

Kaleidoscope Multi Academy Trust Design Technology Curriculum

Intent

Kaleidoscope Multi Academy Trust wants all pupils to receive a high-quality Design Technology (DT) education providing the children opportunities to express themselves and to open their eyes to the world around them. Through building up a body of skills and knowledge they will be encouraged to develop a sense of excitement and curiosity about how things are designed and made and searching within themselves to explore and develop their own creativity/inventiveness.

We aim to

- Develop practical DT skills. Opportunities will be planned to ensure pupils in all year groups have experience of developing these skills progressively. Some skills will also be practised through focussed activities.
- Ensure the pupils acquire a rich DT vocabulary that they can use with accuracy.
- Develop young designers who can communicate their understanding verbally and in pictorial form.
- Ensure they become proficient in using a variety of materials
- Evaluate and analyse creative works using the language of design and technology

The national curriculum provides a broad range of DT skills and knowledge, which Kaleidoscope schools expect their children to know and remember. It is up to each school how this knowledge is conveyed, but Kaleidoscope have agreed the content and the core vocabulary that children will be expected to know and remember.

Early Years

In the Early years the Design Technology is taught through the Creating with materials strand of Expressive arts and design. The children learn about the world around them in their play and by adult led activities.

They behave in a technical way when they:

- Safely use and explore a variety of materials, tools and techniques in everyday practice and provision to develop their hand-eye co-ordination, proficiency and control.
- Share their creations, explaining the process they have used.
- Use resources such as, tweezers, nuts and bolts, clothes pegs, ribbon sticks, construction equipment (Lego), gardening tools, woodwork tools, puzzles and threading.

Key Milestones for EYFS Design Technology		
Autumn	Spring	Summer
• Model how to make salt dough. Introduce plasticine and putty in term 2. • Demonstrate how to use small tools for malleable materials such as, rolling pins, knives, wire. • Show how to use safely use equipment such as, scissors, staplers, glue sticks, glue guns, PVA glue, sellotape (including the use of dispensers), blue tack, split pins, paper clips, masking tape, double sided tape, string, hole punches, paste, nails, hammers or treasury tags. • Provide a range of recyclable materials to construct with and organise by shape. • Model how to effectively join recyclable materials using the above equipment and techniques such as, flange, slots and tabs through folding, cutting, and assembling. • Consider having a woodwork area with a working bench, vice and woodwork tools such as, saw, nails and hammers. Introduce staining. (Learning Through Woodwork by Pete Moorhouse and Play Scotland). • Demonstrate threading around cardboard shapes. • Model weaving on large fence/willow structures with ribbon. Refer to spatial reasoning within the mathematics planning. Honegger's Stages of Block Play. Vary scale (large and small) when modelling and building.	• Teach how to use clay, take care of clay and use clay tools. Model how to join using slip: clay glue, score and mould. • Consider red clay as it is more malleable and easier to take care of. • Show children how to engrave. • Enhance the clay area with animals, sticks, big and small balls. • Refer to spatial reasoning within the mathematics planning. Honegger's Stages of Block Play. • Show weaving up and over on cardboard	• Refer to spatial reasoning within the mathematics planning. Honegger's Stages of Block Play. • Choose one or more of the following: • Expose children to a sculptor. For example, Eva Ross Child, Barbara Hepworth, Henry Moore, Richard Long or Andy Goldsworthy. • Invite in a grandparent/parent who is a sculptor. • Visit an art gallery/museum (in person or virtually). Following the visit, set up a class art gallery/museum for parents to come in and see children's sculptures. • Demonstrate how to sew.

Knowledge

Working Technically

As the pupils progress through the curriculum they accumulate and connect both the substantive (facts) and disciplinary (DT specific) knowledge.

Design Technology is delivered through a series of modules spaced throughout the year with opportunities to revisit key concepts and disciplinary skills. This enables the children to embed learning in line with our pedagogical approach.

Each two year period will cover:	Structures	Mechanisms	Food technology	Textiles	Electronics
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Kaleidoscope MAT DT Plan					
Yr	Structures	Mechanisms	Food technology	Textiles	Electronics KS2
1/2	x	X x	X	x	
3/4	x	X x	X x	x	x
5/6	x	X X	X x	x	x

Key Vocabulary

Our DT curriculum is vocabulary-rich ensuring that the children gain a deep understanding of key technical vocabulary and terminology (tier 3 vocabulary). The MAT has agreed the following vocabulary should be learnt by the end each two-year period- Y2/Y4/Y6 to allow for schools with mixed year or two-year rolling programmes.

DT Vocabulary for Year 1/2			
Structures	Mechanisms	Food technology	Textiles
Mark	Wheels	ingredients	Template
Measure	Axles	Recipe	Fabric
Saw	Axle holders	Chop	Fabric pens/crayons
Cardboard corners	Dowelling	Chopping board	Scissors
Glue Gun	Sawing	Spread	joining
Join	pneumatic	Raw	Sewing -
Laminate	Functional	cooked	Tape measure
rigid	aesthetic	Grater	needle
	Balloon	plate	stapling
	tubing	Stirring	Cotton thread
	syringe	Mixing	velcro
		pouring	glue
		saucepans	pin
			decorate

DT Vocabulary for Years 3/4				
Structures	Mechanisms	Food technology	Textiles	Electronics
Sand paper	Levers	Scales	Function	Bulbs
45 degree angle	linkages	weigh	Stitching/sewing	Bulb holder
measuring	pivot	Amount	Fabrics (types of fabric)	Circuit
Centimetres	Fixed pivot	Basin/mixing bowl	Tacking	Components
Cross sectional drawing	Loose pivot	Sieve	Assemble	Series circuit
	Cams	Wooden spoon	Design	Cells/battery
	Symmetrical	Pastry brush	Stencil	wires
	Asymmetrical	Rolling pin	textiles	Current
				electricity

DT Vocabulary for Years 5/6				
Structures	Mechanisms	Food technology	Textiles	Electronics
Tensile	pulleys	Weigh - grams/kilograms	Purpose/intent	Bulbs
Resistant	driver	Measure millilitres/litres	Pinking shears	Bulb holder
prototypes	follower	Hygiene	Fraying	Circuit
	Drive belt	Temperature	textiles	Components
	gear		Fabric properties	Series circuit
			Detail/embellish	Cells/battery
			accurate	wires
			fastenings	Current
			Template/pattern	electricity
			Thimble	
			Seam allowance	

Learning Organisers

See 'Kaleidoscope MAT Design Technology Curriculum Learning Organiser'

Learning organisers are used:

- to convey the core knowledge in one place
- as a reference/starting point for staff (some schools may adapt the layout but key concepts and vocabulary must be learnt)
- to support questioning and retrieval
- in books to support participation of pupils
- to highlight key tier 3 subject specific vocabulary
- to support parents understanding of what their children are learning (for some topics)

See Kaleidoscope Design Technology Curriculum document.

Implementation

Our DT curriculum is taught in each year group in modules that enable pupils to study in depth key technological understanding, skills and vocabulary. Each module builds on prior learning and these are revisited throughout the academic year to deepen pupils understanding and embed learning.

Through teacher modelling and planning children are given opportunity to learn and use key vocabulary. The Kaleidoscope pedagogical approach is used in all lesson formats – retrieving and building on what the pupils already know, explaining new content including key vocabulary. Pupils are 'scaffolded' to attempt new learning and then apply new learning independently.

Impact

The impact of our curriculum is measured informally through quizzes, discussions and observations of pupils. It is measured more formally through teacher assessment against the Key Milestones.

Key Milestones

See 'Kaleidoscope MAT DT Milestones'

Kaleidoscope has produced key milestones for each pair of years (Y2/Y4 and Y6) so that staff are clear whether pupils are performing at the expected standard. The key vocabulary is clearly identified.

Subject leaders will:

- conduct work scrutiny to see an increasing understanding of technological concepts and knowledge.
- conduct pupil conferencing where pupils will be measured against the key milestones and will use technical vocabulary, talk about technical concepts and skills and explain how learning builds on previous knowledge.