



## **Kaleidoscope Multi Academy Trust Computing Curriculum**

### **Intent**

Kaleidoscope Multi academy trust intends that all pupils will receive a high-quality modern, ambitious and relevant computing education, to enable them to become active participants in the digital world. Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

We aim to:

- Develop good computing skills. Opportunities will be planned to ensure pupils in all year groups have experience of developing these skills progressively. Some skills will be Explicitly taught and practised through focussed activities.
- Ensure the pupils acquire a rich computing vocabulary that they can use with accuracy.
- Develop young people who can communicate their understanding verbally and practically.

Our scheme of work for computing is adapted from the 'Teach Computing' curriculum and covers all aspects of the National Curriculum in a progressive and spiral way. IT has been created by subject specialists and based on the latest pedagogical research. It provides an innovative progression framework where computing content (concepts, knowledge, skills and objectives) have been organised into interconnected networks across three strands: computer science, information technology and digital literacy, with the aims of the curriculum reflecting this distinction.

We have selected units which cover a broad range of computing 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

## Knowledge

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

Computing 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.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Technology around us  CS & AL	Information technology around us  NW & CS	Connecting computers  NW & CS	The internet  NW & SS	Systems and searching  NW & CS	Variables in games  PG & DD
Moving robot  AL & PG	Digital photography  ET & CM	Branching Databases  DI & ET	Audio production  ET & CM	Video production  PG & CS	Web page creation  CM & DD
Grouping Data  DI & AL	Programming quizzes  PG & DD	Events and actions  PG & DD	Repetitions in shapes  AL & PG	Selection and physical computing  AL & PG	3D Modelling  ET & CM

Teach Computing Taxonomy Coverage	
Key	
AL	Algorithms
CS	Computing systems
CM	Creating Media
DI	Data and information
DD	Design and development
ET	Effective use of tools
NW	Networks
PG	Programming
SS	Safety and security

## Key Vocabulary

Our computing curriculum is vocabulary-rich ensuring that the children gain a deep understanding of key computing 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.

<b>Computing Vocabulary for Years 1 and 2</b>				
technology	Bee-Bot	object	actions	Background
computer	forwards	label	algorithm	Camera
mouse	backwards	group	blocks	Capture
trackpad	turn	search	build	Compose
keyboard	clear	image	change	Device
screen	go	property	code	Digital
double-click	commands	colour	command	Editing
typing	instructions	size	compare	Filter
Information technology (IT)	directions	shape	debugging	Flash
barcode	left	value	decomposition	Focus
scanner/scan	right	data set	design	Format
	route	more	evaluate	Framing
	plan	less	features	Image
	algorithm	most	match	Landscape
	program	fewest	modify	Lighting
		least	outcome	Light source
		the same	prediction	Photograph
			program	Portrait
			project	Subject
			run	
			sequence	
			sprite	
			start	

<b>Computing Vocabulary for Years 3 and 4 (Bold vocabulary has been previously introduced)</b>						
digital device	attribute	Scratch	<b>text</b>	internet	Logo program	audio
input	<b>value</b>	programming	<b>images</b>	network	turtle	Microphone
process	<b>table</b>	<b>blocks</b>	<b>advantages</b>	router	commands	Speaker
output	objects	command	<b>disadvantages</b>	<b>security</b>	code snippet	Headphones
program	<b>Branching database</b>	code	<b>purpose</b>	switch	algorithm	Input device
digital	<b>objects</b>	<b>sprite</b>	<b>communicate</b>	server	debug	Output device
<b>non-digital</b>	<b>separate</b>	<b>logic</b>	<b>font</b>	wireless access point (WAP)	pattern	sound
<b>connection</b>	<b>structure</b>	<b>extension block</b>	<b>style</b>	website	repeat	podcast
network	selecting	<b>sequence</b>	<b>landscape</b>	web page	count-controlled	edit
switch	information	<b>event</b>	<b>portrait</b>	web address	loop	trim
server	<b>decision tree</b>	<b>task</b>	<b>orientation</b>	routing	value	align
wireless access point (WAP)		<b>design</b>	<b>placeholder</b>	web browser	trace	layer
cables		<b>run the code</b>	<b>template</b>	World Wide Web	decompose	record
<b>sockets</b>		<b>errors</b>	<b>layout</b>	<b>content</b>	procedure	import
		<b>test</b>	<b>content</b>	<b>links</b>		playback
		resize	<b>desktop publishing</b>	<b>files</b>		selection
		algorithm	<b>copy</b>	<b>download</b>		Load
		bug	<b>paste</b>	<b>sharing</b>		Export
		debug		<b>permission</b>		MP3
		code		information		
				<b>accurate</b>		
				advert		

Computing Vocabulary for Years 5 and 6 (Bold vocabulary has been previously introduced)					
system	microcontroller	Video	variable	Website	Tinker CAD
connection	USB	audio	change	Web page	2d shapes
digital	components	camera	name	Browser	3D shapes
input	connection	talking head	value	Media	rotate
process	infinite loop	panning	set	Hypertext markup language (html)	duplicate
storage	output component	close up	design	Logo	group
output	motor	video camera	event	Layout	placeholder
search	repetition	microphone	algorithm	Header	choose
search engine	count-controlled loop	lens	code	External	combine
refine	crumble controller	mid-range	task	Copyright	construct
index	switch	long shot	artwork	Fair use	evaluate
bot	LED	moving subject	program	Home page	modify
ordering	Sparkle	side by side	project	Preview	range
links	crocodile clips	angle (high, low, normal)	test	Device	
algorithm search engine optimisation (SEO)	program	static	debug	Navigation	
web crawler	Input	zoom	improve	Hyperlink	
content creator	output	pan	evaluate	Subpage	
selection	action	tilt	share	Hyperlink	
ranking	debug	storyboard	assign	Embed	
	circuit	filming	declare		
	cell	review			
	buzzer	import			
	Selection	split			
	condition	trim			
	outcomes	clip			
	algorithm	edit			
	task	delete			
	design	reorder			
	run	export			
	setup	evaluate			
	operator	share			

## **Learning Organisers**

See document 'Kaleidoscope MAT Computing 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)

## **Implementation**

Our Computing curriculum is taught in each year group in modules that enable pupils to study in depth key computing 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**

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 in the Learning Organisers.

Subject leaders will:

- Conduct work scrutiny which look for an increasing understanding of computing concepts and knowledge.
- Conduct pupil conferences where pupils will be measured against the key milestones and will use computing vocabulary, talk about computing concepts and explain how learning builds on previous knowledge.