DT Curriculum Offer

I can do all things through Christ who strengthens me

Our School Vision

St Mary's Catholic Infant and Junior Academies work together to create a caring, friendly and faith-centred community, where we seek to realise the full potential of all our family through the living love of Christ. All our work with children and their families, staff, governors, parishioners and the wider community is influenced by our core values:

Compassion, Respect and Resilience.

Intent

The purpose of our Arches Curriculum is to ensure that our children are **successful** in life and learning. The 'Nine Arches' Sankey Viaduct in Newton-le-Willows has been the inspiration for our curriculum. The viaduct was built by George Stephenson between 1828 and 1830 and the bridge, built to let trains cross above the Sankey Canal, has international significance as the world's earliest major railway viaduct still in use.

At St Mary's, we implement the National Curriculum, to deliver a high-quality, engaging curriculum that inspires pupils to become innovative and creative thinkers. The curriculum is designed to develop children's understanding of the product design cycle through ideation, creation, and evaluation. We aim to foster a culture of experimentation and resilience, encouraging pupils to take risks, reflect on their work, and learn from mistakes. Pupils build technical knowledge and practical skills across key areas.

From this, we teach to the Arches Principles –

Ambitious – Resilience – Christ at the Heart – Health and Wellbeing – Excellence – Success

Ambitious

Our Design and Technology curriculum is crafted to ignite ambition in every child. We aim to cultivate a generation of curious, resilient, and forward-thinking designers who are not afraid to dream big and tackle real-world challenges.

Resilience

We believe that learning through design empowers pupils to embrace challenges, persist through setbacks, and grow from reflection. By engaging in the full design cycle — *design, make, evaluate* — children learn that mistakes are part of the creative process and that perseverance leads to innovation.

Christ at the Heart

With Christ at the centre, Design and Technology is more than a subject — it is a way for children to reflect the creativity of God, who made us in His image to be makers, problem-solvers, and stewards of His world.

Health and Wellbeing

The curriculum provides a safe and stimulating space where children can express themselves, solve problems, and experience the joy of making — all of which contribute to a positive sense of self and emotional regulation. is intentionally crafted to support the mental health and wellbeing of every child. We believe that creativity, purposeful learning, and hands-on experiences are powerful tools for emotional growth

Excellence

Our Design and Technology curriculum is rooted in the belief that every child has the potential to achieve excellence. We aim to cultivate a culture of high expectations, where creativity, precision, and perseverance are celebrated.

Success

We believe that success is built on curiosity, creativity, and determination — qualities that are nurtured through purposeful design learning. Pupils are encouraged to think independently, solve real-world problems, and take pride in their achievements. The curriculum fosters a growth mindset, helping children understand that success comes through effort, reflection, and resilience.

Our Arches Principles-

Rationale for our Design Technology Curriculum

	Through our '**ambitious**' curriculum driver, we want our children relish challenges that being a designer can bring: to follow the design, make, evaluate process towards a final outcome/product, to use creativity and imagination, to make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
	Through the **'resilience'** curriculum driver, we encourage children to take risks, become resourceful, innovative, enterprising and capable citizens within in DT curriculum. Children are encouraged to 'make mistakes' during the design, make, evaluate process and learn from them.
	As a Catholic school we place **Christ at the centre** of all that we do. We integrate Gospel values and the teachings of the Catholic Church into every aspect of learning and teaching in our DT teaching. Through our DT curriculum, we encourage a sense of awe and wonder of the world around us.
	At St Mary's, we understand that happiness is linked to personal growth, health and development. We ensure our children are happy, healthy individuals. In DT, we ensure there is a huge emphasis on keeping safe when using tools and equipment. In Food & Nutrition, food handling and hygiene is taught before the children 'make'. Healthy diets and lifestyles are embedded within the curriculum planning. With 'wellbeing' as a curriculum driver, we give children the confidence to thrive in a diverse, global society and be respectful citizens with British and Christian Values at the core.
	Through the '**excellence**' curriculum principle, children acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. 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.
	Through '**success**', we raise aspirations to broaden our children's horizons – opening their eyes to the myriad careers they might pursue. Through careful planning, visitors attend school to inform children of their careers linked to technology. We provide tangible role models to raise our pupils' aspirations to inspire them to work even harder to be the best that they can be. We give children real life design tasks and scenarios in DT. We want our pupils to have a clear understanding of the link between achieving well and having goals for the future.

Being a St Mary's Designer

Being a designer means that disciplinary and substantive knowledge complement each other harmoniously. Design and Technology disciplines such as textiles, building structures etc are all given the same importance within our curriculum.

Through disciplinary literacy, all children read like designer: reading design briefs, recipes, and quality non-fiction texts to support their DT knowledge and understanding.

Implementation

All of our children will have consistent access to a broad, balanced and high-quality Design and Technology curriculum which will:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasing 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
- Enable pupils to critique, evaluate and test their ideas and products and the work of others
- Help pupils to understand and apply the principles of nutrition and learn how to cook

DT Long Term Plan

St Marys 'Arches Curriculum' - all our planning is based on our key principles and intent for our curriculum.

Year Group	Autumn	Spring	Summer
Nursery	Exploring joining materials – junk modelling	Kitchen Disco	Rainmakers and Shakers
Reception	Junk Modelling	Cooking and Nutrition: Soup	Textiles: Bookmarks
Year One	Structures: Windmills	Cooking and Nutrition: Smoothies	Mechanisms: Wheels and Axles
Year Two	Mechanisms: Fairground Wheels	Cooking and Nutrition: Healthy Sandwiches	Textiles: Pouches
Year Three	Cooking and Nutrition: Eating seasonally		Digital World: Wearable Technology
Year Four	Structures: Pavilions	Mechanical systems: Mechanical cars	Electrical systems: torches
Year Five	Textiles: Stuffed decorations	Mechanical systems: making a pop-up book	Cooking and nutrition: developing a recipe
Year Six	Digital World: Navigating the world	Structures: playground Electrical Systems: Steady Hand Game	

Progression Documents

A comprehensive set of progression documents are available from Kapow Primary, a sample of which has been provided. These are all accessed by staff through Kapow (and are not published in entirety here due to copyright reasons).

Progression of skills and knowledge — **Structures**

		EYFS (Reception)	
		Junk modelling	Boats
Skills	Design	• Making verbal plans and material choices. • Developing a junk model.	• Designing a junk model boat. • Using knowledge from exploration to inform design.
	Make	• Improving fine motor/scissor skills with a variety of materials. • Joining materials in a variety of ways (temporary and permanent). • Joining different materials together. • Describing their junk model, and how they intend to put it together.	• Making a boat that floats and is waterproof, considering material choices.
	Evaluate	• Giving a verbal evaluation of their own and others' junk models with adult support. • Checking to see if their model matches their plan. • Considering what they would do differently if they were to do it again. • Describing their favourite and least favourite part of their model.	• Making predictions about, and evaluating different materials to see if they are waterproof. • Making predictions about, and evaluating existing boats to see which floats best. • Testing their design and reflecting on what could have been done differently. • Investigating the how the shapes and structure of a boat affect the way it moves.
Knowledge	Technical	• To know there are a range to different materials that can be used to make a model and that they are all slightly different. • Making simple suggestions to fix their junk model.	• To know that 'waterproof' materials are those which do not absorb water.
	Additional		• To know that some objects float and others sink. • To know the different parts of a boat.

Vocabulary is VITAL

Valued	We value vocabulary in design technology and it underpins everything we do.
Identified	Design technology vocabulary is identified by the design technology subject leader and is explicitly planned for.
Taught	Vocabulary is explicitly taught in every lesson. Our knowledge organisers are used as a teaching tool for key design technology vocabulary and the design technology medium term plans include additional vocabulary to be taught.
Applied	Once vocabulary is taught, it is applied. Children apply their vocabulary in their speaking and listening, writing and assessment outcomes in design technology.
Learned	Vocabulary is revisited and relearned. Vocabulary sticks in the children's long-term memory. Lesson by lesson, year by year, children revisit and relearn key design technology vocabulary

EYFS

Through an **'explosion of experiences',** our youngest designers are exposed to the foundations of their DT learning. Carefully planned DT knowledge, skills and experiences are provided for our children. High quality books, stories and rhymes are the beating heart of our design technology curriculum in EYFS. Design vocabulary is planned for. Staff are role models in demonstrating design technology vocabulary and this is further enhanced in our excellent provision. The foundations of DT learning in EYFS is linked to Year 1 and beyond.

Both our staff and children are enthusiastic about **Design Technology**. Through ongoing CPD, we strive to ensure our teachers have expert knowledge of the music they teach. Our pedagogy is firmly based upon our curriculum intent of embedding concepts into long-term memory so that they can be recalled, to ensure substantive and disciplinary knowledge and skills can be applied fluently.

The St Mary's Catholic Infant and Junior Academies' models ensures that lessons are effectively sequenced so that new knowledge and skills build on what has been taught before and towards defined end points.

We firmly believe that all children should have full access, including those with additional needs, to our Design Technology curriculum therefore lessons are scaffolded where appropriate in order to meet the needs of all our children.

Lesson Structure

Design Technology sequence structure	
Phase 1 – Research and Experiment	• Prior DT learning revisited with reference to underpinning new learning • DT outcome for the unit shared with the children • Knowledge Organiser shared
Phase 2 – Plan and Create	• Medium term planning to inform lessons • New DT skills taught by modelling then hands-on exploration • Vocabulary explicitly taught through Knowledge Organiser • St Mary's Quality First Teaching
Phase 3 – Reflect	• Revise and review new skills • Reflect on the outcome • Share completed work • Children know more and remember more

Each lesson, within the sequence, follows the structure so prior knowledge is constantly revisited and transferred to long term memory.

Design Technology lesson structure	
Phase 1 – Recap and recall	• Lesson recap about computer scientist or learning from prior lessons • Revisit Knowledge Organiser • Vocabulary (some will be tier 3 – subject specific words) • Knowledge Organiser shared
Phase 2 – Attention grabber and Main event	• St Mary's Quality First Teaching • New knowledge taught • New skills taught • Knowledge Organiser to be used as a point of reference
Phase 3 – Wrapping up	• Revise and review – knowledge, skills and vocabulary • Reflect on how the final outcome was inspired by the lesson attention grabber • Formative assessment directly linked to progress towards final outcome

Impact

Our well-constructed and well-taught Design Technology curriculum leads to great outcomes. Our results are a reflection of what our children have learnt. At St Mary's, our philosophy is that broad and balanced leads to great outcomes and meeting end points at the end of each key stage. National assessments are useful indicators of the outcomes our children achieve.

We ensure all groups of children are given the knowledge and cultural capital they need to succeed in life. We strive to ensure that our children are equipped with the skills (through a growth mindset approach) to fluently be able to retrieve key facts from their semantic memory.

The quality of our children's work, at every stage, is of a high standard. All learning is built towards an end point and at each stage of their education, we prepare our children for the next stage.

We ensure all our children read to a stage appropriate level and fluency through disciplinary literacy in DT lessons.

The impact of St Mary's DT curriculum is measured through the following:

- Assessment at the end of each unit of work
- Vocabulary and knowledge are assessed at the end of each lesson and at the end of each sequence
- Pupil voice
- Progress evident in children's books and record of experiences
- Seeking views of parents where appropriate