



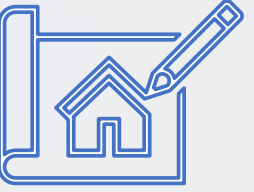
Subject  
Handbook

Design  
and Technology



**St. John the Baptist**  
Catholic Primary School

# Our DT Curriculum



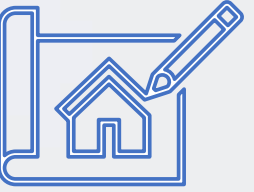
## Intent



At St. John the Baptist Catholic Primary School we believe that a high-quality Design and Technology should engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, invent and create their own designs.

Design and technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

# Our DT Curriculum



## Implementation



In our St. John the Baptist EYFS, D&T comes under the specific areas of learning “Understanding of the World” and ‘Expressive Art and Design’. Children are encouraged to make their own choices (e.g. choosing their own materials) through child initiated activities, and are led in the development of skills through adult directed tasks. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children’s interest and curiosity.

At Key Stages 1 & 2, the D&T curriculum is organised into themes that are taught in a termly block wherein children will be involved in investigative work and taught skills. Teaching methods to achieve the aims and objectives of this document will vary according to the classroom situation and the work planned by individual teachers. Each Year Group will have cohesive teaching sequences as the key start point for their class – teachers will adapt these annually (in line with the needs of their current class) to ensure that knowledge, skills, vocabulary and curricular links are appropriate for that cohort.

# Our DT Curriculum



## Impact

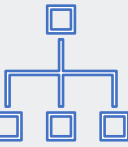


A wide range of strategies are used to measure the impact of our Design and Technology curriculum.

Our teaching sequence enables opportunities for formative assessments to be carried out by teachers during lessons, which will allow them to inform future planning. Additionally, summative assessments are carried out using evaluation. As a result of these assessment tools, pupils' misconceptions or gaps in subject knowledge, skills, behaviours and attitudes are addressed and additional teaching and support is provided.

In EYFS, staff professional judgements are valued. Assessments are formative so that they quickly make a difference to children's learning. They inform the provision of activities and experiences which develop children's skills and knowledge as well as giving opportunity for further practice

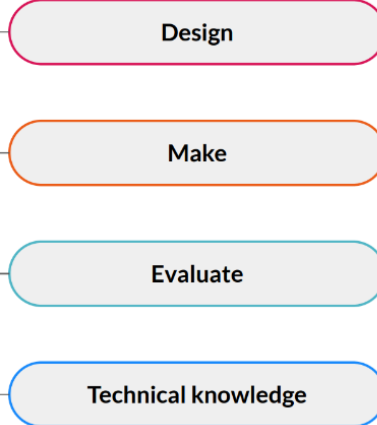
# Curriculum Rationale



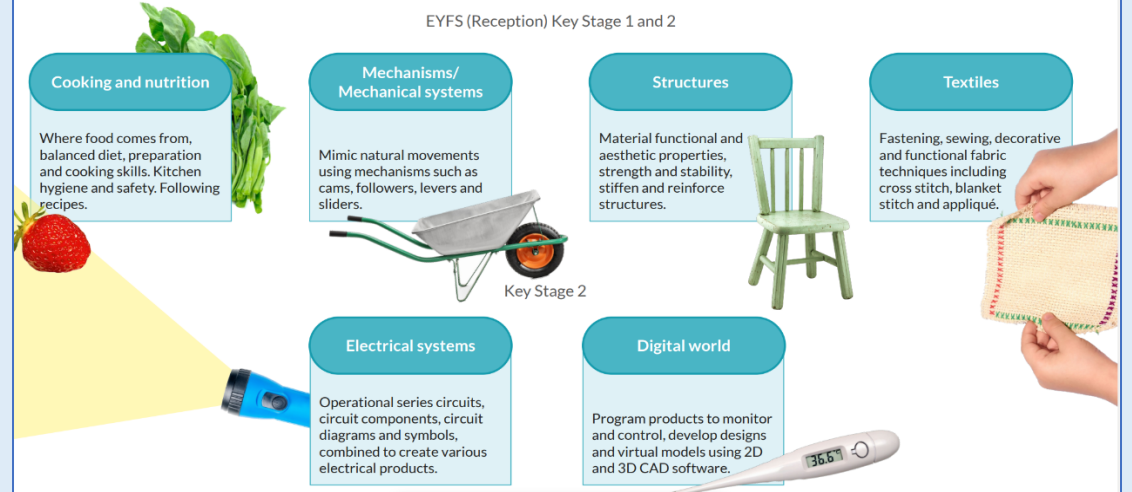
Our scheme of work fulfils the statutory requirements outlined in the **national curriculum (2014)**. The national curriculum Programme of study for Design and technology aims to ensure that all pupils:

- ★ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- ★ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- ★ critique, evaluate and test their ideas and products and the work of others.
- ★ understand and apply the principles of nutrition and learn how to cook. (\*This aim is linked to the four strands, but is primarily met by teaching units from our Cooking and nutrition key area)

We have identified four key strands which run throughout our scheme of work:



The six key areas are revisited each year, with Electrical systems and Digital world beginning in KS2. The areas enable all subject leads, specialists or non-specialists, to understand and make it easy for teachers to see prior and future learning for your pupils. You can see, at a glance, how the unit you are teaching fits into their wider learning journey.



## A spiral curriculum

The scheme of work has been designed as a spiral curriculum with the following key principles in mind:

- ✓ **Cyclical:** Pupils return to the key strands again and again during their time in primary school.
- ✓ **Increasing depth:** Each time the key strand is revisited it is covered with greater complexity.
- ✓ **Prior knowledge:** Upon returning to each key strand, prior knowledge is utilised so pupils can build upon previous foundations, rather than starting again.



## Is there any flexibility in the Kapow Primary Design and technology scheme?

Our Design and technology scheme of work is organised into units of four lessons (or six in EYFS: Reception).

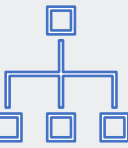
Within each unit, lessons must be taught in order as they build upon each other.

Across a single year group, units themselves do not need to be taught in the suggested order.

The flexibility in the order allows schools to adapt the planning to suit their school and to make use of cross-curricular links available.

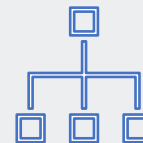
The suggested order in these long term plans takes account of the limited resources which may be available in school. Therefore the key strands have been distributed across the year so that all year groups are not requiring the same tools and equipment at the same time.

# Curriculum Overview



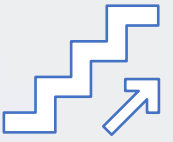
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
<b>EYFS: Reception</b>	<a href="#">Structures: Junk modelling</a> (6 lessons)	<a href="#">Textiles: Bookmarks</a> (6 lessons)	<a href="#">Structures: Boats</a> (6 lessons)		
<b>Year 1</b>	<a href="#">Structures: Constructing windmills</a> (Lesson 1 - 3; omit lesson 4)	<a href="#">Mechanisms: Moving story book</a> (Lesson 1 - 3; omit lesson 4) NB: Use the Storybook template (see Resources) for all pupils in Lesson 2 to save time.	<a href="#">Mechanisms: Wheels and axles</a> (4 lessons)	<a href="#">Textiles: Puppets</a> (4 lessons)	<a href="#">Cooking and nutrition: Fruit and vegetables</a> (4 lessons)
<b>Year 2</b>	<a href="#">Mechanisms: Fairground wheel</a> (4 lessons)	<a href="#">Cooking and nutrition: A balanced diet</a> (4 lessons)	<a href="#">Structures: Baby bear's chair</a> (Lesson 2 - 4; omit lesson 1)	<a href="#">Textiles: Pouches</a> (Lessons 1 - 3; omit lesson 4)	<a href="#">Mechanisms: Moving monster</a> (4 lessons)

# Curriculum Overview



	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Year 3	<p><b>Textiles: Cross stitch and appliqué</b>  <a href="#">Cushions</a> or <a href="#">Egyptian collars</a>                      (4 lessons)</p>	<p><b>Structures: <a href="#">Constructing a castle</a></b>                      (Lessons 2 – 4; omit lesson 1)</p>	<p><b>Cooking and nutrition: <a href="#">Eating seasonally</a></b>                      (4 lessons)</p>	<p><b>Digital world: <a href="#">Wearable technology</a></b> (Lessons 2-4; omit lessons 1 and 6)                      NB. This means that there is no evaluation in the unit.</p>	<p><b>Mechanical system: <a href="#">Pneumatic toys</a></b>                      (Lessons 2 – 4; omit lesson 1)                      NB. Watch the tea box in lesson 1, as a physical example.</p>
Year 4	<p><b>Mechanical systems: <a href="#">Making a slingshot car</a></b>                      (4 lessons)</p>	<p><b>Textiles: <a href="#">Fastenings</a></b>                      (Lessons 2-4; omit lesson 1)</p>	<p><b>Structures: <a href="#">Pavilions</a></b>                      (4 lessons)</p>	<p><b>Cooking and nutrition: <a href="#">Adapting a recipe</a></b>                      (4 lessons)</p>	<p><b>Electrical systems: <a href="#">Torches</a></b>                      (Lessons 2 - 4; omit lesson 1)</p>
Year 5	<p><b>Cooking and nutrition: <a href="#">What could be healthier?</a></b>                      (4 lessons)</p>	<p><b>Electrical systems: <a href="#">Doodlers</a></b>                      (Lessons 1 - 3; omit lesson 4)</p>	<p><b>Mechanical systems: <a href="#">Making a pop-up book</a></b>                      (Lessons 1 - 3; omit lesson 4)                      NB. Use the Jack and Jill book and moving parts template in Lesson 2, to reduce time.</p>	<p><b>Digital world: <a href="#">Monitoring devices</a></b>                      (4 lessons)</p>	<p><b>Structures: <a href="#">Bridges</a></b>                      (4 lessons)</p>
Year 6	<p><b>Structure: <a href="#">Playgrounds</a></b>                      (Lessons 1 - 3; omit lesson 4) NB. Skip the surrounding landscape and complete the playground structures in lesson 3.</p>	<p><b>Mechanical systems: <a href="#">Automata toys</a></b>                      (4 lessons)</p>	<p><b>Electrical systems: <a href="#">Steady hand game</a></b>                      (Lesson 2 - 4; omit lesson 1)</p>	<p><b>Digital world: <a href="#">Navigating the world</a></b>                      (5 lessons)                      NB: You could complete lesson 5 as an assembly or celebratory event.</p>	<p><b>Cooking and nutrition: <a href="#">Come dine with me</a></b>                      (4 lessons)</p>

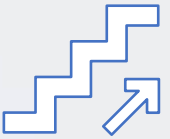
# Coverage of Skills



	Cooking and nutrition	Mechanisms	Structures	Textiles	Electrical systems	Digital world
Aside from Electrical systems and Digital world, which are taught in KS2 only, each of these acts as the focus for a unit within each year group						
<b>EYFS (Reception)</b>	Soup		Boats Junk modelling	Bookmarks		
<b>Year 1</b>	Fruit and vegetables	Moving storybook Wheels and axles	Windmills	Puppets		
<b>Year 2</b>	A balanced diet	Moving monsters Ferris wheels	Baby bear's chair	Pouches		
<b>Year 3</b>	Eating seasonally	Pneumatic toys	Castles	Cross stitch and appliqué	Electric poster	Electronic charm
<b>Year 4</b>	Adapting a recipe	Slingshot cars	Pavilions	Fastenings	Torches	Mindful moments timer
<b>Year 5</b>	What could be healthier?	Pop-up books	Bridges	Stuffed toys	Doodlers	Monitoring devices
<b>Year 6</b>	Come dine with me	Automata toys	Playgrounds	Waistcoats	Steady hand games	Navigating the world



# Coverage of Skills



Early Years Foundation Stage (Reception) Kapow Primary's units	Early years outcomes: Prime Areas Development Matters 2021 statements Early Learning Goals	Early years outcomes: Specific Areas Development Matters 2021 statements Early Learning Goals	Characteristics of effective learning
<a href="#">Structures: Junk modelling</a>	<b>Physical development</b> -Develop small motor skills so that they can use a range of tools competently, safely and confidently. <b>ELG:</b> Fine Motor Skills> Use a range of small tools, including scissors, paint brushes and cutlery.	<b>Expressive Arts and Design</b> -Explore, use and refine a variety of artistic effects to express 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. <b>ELG:</b> Creating with materials> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. <b>ELG:</b> Creating with materials> Share their creations, explaining the process they have used.	<ul style="list-style-type: none"> <li>✓ Playing and exploring</li> <li>✓ Active learning</li> <li>✓ Creating and thinking critically</li> </ul>
<a href="#">Food: Soup</a>	<b>Communication and language</b> -Learn new vocabulary. -Use new vocabulary throughout the day. <b>ELG:</b> Speaking> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. <b>Personal, social and emotional development</b> -Know and talk about the different factors that support their overall health and wellbeing: healthy eating. <b>ELG:</b> Managing self> Manage their own basic hygiene and personal needs, including... understanding the importance of healthy food choices. <b>Physical development</b> -Develop small motor skills so that they can use a range of tools competently, safely and confidently. <b>ELG:</b> Use a range of small tools, including scissors, paint brushes and cutlery.	<b>Understanding the world</b> -Explore the natural world around them. <b>ELG:</b> The Natural World>Explore the natural world around them, making observations and drawing pictures of animals and plants. <b>Expressive Arts and Design</b> -Explore, use and refine a variety of artistic effects to express ideas and feelings. <b>ELG:</b> Creating with materials> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	<ul style="list-style-type: none"> <li>✓ Playing and exploring</li> <li>✓ Active learning</li> </ul>

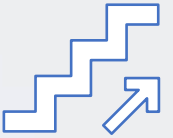
Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - Year 1				
		* <a href="#">Moving story books</a>	* <a href="#">Windmills</a>	* <a href="#">Puppets</a>	* <a href="#">Wheels and axles</a>	* <a href="#">Fruit and vegetable smoothies</a>
Design purposeful, functional, appealing products for themselves and other users based on design criteria.	Design	✓	✓	✓	✓	✓
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.	Design	✓	✓	✓	✓	✓
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	Make	✓	✓	✓	✓	✓
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make	✓	✓	✓	✓	✓
Explore and evaluate a range of existing products.	Evaluate	✓	✓		✓	
Evaluate their ideas and products against design criteria.	Evaluate	✓	✓	✓	✓	✓

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Lower key stage 2 - Year 3					
		* <a href="#">Eating seasonally</a>	* <a href="#">Castles</a>	* <a href="#">Cross stitch and applique</a>	* <a href="#">Pneumatic toys</a>	<a href="#">Electric poster</a>	* <a href="#">Wearable technology</a>
Understand how key events and individuals in design and technology have helped shape the world.	Evaluate				✓		✓
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Technical knowledge		✓				
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	Technical knowledge				✓		
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	Technical knowledge					✓	
Apply their understanding of computing to program, monitor and control their products.	Technical knowledge						✓
Understand and apply principles of a healthy and varied diet.	D M E	✓					
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.	D M E	✓					
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	D M E	✓					

\*Units that are included in the condensed curriculum

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Upper key stage 2 - Year 6					
		* <a href="#">Come dine with me</a>	* <a href="#">Automata toys</a>	* <a href="#">Steady hand game</a>	* <a href="#">Playgrounds</a>	* <a href="#">Navigating the world</a>	<a href="#">Waistcoats</a>
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Design	✓	✓	✓	✓	✓	✓
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.	Design	✓	✓	✓	✓	✓	✓
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Make	✓	✓	✓	✓	✓	✓
Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	Make	✓		✓	✓		✓
Investigate and analyse a range of existing products.	Evaluate		✓	✓	✓		✓

# Progression of Vocabulary



## Design and technology vocabulary

KS1 Year 1

### Mechanisms: Wheels and axles

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

### Food: Fruit and vegetables

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

## Design and technology vocabulary

KS1 Year 2

### Food: A balanced diet

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

### Mechanisms: Making a moving monster

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

## Design and technology vocabulary

KS2 Year 3

### Food: Eating seasonally

- Climate
- Dry climate
- Exported
- Imported
- Mediterranean climate
- Nationality
- Nutrients
- Polar climate
- Recipe
- Seasonal food
- Seasons
- Temperate climate
- Tropical climate

### Structures: Constructing a castle

- 2D shapes
- 3D shapes
- Castle
- Design criteria
- Evaluate
- Facade
- Feature
- Flag
- Net
- Recyclable
- Scoring
- Stable
- Strong
- Structure
- Tab
- Weak

### Textiles: Cushions / Egyptian collars

- Accurate
- Applique
- Cross-stitch
- Cushion
- Decorate
- Detail
- Fabric
- Patch
- Running-stitch
- Seam
- Stencil
- Stuffing
- Target audience
- Target customer
- Template

## Design and technology vocabulary

KS2 Year 4

### Electrical systems: Torches

- Battery
- Bulb
- Buzzer
- Cell
- Component
- Conductor
- Copper
- Design criteria
- Electrical item
- Electricity
- Electronic item
- Function
- Insulator
- Series circuit
- Switch
- Test
- Torch
- Wire

### Mechanical systems: Making a slingshot car

- Aesthetic
- Air resistance
- Chassis
- Design
- Design criteria
- Function
- Graphics
- Kinetic energy
- Mechanism
- Net
- Structure

### Digital world: Mindful moments timer

- Advantage
- Annotate
- Assemble
- Aesthetic
- Block
- Brand identity
- Brand
- Bug
- CAD
- Clipart
- Coding
- Criteria
- Debug
- Design
- Develop
- Disadvantage
- Display
- Ergonomic
- Feedback
- Form
- Function
- Join
- Logo
- Loop
- Mindfulness
- Model
- Net
- Product
- Program
- Prototype
- Research
- Script
- Sketchpad
- Test
- Timer
- User

## Design and technology vocabulary

KS2 Year 5

### Food: What could be healthier?

- Beef
- Cross-contamination
- Diet
- Ethical issues
- Farm
- Healthy
- Ingredients
- Nutrients
- Packaging
- Reared
- Recipe
- Research
- Substitute
- Supermarket
- Vegan
- Vegetarian
- Welfare

### Mechanical systems: Making a pop-up book

- Aesthetic
- Computer-aided design (CAD)
- Caption
- Design
- Design brief
- Design criteria
- Exploded-diagram
- Function
- Input
- Linkage
- Mechanism
- Motion
- Output
- Pivot
- Prototype
- Slider
- Structure
- Template

### Textiles: Stuffed toys

- Accurate
- Annotate
- Appendage
- Blanket-stitch
- Design criteria
- Detail
- Evaluation
- Fabric
- Sew
- Shape
- Stuffed toy
- Stuffing
- Template

## Design and technology vocabulary

KS2 Year 6

### Textiles: Waistcoats

- Accurate
- Adapt
- Annotate
- Design
- Design criteria
- Detail
- Fabric
- Fastening
- Knot
- Properties
- Running-stitch
- Seam
- Sew
- Shape
- Target audience
- Target customer
- Template

- Waterproof

### Electrical systems: Steady hand game

- Assemble
- Battery
- Battery pack
- Benefit
- Bulb
- Bulb holder
- Buzzer
- Circuit
- Circuit symbol
- Component
- Conductor
- Seam
- Design
- Design criteria
- Evaluation
- Fine motor skills
- Fit for purpose
- Insulator
- LED
- User

# Assessment



Kapow's assessment features offer teachers the ability to track and evaluate students' design process, creativity, and technical proficiency.

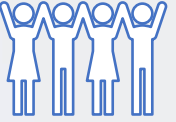
It allows staff to provide feedback, formally assess and generate comprehensive reports, helping them identify areas for improvement and celebrate students' achievements in D&T.



**Kapow**  
Primary

St. John the Baptist  
Catholic Primary School

# Inclusion



**1.Explicit instruction** - step-by-step modelling of what we want children to do, chunking the content and introducing new material in small steps

**2.Cognitive and metacognitive strategies** – opportunity to recall information to transfer it to our long-term memory

**3.Scaffolding** – pre-teaching, visual, verbal, written

Visual scaffolds may support a pupil to know what equipment they need, the steps they need to take, what their work should look like, an aid to access teaching and learning

Verbal scaffolds may involve re-teaching a tricky concept to a group of pupils, or using questioning to identify and address any misconceptions

Written scaffolds will be provided for a pupil to support them with an independent written task. It could be notes made on a whiteboard during a discussion, a word bank, a sentence starter, a writing frame, it could even be the child's own previous work used to support their recall.

Scaffolds provide temporary assistance to pupils so they can successfully complete tasks that they cannot yet do independently. We use scaffolds flexibly, evaluate their effectiveness and gradually remove them once they are no longer needed.

**4.Flexible grouping** - peer tutoring, Kagan grouping, flexible grouping

**5.Assistive technology** – to support delivery and recording of work

**Rosenshine's Principles of instruction:**

- Begin a lesson with a short review of previous learning
- Present new material in small steps with pupil practice
- Ask questions and check responses
- Provide models
- Guide pupil practice, provide scaffolding and support
- Encourage independent practice and check pupil understanding

All children receive a high quality and ambitious education

All learners have access to the same academic opportunities by offering a stimulating and ambitious curriculum, adjusted to the needs of pupils with SEND, so that they are able to reach their full potential

It is vital that our children are equipped with the tools needed to become independent learners

Our curriculum will ensure that all pupils gain a greater understanding of how they learn and the skills of resilience, collaboration, participation, investigation, thinking, creativity, motivation and reflection

We provide an accessible learning environment which is tailored to the individual needs of all pupils

Pupils are supported by adults following a cycle of assess, plan, do, review, making necessary adjustments to the curriculum to meet the needs of all pupils

All learners are respected and acknowledged for their personal contribution