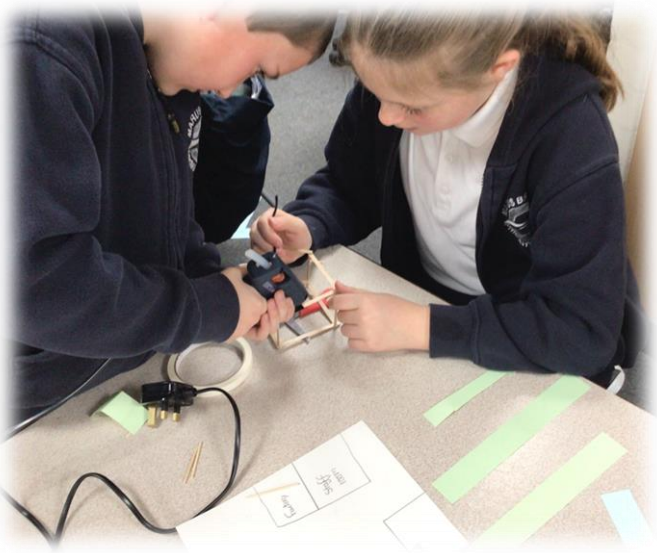
Subject Key Specification Policy



Design and Technology

Written by: Mrs. A Hurst and Mrs. N Capstick
Date: September 2024
Review Date: Autumn Term 2025

Contents

Rationale

Trust Level

This document was created in conjunction with DT subject leads across the primary arm of the Rowan Learning Trust (RLT). Through this collaborative approach, 'Stage Descriptors' were identified and agreed upon on a trust level. These descriptors provide a list of objectives which each school uses as their baseline/non-negotiable objectives, providing a moderated approach to the content delivered in DT lessons across the RLT. DT leads across the Trust worked together to ensure that these Stage Descriptors met the National Curriculum Aims and Objectives.

School Level

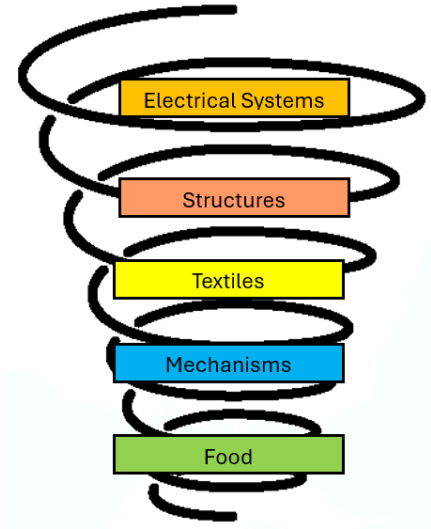
Using these Stage Descriptors, each school within the RLT has personalised their curriculum to suit their context and individual needs. Here at Marus Bridge Primary School, the Stage Descriptors act as a baseline to our 'End Points Document', which lists each objective to be taught within each individual topic. Topics and End Points have been selected with a great deal of purpose to reflect the intent of our curriculum at Marus Bridge and ensure that knowledge is sequential and interconnected.

DT Intent, Implementation and Impact

DT Intent

We are committed to providing our children with a **progressive and relevant** Design Technology education, to **prepare them for life in the wider world**. We believe that high quality DT lessons will inspire children to **think independently, innovatively and develop creative, procedural and technical understanding.** The skills developed in this subject can be **transferred across the curriculum**. Children will acquire and build upon a range of knowledge and techniques, working with mechanisms, structures, food, textiles and electrical systems. Children will be taught how to cook and apply the principles of nutrition and healthy eating, allowing them to maintain a healthy lifestyle. We will equip them with the crucial life skills of how to feed themselves and others affordably and well, in later life. By the time our pupils leave, they will be able to select resources, **take risks and solve problems, to become capable citizens.**

DT Implementation

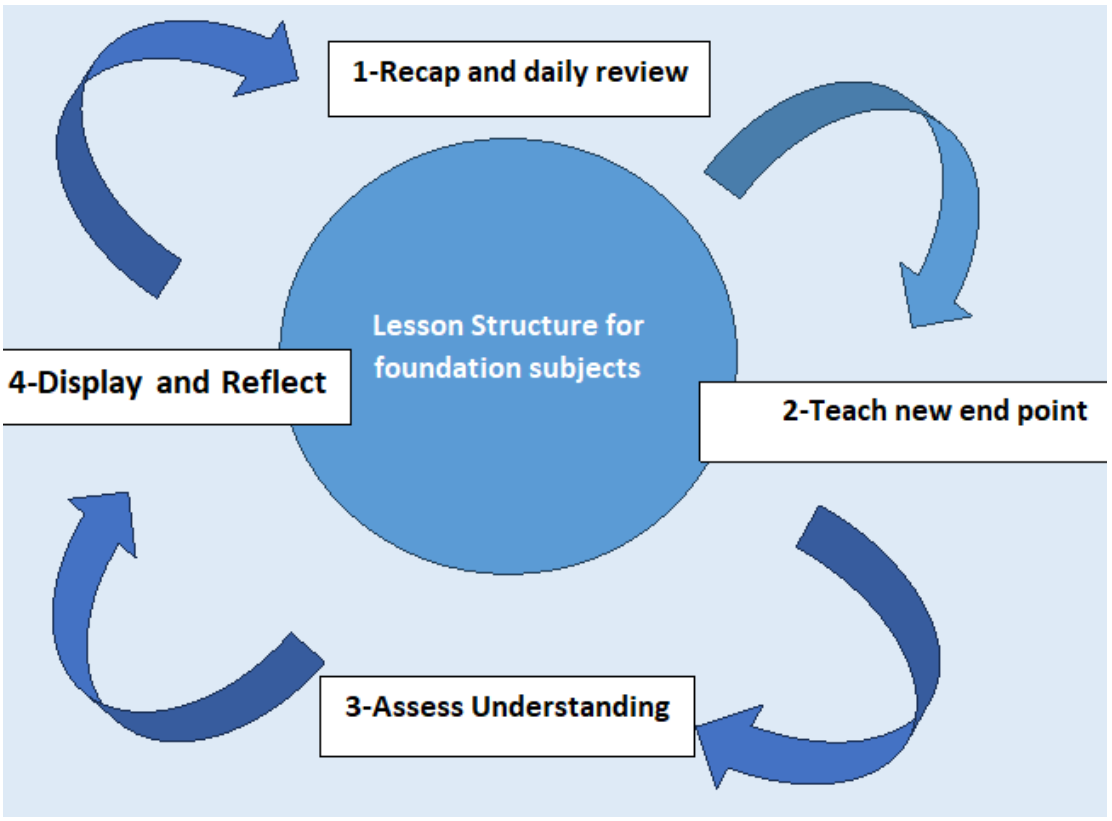


Across school, an **adaptation of the Kapow scheme** of work will be employed to ensure a consistent approach and progression of skills within the **key strands** of the DT curriculum. These 5 key strands (pictures on the right) occur and re-occur throughout each key phase, creating a spiral approach to our curriculum. The areas of mechanisms, textiles and structures will be revisited within each key stage to ensure that knowledge and skills are retained and developed overtime. Electrical systems will be taught twice during Key Stage Two. A focus will be placed on cooking and nutrition, which will be taught within each year group, with the children learning to prepare healthy and predominantly savoury dishes. Children will be taught about food provenance and seasonality. The long-term plan ensures that children build a repertoire of knowledge and techniques, such as building structures of increasing difficulty and progressing from simple mechanisms to mechanical systems. These are based on constructions in our locality, reflecting the importance of key events or individuals who have influenced designs which have shaped the world around them. Our pupils gain the practical skills in textiles to be able to perform everyday tasks in their future lives.

To support the acquisition of geographical vocabulary, tier 2 vocabulary has been carefully selected by the subject lead, and vocabulary reoccurs through the curriculum to support overlearning (See End Points document for **colour coding of vocabulary**). Opportunities for field work and geographical investigation are built into our curriculum.

In addition to subject specific knowledge, teachers also build children's disciplinary knowledge by exposing children to concepts such as data analysis, prediction making and asking geographical questions. Within each topic, the subject lead has identified the disciplinary outcomes to be taught.

Within DT lessons, the lesson structure below is followed across the school:



Our MB10 (see separate document) is also used across the breadth of the curriculum to ensure that cognitive learning strategies are used as a pedagogical tool to support effective teaching and learning.

DT Impact

Children are able to demonstrate an understanding of the purpose and user, in relation to the designs and products that they produce. Children will be confident when researching, designing, making and evaluating quality products, based on an initial design criteria. They will be able to select the appropriate skills, tools and techniques, working safely to solve a problem. Children can critique their own and others'* designs (*UKS2), assessing their final products and making suggestions for further adaptations and improvements. Children are able to select a range of healthy ingredients to enable them to cook a nutritious, healthy and affordable meal, with an awareness of seasonality and food provenance.

In terms of data, at the end of the 23-24 academic year, 86.1% of children reached the expected standards in DT. As a trust, our moderation process concluded that 80% is the average across the Trust.)

National Curriculum Aims and Objectives

National Curriculum Objectives	
KS1	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: 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. Cooking and Nutrition • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.
KS2	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: Design • 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 • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Make • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

	• 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 Evaluate • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products. Cooking and Nutrition • understand and apply the principles of a healthy and varied diet • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Stage Descriptors

Stage Descriptors (agreed upon on a Trust level)	
EYFS	• Safely use and explore a variety of materials, tools and techniques, experimenting with design, texture, form and function • Share their creations, explaining the process they have used • Make use of props and materials when role playing characters in narratives and stories • Return to and build on their previous learning, refining ideas and developing their ability to represent them • Create collaboratively, sharing ideas, resources and skills
KS1	Design: • Explore and evaluate a range of existing products • Know the purpose of their product • Design a product for a particular purpose or user • Communicate a design for their product Make: • Follow a simple design • Select and use appropriate tools, materials and techniques • Perform practical tasks, including cutting and joining • Create a product based on their designs • Follow safety rules and use equipment correctly Evaluate: • Identify strengths and weaknesses of a product • Discuss whether their product has met the design criteria Technical Knowledge: • Build structures that are strong and stable • Use mechanisms in their product Cooking and Nutrition: • Follow a simple recipe • Use the basic principles to prepare dishes • Show an understanding of where the food they are using comes from
LKS2	Design: • Identify the design features of existing products and how they are fit for purpose • Know the purpose of their product • Design a product for a particular purpose or user • Generate and communicate my design ideas in a variety of ways Make: • Follow their own design accurately • Select and use appropriate tools, materials and techniques, explaining their choices • Perform practical tasks, including cutting and joining, with greater precision • Create a product that reflects their original design • Follow safety rules and use a wider range of equipment correctly Evaluate: • Evaluate their ideas and products against their own design criteria • Discuss whether their product has met the design criteria Technical Knowledge: • Build more complex structures that are strong and stable • Understand and use mechanisms in their product Cooking and Nutrition: • Prepare and cook healthy dishes

	• Understand the principles of a healthy varied diet • Show an understanding of seasonality and where a range of food comes from
UKS2	Design: • Use their knowledge of a broad range of innovative, functional and appealing existing products to help generate their ideas for the intended purpose or user • Design innovative, functional and appealing products • Generate, communicate, develop and justify my design ideas in a variety of ways Make: • Select and use a wider range of appropriate materials and techniques with precision and accuracy, taking into account functional properties and aesthetic qualities • Create a product that reflects their original design with adaptations, if needed • Follow safety rules and identify potential dangers when using a wider range of equipment correctly Evaluate: • Evaluate their ideas and products against their own design criteria taking into account the views of others in order to improve their work • Discuss whether their product has met the design criteria • Discuss how key events or individuals have influenced some designs, inventions and products that have helped shape the world Technical Knowledge: • Apply their knowledge to strengthen, stiffen and reinforce complex structures • Understand and use a wider range of mechanisms in their product and justify choices • Understand and use electrical systems in their products Cooking and Nutrition: • Prepare and cook a range of healthy dishes • Use a range of cooking techniques when creating dishes • Apply the principles of a healthy and varied diet to the dishes they create • Know the source of a variety of ingredients

DT Planning at Marus Bridge

Long Term Plans

Each year group provides LTPs which give an overview of the learning/topics which will take place over the course of the year. These are shared with parents on our website.

Medium Term Plans

MTPs are completed by class teachers every half term. The MTP maps out the sequence of objectives to be taught within the DT topic for that half term. MTPs list the lesson objectives (presented as a WALT to the children) and documents the basic overview of the lessons. Weekly plans, PowerPoints and lesson resources are then saved in the staff Shared Area and audited by the subject and curriculum lead annually.

Scheme of Work

The following topics/scheme of work is followed here at Marus Bridge (an adaptation on the Kapow scheme to ensure the progression of 5 key strands: food, mechanisms, textiles, structures and electrical systems. This is to ensure that our curriculum is bespoke and progressive. Objectives for each topic can be found within the DT End Point Document.

	Autumn	Spring	Summer
Y1	Food **Fruit and Vegetables** **Healthy smoothies.** (Kapow Y1U1)	Mechanisms **Moving Story Book** **Sliders** (Kapow Y1U3)	Textiles **Puppets** **Sewing** (Kapow Y1U5)
Y2	Structures **Baby Bear's Chair** **Exploring stability and strengthening materials** (Kapow Y2U3)	Food **A Balanced Diet** **Healthy wraps** (Kapow Y2U2)	Mechanisms **Moving Monster** **Pivot, lever, linkages** (Kapow Y2U5)
Y3	Textiles **Cushions** **Sewing, cross-stitch and appliqué** (Y3U1)	Mechanical Systems **Pneumatic Toys** **Thumbnail sketches and exploded diagrams** (Kapow Y3U5)	Food **Eating Seasonally** **Healthy vegetable tarts** (Kapow Y3U3)
Y4	Food **Adapting a recipe** **Biscuit Bake Off (As part of a balanced diet.)** (Kapow Y4U4)	Structures **Pavilions** **Frames and structures** **(Link to locality: Haigh Hall/Wigan Park.)** (Kapow Y4U3)	Electrical Systems **Torches** (Kapow Y4U5)
Y5	Mechanical Systems **Automata** **Cam mechanisms** (Kapow Y6U2)	Food **What could be healthier?** **Healthy Bolognese** (Kapow Y5U1)	Textiles **Fastenings** **Sewing and fastening to create a book cover/ipad case.** (Y4U2)
Y6	Structures **Bridges** **Stability and strengthening materials. (Link to locality: Bridge over Scotsman's Flash)** (Kapow Y5U5)	Electrical Systems **Steady Hand Game** (Kapow Y6U3)	Food **Come Dine with Me** **3 ingredients, 3 courses** (Kapow Y6U5)

DT Assessment at Marus Bridge

In Reception, children are assessed against the Early Learning Goals for 'Understanding the World'. For children in Years 1 - 6, children are summatively assessed in DT at the end of each academic year on Arbour (our internal assessment system). These assessments are based on children's engagement, retention and articulation of the 'End Point' objectives for their year group. To inform these assessments, class teachers keep a log of children's achievement in each topic in their 'formative assessment' booklets, along with any notes to support their judgements.

The following assessment strategies support teacher observation and data collection:

- Informal quizzes
- Classroom questioning
- Daily Review analysis
- Questionnaires
- Self and peer assessments
- Presentations
- Speaking and listening activities
- Prior learning activities
- Knowledge Review Week activities
- End of unit formative assessments (completed a few weeks after the topic has finished)

At the end of each academic year, each child is assigned one of the following gradings on Arbour:

PKS (Pre-Key Stage)	Children have not been exposed to the full curriculum due to a significant SEND.
HNM (Has Not Met)	Children can't articulate answers to the majority of the questions listed in the End Point document for this subject.
EXS (Expected)	Children can articulate answers to the majority of the questions listed in the End Point document for this subject.
Gifted and Talented	Children show a specific talent for an aspect of the subject.

Resources:

The following resources are available to support the delivery of the DT curriculum at Marus Bridge:

- Knowledge Organisers for each topic (Adapted from the ones available on the kapow scheme)
- Topic planning resources (Collated in the planning folder)
- Topic-specific non-fiction books (stored in the school library)
- Access to a student kitchen for small group cooking activities.
- All equipment needed for each topic can be ordered by class teachers prior to their topic. Food orders can be submitted through the office.

Health and Safety

The children are made aware of the safe use and correct procedure involved when using tools and equipment in a learning environment and how to follow proper procedures for food safety and hygiene. The children are made aware of the need to be careful and to understand that their actions can affect others. The children build up a range of skills when using equipment to reduce unnecessary risk.

Ensure appropriate risk assessments have taken place when planning external visits (see school policy guidelines).

Safeguarding Considerations

Any external providers must provide evidence in the office of the Enhanced DBS before being left alone with pupils. They must also be reminded of the importance of not using mobile phones within the school.

Inclusion Considerations

The class teacher meets the needs of the most able and SEN by differentiating DT lessons through levels of support provided and adopting a mastery approach. Children identified as having additional Special Educational Needs may need greater differentiation of materials and tasks consistent with that child's I.E.P. (Individual Education Plan). More able children will be challenged and motivated by greater differentiation of challenge. The class teacher also aims to identify those children who may be gifted in DT and provide them with appropriate learning opportunities. All

children will be given opportunities to participate on equal terms in all DT activities and due consideration will be given to the principles of inclusion.

As a school, we use our 'SEND Toolkit for the Wider Curriculum' to ensure every child's needs are met in DT:

Non-Negotiable Adaptions
(should be considered in **EVERY** lesson):

1) **Reduce** the amount of knowledge to be learnt (3-4 pieces maximum)

2) **Concentrate on the content**, not the task

3) Link to **prior-knowledge**

4) **Limit admin tasks** (avoid spending too much time on admin which may hinder cognitive load – such as cutting out or writing long WALTs)

5) **Model activities** (I do – we do- you do)

6) **Consider IEPs/EHCPs** (Ie – consider how a hands-on activity might affect those with sensory needs and adapt appropriately. Consider whether buff printing will be helpful)

Possible Adaptions

(Select where appropriate for each subject/lesson):

Visual Aids Provide images to explain vocab/concepts rather than wordy definitions	**Key Vocabulary Banks** Using vocab from the End Points, reduce the number and send some key vocab home, or rehearse in school.	**Continuous Provision** Provide an alternative hands-on activity for the children to access.	**Pre-Teaching** Could a member of staff/a volunteer give some input before the lesson?
Mixed Ability Groups/Pairs Try to limit group size to 3 children to ensure that all children are actively involved. Give SEND children a specific role within the group.	**Print Longer WALTS** Depending on individual needs, this may help some SEND children to reduce cognitive load.	**Adapted Knowledge Organiser** Reduce the vocabulary and provide visuals.	**Differentiated Texts** If using texts/books as the source of information, differentiate the text/book. Use online sources for this for workload
Provide Additional Adult Support	**Provide Additional Brain Breaks**	**Simplified Recording Methods** Such as a reduced table in science, or a partially completed bar chart	**Differentiated Research Sources**
Consider Timings of Interventions Ensure that children do not miss a whole unit/input for intervention.	**Reduce Distractions** (In a lesson such as music, would excess noise prevent children from engaging? Could they complete the lesson in a quieter spot?)	**Adapt the Apparatus** Eg – provide larger equipment in PE etc…	**Individual Interests** Tap into individual interests to help represent information. Eg – a child who loves drawing might make a picture to represent what they've learnt in DT

Subject Monitoring:

The DT coordinator will complete one audit within each academic year to assess children's understanding and monitor teaching against the National Curriculum and End Point Objectives. This will focus on sampling children's work/books, child interviews and lesson drop ins/observations.

DT is audited in the summer term each year, and an action plan for the following 12-month period is devised in response to the audit.

In the spring and autumn terms, the DT lead will be given time (up to a full day each term if needed) to implement actions to support their action plan targets and provide support when needed. Support will be offered to any year groups who require additional information and guidance. This may be done by: discussing assessment methods; modelling lessons; inviting teaching staff to observe the DT coordinator; providing training or observing lessons and providing constructive feedback.

Governors are to be provided with an update each term in relation to the subject development. The Governor currently assigned to DT at Marus Bridge is Ruth Crossley.

The Rowan Learning Trust

Our logo was carefully chosen to represent the children, young people and adults in our learning community who strive for excellence through high aspiration and high expectation.

The Rowan Learning Trust
Registered Office: Hawkley Hall High School, Carr Lane, Wigan, WN3 5NY.
Company Number 8010464