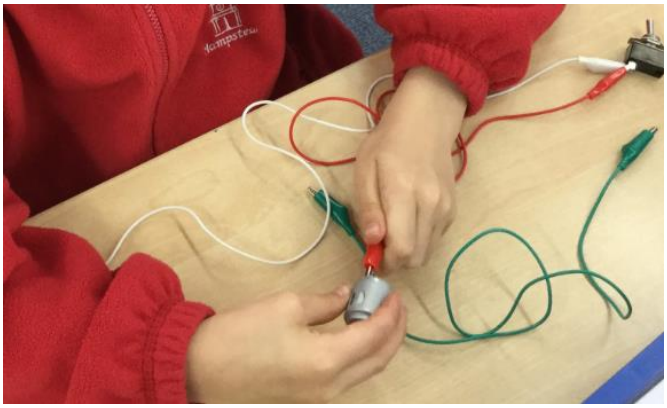


Strand progression: electrical systems

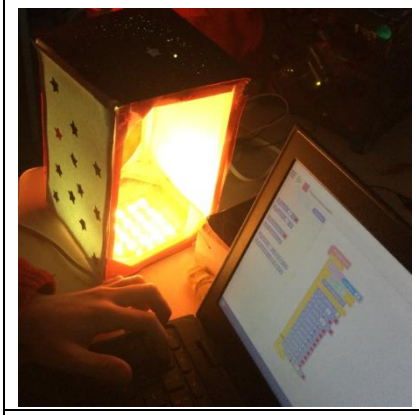
Year 4 Simple circuits and switches, introducing remote control (dolls houses)

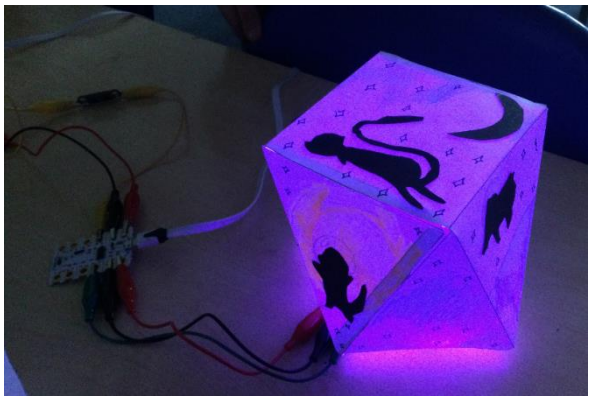


Year 5 Circuits with motors (fairground rides)



Year 6 Monitoring and control (Night lights using Crumble)





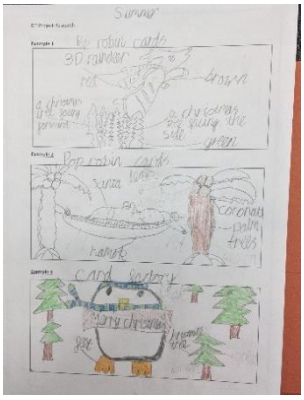
Year 6 More complex switches and motors (moving vehicles)

Strand progression: Mechanical systems

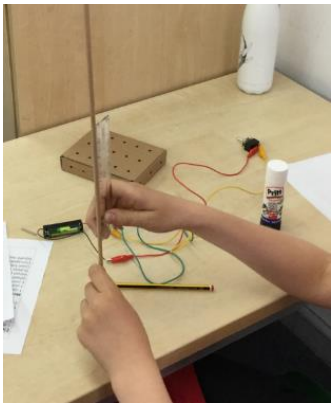
Year 2 Sliders and levers (Christmas cards)

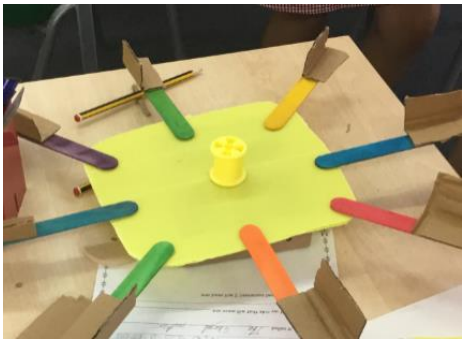
Year 2 Wheels and axles (simple vehicles)

Year 3 Levers and linkages; pneumatics (Christmas cards)



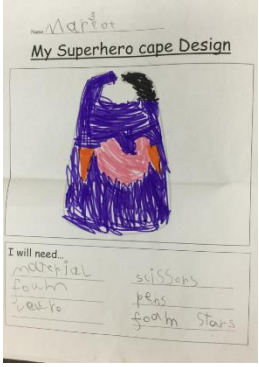
Year 5 Pulleys and gears; cams (Fairground rides)





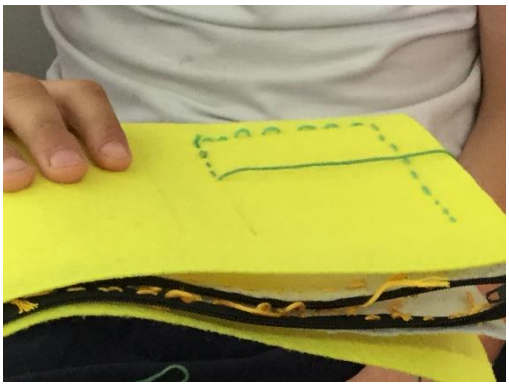
Strand progression: Textiles

Reception- cutting fabric and attaching decorations (Capes)

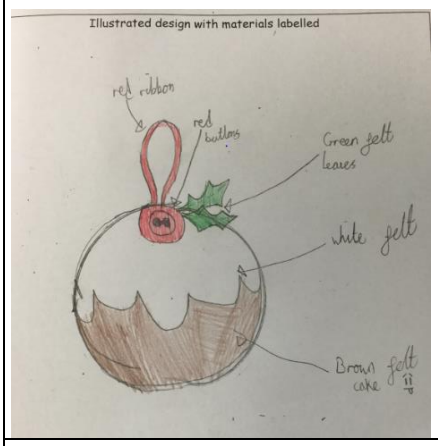


Year 1 Templates and joining (Christmas puppets)

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)

<u>Year 5 </u>Culture and seasonality in food (Christmas biscuits)

<u>Year 5 and 6</u>- Cookery enrichment (Trip to Fitzjohn's Primary school)