



Design Technology at St Andrew's CE (VA) Infant School

Contents

Page 3 - 4	Timetable and Content of Design Technology Lessons
Page 4 - 6	Planning Assessment and Resources
Page 7 - 9	Intent, Implementation and Impact
Page 10 - 12	Policy
Page 13 - 14	Key Vocabulary
Page 15	Sticky Knowledge
Page 16 - 19	Deepening Skills/Greater Depth

Timetable

At St Andrew's Infant School, the children are taught Design Technology (DT) as part of their half termly topics. In KS1, this is linked to the Cornerstones Curriculum or for EYFS, Development Matters and the EYFS Framework (2020). Across the school, DT is mainly taught in weekly lessons but in some topics, we combine our DT lessons into full afternoon sessions. In Early Years, children have constant independent access to a creative area within continuous provision and directed work is undertaken in small groups.

Planning

Lessons are planned to enable skills progression for all children. The EYFS planning allows for all pupils to meet the EYFS Early Learning Goal outcomes. Teaching staff access Development Matters, the EYFS Framework (2020), the National Curriculum, Cornerstones and the Rainbow Continuum to effectively plan lessons. This builds on children's prior learning and provides quality opportunities for a skills-based approach to our spiral curriculum. DT planning across EYFS and KS1 builds upon previous skills already taught and ensures progression throughout the subject.

Content of DT Lessons

Each term, the children focus on selected key skills and are able to build upon and improve their skills and learning from the previous lesson. Lessons should include a wide range of resources, rich and accurate vocabulary and opportunities for children to fully engage with activities, explore resources, discuss and share ideas with adults and their peers and time to ask questions. Each lesson should conclude with **what** the learning was, not purely the activity carried out. Children complete a process of Design, Make and Evaluate and use design sheets across the school. Most topics start with students looking at products that are already available in order to create design criteria that will be used to evaluate against.

EYFS

Topics are planned following children's interests. In line with the EYFS Development Matters document and the EYFS Framework (2020), opportunities are provided to safely explore a variety of materials, tools and techniques, fully supported by EYFS staff, both as adult directed tasks and 'in the moment' planning. Teachers will often 'model' a creation to teach how to use tools and to talk through the techniques applied, using DT related vocabulary.

Children are provided with opportunities to access a variety of stimulating media and materials, both indoors and outdoors:

Indoors

Construction kits: small and large, junk modelling, deconstruction building, Mobilo, Duplo, Lego, wooden blocks, stickle bricks, nuts and bolts, straws and connectors, marble run, wooden blocks, and bricks.

Cutting and joining resources: scissors, hole punches, nails, glue, sellotape, treasury tags, ribbon, split pins, wool, string, nuts and bolts.

Media: paper, card, bags, cardboard boxes and trays.

Embellishments: sequins, glitter, buttons, threads, pom poms, wool, ribbon and stickers.

Outdoors

Planks of wood, tyres, den building poles, fabric, canes, crates, pegs, ropes, reels and bricks.

Adult directed opportunities will begin with capturing a snap shot of children's current skills and knowledge, which could be recorded by taking photographs and scribing a comment from the child about their creation. Children will be given time to think, consider outcomes and share ideas with a partner or small group, to help form the basis of their creative thinking skills. All activities need to allow for trial and error and to encourage children to be proud of their achievements. This will be concluded with a careful and vocabulary focused summary of what skills and knowledge have been learned.

Real life images can help the children to recreate what they see by independently accessing the tools available. As children spend a considerable amount of their time learning through the provision, EYFS staff continually 'plan in the moment' as the children learn through trial and error or may even evolve their own ideas in to a masterpiece to share.

These situations provide rich learning outcomes and develop the child's innate desire to explore. At all times, EYFS staff should use open ended questioning, model key vocabulary, support with quality resources and enable children's exploration and curiosity to flow, whilst making links to prior learning.

All children are encouraged to experiment with design, texture, form, function and construction. Staff encourage them to share their creations, explaining the process they have used. Class Big Books contain images and pupil voice of the DT worked upon within the week, labelled with a rainbow and the relevant skills and knowledge tagged from the Rainbow Continuum.

SEND and vulnerable children are fully supported and encouraged to progress by adapting the resources, tools and techniques and varying the WALT.

KS1

Ahead of every lesson, the Big Six questions will be displayed to 'learn more, remember more' and to provide children with a re-cap of the previous learning and key vocabulary, tools and techniques applied to build upon. Class Big Books are updated weekly with pupil voice applied to show the children's understanding of not simply their final creation but the learning that has taken place.

Students are introduced to the work of engineers, both old masters and contemporary, in order to give inspiration and show examples of different techniques. For example, in Year Two's 'Land

Ahoy', the children look at different designs of boats and ships and in Year One, the children explore a range of rocket and moon buggy designers and builders in their 'Moon Zoom' topic.

DT provides a platform to design, make and evaluate not only as individuals but with a partner or within groups. Either way, we value and celebrate individuality and encourage evaluation and critique to provide feedback for improvement on skills. Children's work is captured in Big Books and evaluation and critique annotated through Pupil Voice.

SEND and vulnerable children are fully supported and encouraged to progress by adapting the resources, tools and techniques and varying the WALT. They may work in small groups or one to one where necessary.

Rainbow Skills Continuum

This document is used alongside the curriculum to extend the children's design and creative skills and also enables progression for exceeding children. This should be highlighted to show coverage and used to inform planning. A copy must be kept up to date for the subject lead to collect at termly intervals.

Marking

In line with the school marking and feedback policy, children's DT work will be photographed and acknowledged with a tick. All comments made must relate to the WALT - learning objective.

In addition, verbal feedback should be given throughout the lesson. Children are to be given advice on how to improve. Wherever possible, WAGOLL (what a good one looks like) examples will be shown to give students ideas and inspiration.

Children will begin to self-evaluate their work and offer critique to others on how they can improve.

Assessment

DT will be assessed following the school policy and using the Cornerstones and Rainbow Curriculums to track coverage across each year group. Teaching staff should use assessment strategies throughout lessons and as part of Quality First Teaching. Data will be collected and analysed termly by the subject lead and report to SLT. The subject leader reports the data annually to Governors.

Lesson Resources

To allow learning to be current, stimulating and fun, accessible resources should be of a good standard. The school grounds and local environment should be used frequently. Links with local designers and workshops should be maintained, particularly across the Local Authority Network Meetings.

Suggested websites:

The Design Technology Association <https://www.data.org.uk/for-education/primary/>

STEM Learning <https://www.stem.org.uk/resources/curated-collections/primary-0>

BBC Bitesize <https://www.bbc.co.uk/bitesize/subjects/zyr9wmn>

Twinkl <https://www.twinkl.co.uk/resources/keystage1-ks1/ks1-subjects/ks1-design-and-technology>

Cracking Ideas https://crackingideas.com/teachingresources_hub

Crafts Council <https://www.craftscouncil.org.uk/articles/>

Intent, Implementation and Impact

Intent

At St Andrew's Infant School, we value DT as an important part of the children's entitlement to a broad and balanced curriculum. DT is an inspiring, rigorous and practical subject. It encourages children to learn to think creatively and to solve problems both as individuals and as members of a team. Staff encourage our children to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

Cornerstones, our spiral curriculum, enables the children to revisit previous skills and knowledge under three main areas:

Textile

Cooking

Nutrition

Along with STEAM (Science, Technology, Engineering, Art and Maths) activities, our children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. STEAM activities align with the way we work and problem solve in daily life, making it an exceptional way of instructing and learning. We teach skills in the way that they are used in the real world. Rarely does a job require only one skill set.

Implementation

To ensure high standards of teaching and learning in DT, we implement a curriculum that is progressive throughout the whole school. It is taught as part of a termly topic, focusing on knowledge and skills stated in the National Curriculum and EYFS Framework (2020). We ensure that DT is given the same importance as the core subjects, to enable all children to gain 'real-life' experiences.

The Key Stage 1 DT curriculum is based upon the 2014 Primary National Curriculum in England and EYFS Framework (2020), which provide a broad framework and outlines the knowledge and skills required to be taught. Teachers plan lessons for their class using the Cornerstones Curriculum, whilst referring to the Rainbow Continuum. Teachers can use these documents to plan DT lessons suitable to their class's interests. These documents ensure the curriculum is covered and the skills and knowledge taught are progressive across the year groups.

Our children are introduced to classic and contemporary designers in order to understand and appreciate how their designs impact on daily life and the wider world. We ask children to consider how high-quality DT makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Early Years Foundation Stage

The development of our children's design and cultural awareness supports their imagination and creativity. It is important that they have regular opportunities to engage with design, enabling them to explore and play with a wide range of media and materials.



Children in reception will be learning to:

Explore, use and refine a variety of artistic effects to express their ideas and feelings.

Return to and build on their previous learning, refining ideas and developing their ability to represent them.

Create collaboratively, sharing ideas, resources and skills.

(Development Matters 2020)

Pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have opportunities to learn to:

- Explore the textures, movement, feel and look of different media and materials.
- Respond to a range of media and materials, develop their understanding of them in order to manipulate and create different effects to express their own ideas.
- Develop skills to use simple tools and techniques competently and appropriately and with care and precision.
- Select appropriate media and techniques and adapt their work where necessary, to encourage independence.
- Talk about their creation and be proud of what they have achieved.

Key stage 1

Pupils are taught:

Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Make

- Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Evaluate

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

Technical knowledge

- Build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.

Impact

Assessment of children's learning in DT is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. Assessment is used to inform differentiation and provide support or challenge when required by the children. EYFS children are Baseline assessed upon entering Reception and in-line with the Expressive Arts and Design aspect of the EYFS Framework (2020). Progressed is tracked using a weekly tracking system and via 'Target Tracker'. Age related expectation levels are reported to parents at the end of each year group.

Summative assessment is conducted half-termly by class teachers to inform the subject leader of progress or skills and knowledge still to be embedded. This is then recorded on school tracking sheets. This data is analysed on a termly basis to inform and address any trends or gaps in attainment. The aim is that, through this monitoring, we will be able to see how DT has an impact on all children. Through planning and lesson monitoring, books and class Big Book scrutinies, conducting learning walks and pupil voice sessions, observing displays and working walls, discussions with staff, we will ensure all children are getting the best possible opportunities to achieve the curriculum objectives, skills and knowledge. Support is put in place both in-class and through a targeted DT lunchtime club.

*At St Andrew's, children will be taught to **become reflective about beliefs and values, and use their imagination and creativity to develop curiosity** in their learning. They will be helped to develop and apply an understanding of right and wrong both in and out of school and be encouraged to take part in activities to develop their social skills. Children will develop an awareness of and respect for diversity in relation to gender, race, religion and disability. All pupils will have the same access to all areas of the curriculum regardless of their gender, race or cultural background.*



DT Policy

Rationale

At St Andrew's CE (VA) Infant School, we believe that the development of DT skills will enable the achievement of personal fulfilment and the satisfaction of the whole child. The development of skills in DT can be applied across the whole school curriculum, providing visual and tactile experiences to which the child can relate. Aesthetic development, awe, wonder and a sense of beauty, together with an appreciation of the work and views of others will be central to our DT curriculum.

Aims

In teaching DT, we aim to:

- Provide pupils with the skills, concepts and knowledge necessary for them to express their responses to ideas, feelings and experiences in a visual and tactile form.
- Encourage the development of imagination, original thought and personal expression.
- Enable children by developing their ability to appreciate and evaluate artefacts.
- Instil in the children an appreciation of the design, construction and suitability of everyday objects.
- Introduce children to, and encourage the use of, the correct vocabulary.
- Ensure the children to be aware of all hazards and have the skills to use tools and materials correctly.
- Develop pupils' aesthetic awareness and enable them to make informed critical responses about their own work and that of others.
- Become aware of the work of a range of famous designers to inspire, support and develop their own individual styles of work and encourage children to value the contribution made to their world by designers and craft workers from many cultures and to know how this reflects and shapes our history.
- Help children develop socially through collaborative working and to enable the children to critique, evaluate and test their ideas, products and the work of others.
- Produce two-dimensional and three-dimensional work .
- Employ a range of teaching and learning styles so that pupils have the opportunity to investigate and evaluate products, identify needs, generate ideas, plan, make and test to find the best solutions, develop techniques, skills, processes and knowledge and assemble and disassemble simple objects.
- Draw upon other disciplines such as maths, science, engineering, computing and art to develop their own work.
- Understand and apply the principles of a healthy and varied diet to prepare dishes and to have an understanding of where food comes from.

Planning

- Class teachers will plan their work in conjunction with the themed work/topic they are undertaking.
- Class teachers will ensure they plan with the pupils' abilities, experiences and interests in mind.
- Class teachers will refer to the Key Skills and will ensure that adequate coverage of all aspects of DT are taught: developing, planning and communicating ideas, working with tools, equipment materials and components to make quality products and knowledge and understanding of materials and components.
- Class teachers will ensure they set clear, achievable, yet challenging goals for all pupils.
- Pupils will be given the opportunity to look at a range of different designers and styles to inspire, challenge and understand the history and cultural development (these will include those famous for design).
- Through planning, pupils will have the opportunity to use a range of mediums for mark making and develop their understanding of 3-dimensional design and technology work to include salt dough, junk modelling, clay and Modroc. They will also be able to explore and use mechanisms, build structures exploring how they can be made stronger and stiffer and more stable.
- Where possible, pupils will have the opportunity to use ICT to support their learning in DT.
- EYFS classrooms will have a well-thought through, inspiring and well-resourced craft and DT area which the children can access freely and on a daily basis.

Assessment and reporting

- Class teachers will make continuous assessments and use these to inform future planning.
- They will assess the on- going development of the children's skills and plan differentiated activities to meet the varying abilities of all children under the headings Emerging, Expected and Exceeding or deepening skills.
- Assessment data will be recorded termly on Target Tracker in the Foundation Stage.
- Parents will have the opportunity to discuss their child's progress at Pupil Progress meetings.
- Pupils' progress will be reported on in the end of year report.
- Pieces of children's work and photographs will be kept as evidence of their attainment in DT.
- These will be displayed on working walls and class Big Books, linked to the Rainbow Continuum.

Monitoring

- The Subject Leader will monitor teachers' planning, assessments, work books, class Big Books, displays, conduct lesson observations and learning walks and capture pupil voice.
- The Subject Leader will review and audit the Key Skills (Rainbow Continuum and Sticky Knowledge) alongside the Head of School.
- All teaching staff will be involved in any alterations made to the long-term planning of the DT scheme and have a responsibility to ensure that the policy and Key Skills (Rainbow Continuum and Sticky Knowledge) scheme of work are implemented.

Behaviour and Safety

- Pupils will be actively encouraged to take responsibility for their own behaviour and safety and also that of others.
- Resources will only be used if they are considered safe. Checking this will be the responsibility of the adult managing the task. Class teachers must be aware of safe practice when using equipment.
- Protective clothing will be worn for activities when required (aprons, glasses etc).
- Accidents will be recorded in accordance with the school's Health and Safety Policy.
- Glue guns will only be used under adult supervision.

- Stanley knives or craft knives must not be used by children or left where children may have access to them.

Consultation, Monitoring and Review

The policy will be reviewed every two years by the Subject Leader in consultation with staff and the Head of School/Executive Headteacher.

Key Vocabulary

KS1

Year 1

Food

- Blender
- Carton
- Fruit
- Healthy
- Ingredients
- Peel
- Peeler
- Recipe
- Slice
- Smoothie
- Stencil
- Template
- Vegetable

Mechanisms

- Assemble
- Design
- Evaluation
- Mechanism
- Model
- Sliders
- Stencil
- Target audience
- Template
- Test

Structures

- Client
- Design
- Evaluation
- Net
- Stable
- Strong
- Test
- Weak
- Windmill

KS1

Year 1

Textiles

- Decorate
- Design
- Fabric
- Glue
- Model
- Hand puppet
- Safety pin
- Staple
- Stencil
- Template

Mechanisms

- Axle
- Axle holder
- Chassis
- Design
- Evaluation
- Fix
- Mechanic
- Mechanism
- Model
- Test
- Wheel

Food

- Alternative
- Diet
- Balanced diet
- Evaluation
- Expensive
- Healthy
- Ingredients
- Nutrients
- Packaging
- Refrigerator
- Sugar
- Substitute

Mechanisms

- Evaluation
- Input
- Lever
- Linear motion
- Linkage
- Mechanical
- Mechanism
- Motion
- Oscillating motion
- Output
- Pivot
- Reciprocating motion
- Rotary motion
- Survey

Structures

- Function
- Man-made
- Mould
- Natural
- Stable
- Stiff
- Strong
- Structure
- Test
- Weak

Textiles

- Accurate
- Fabric
- Knot
- Pouch
- Running-stitch
- Sew
- Shape
- Stencil
- Template
- Thimble

Mechanisms

- Axle
- Decorate
- Evaluation
- Ferris wheel
- Mechanism
- Stable
- Strong
- Test
- Waterproof
- Weak

STICKY KNOWLEDGE - DT

	Knowledge	Skills
EYFS	<ul style="list-style-type: none"> • What is DT? • Language - mix, roll, squash • Model making • Pattern making 	<ul style="list-style-type: none"> • Use and hold a pair of scissors correctly • Select relevant equipment for a purpose - use a hole punch, sellotape, masking tape and glue • Use a knife safely and correctly to spread • Food hygiene • Fruit kebabs repeating patterns • Making bread
Year One	<ul style="list-style-type: none"> • Collage • Cut and join using split pins, treasure tags, stapler • Textiles • Texture/effects with paper - rip, tear, fold, cut • Layering 	<ul style="list-style-type: none"> • Food hygiene • Using a knife by applying the bridge technique • Making bread • Making basic biscuits • Super foods • Design and make fruit kebabs
Year Two	<ul style="list-style-type: none"> • Textiles and sewing • Movement in model making • Engineer • Tie die 	<ul style="list-style-type: none"> • Printing and pressing • 3D cards • Minibeast snacks • Making flapjack • Making lemon biscuits

Essential sticky knowledge

Deepening Skills / Greater Depth in DT at St Andrew's Infant School

D&T gives children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.

D&T Association 2020

What Deepening Skills / Greater Depth means in DT

Creating the opportunity for greater depth in DT involves allowing pupils the independence to apply their learning at a deeper level. They are the pupils who take an idea or a new skill and adapt it or develop it further independently. This means that pupils working at Deepening Skills/ Greater Depth will be able to:

- Have confidence to work independently, following their own lines of enquiry to make products to solve a need they have realised. Children design by making improvements to the finished product.
- Be innovative, resourceful and make design decisions.
- Stick tightly to the brief and consider the end user's needs and preferences throughout the process.
- Think critically about and comment on other products and their own product.
- Amend their product to improve its outcome.
- Have confidence to present their work to others.

Guidance from Professional Bodies

The Design and Technology Association – "Design and Technology education involves two important elements - learning about the designed and made world and how things work, and learning to design and make functional products for particular purposes and users.

Children acquire and apply knowledge and understanding of materials and components, mechanisms and control systems, structures, existing products, quality and health and safety.

Design and Technology education helps develop children's skills through collaborative working and problem-solving and knowledge in design, materials, structures, mechanisms and electrical control. They are encouraged to be creative and innovative and are actively encouraged to think about important issues such as sustainability and enterprise."

There are three core activities children engage with in DT:

- Activities which involve investigating and evaluating existing products
- Focused tasks in which children develop particular aspects of knowledge and skills
- Designing and making activities in which children design and make 'something' for 'somebody' for 'some purpose'

Planning for Deepening Skills / Greater Depth

Children are encouraged to self-service and select appropriate tools to provide opportunities to use varied tools throughout the school, carefully and with precision.

Teachers plan time for experimentation and personalisation and do not have a fixed idea of an outcome.

Teachers are encouraged to plan imaginatively and broaden/deepen planned activities in order achieve deepening skills or greater depth. Children can be encouraged to **recognise** a need, **appraise** / evaluate existing products, **demonstrate** and **employ** a skill, **plan, design, create, or assemble** (Bloom's Taxonomy).

Teaching for Deepening Skills / Greater Depth

Good teaching in DT features teachers who:

- use questioning and technically accurate explanations to develop children's skills, knowledge and understanding
- use existing products to inspire pupils and to support their investigations, testing and analysis
- use focused tasks and demonstrations effectively to show pupils different methods of manufacture e.g. stiffening techniques, papier mâché, sewing, appropriate glue, turning boxes inside out to create aesthetically pleasing models
- use their own work to model ideas and to explain the methods they used to identify the problem or to tackle a task
- use resources effectively and adapt them well to overcome barriers to participation in practical work for pupils who are disabled or have special educational needs
- use questioning to encourage classes to contribute to the development of success criteria for design briefs, to prompt pupils to think through the problems they might encounter and to share strategies to solve them
- model and use technical language and subject-specific terms accurately
- structure learning effectively to encourage the pooling of ideas and findings to support pupils critically evaluating and extending or improving the ideas
- ensure DT is relevant by linking activity to pupils' interests, establishing real contexts for their work, and building upon their knowledge and skills in other subjects
- manage discussions effectively to include all pupils' views and challenge pupils' thinking, particularly about the function of products and the needs of users
- ensure that learning intentions are clear in plans, make good use of available time, offer suitable challenge to all groups of pupils – including the more able – and develop their learning

Achievement and Assessment of Deepening Skills / Greater Depth

Good achievement and challenge are evident when pupils:

- demonstrate a secure understanding of who they are designing and making for, the purpose of the product and how it would work and the specific criteria their product must meet to be successful
- communicate their ideas and plans clearly and modify their designs and prototypes in light of their testing and evaluation
- develop technical competence, applying measurement and using tools and components with some accuracy to create strong, stiff, stable products
- incorporate mechanisms in their products and explain how their products work
- begin to use a technical vocabulary when talking or writing about what they might change as their work develops

Deepening Skills in EYFS



Exceeding Statements:

Children find out about and use a range of everyday technology.



The select appropriate applications that support an identified need, for example in deciding how best to make a record of a special event in their lives, such as a journey on a steam train.

Work Examples

What Deepening Skills looks like in **EYFS**:

Work at the Expected Standard	Work showing elements of Deepening Skills
	
<p>The children in class were set a challenge to create an Easter chick. They were provided with a range of resources and tools to select from and overseen by an adult. This child has selected their own resources and tools and are beginning to understand some of the detail required in the creation of a model.</p>	<p>Child 2 has an artistic flair and has selected equipment carefully to achieve the desired effect. There is a clear progression of independent application of skills acquired from previous learning; the child has used a scrunching and gluing technique to create an additional layer of feathering, all around the chick.</p>

What deepening skills / greater depth or exceeding looks like in **Year 2**:

Work at the Expected Standard	Work showing elements of Deepening Skills / Greater Depth
	
<p>Most of the class chose a mix of resources provided to follow their pirate ship design. This child has chosen and added a variety of resources to replicate his design and added the resources randomly.</p>	<p>This picture shows greater detail, close observation, and attention to detail. The child has observed his design and although limited the variation of resources, has chosen them well and appropriately. The pirate ship steering wheel includes spokes and the resources have been attached to replicate his design.</p>