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LET YOUR LIGHT SHINE

1. Modular knowledge approach

Computing is taught in weekly sessions and links to our thematic curriculum where appropriate. Sessions are taught within three strands: computer science, information technology and digital literacy. Pupils are given the opportunity to use their computational skills in other areas of the curriculum such as Maths, Science and DT.

Computing is taught across each year group in units that enable pupils to study in depth key scientific understanding, skills and vocabulary. Each unit aims to activate and build upon prior learning, including EYFS, to ensure better cognition and retention.

Each unit is carefully sequenced to enable pupils to purposefully layer learning from previous sessions to facilitate the acquisition and retention of key computing knowledge for all three areas of the computing curriculum- computer science, information technology and digital literacy.

Each area of the computing currciulm is revisited either later in the year or in the following year as part of a spaced retrieval practice method to ensure pupils retain key knowledge and information.

Do Nows, hinge knowledge retrieval and Reteach weeks are also used to support retention of knowledge.

2. Developing Disciplinary knowledge and skill development

As well as ensuring pupils are taught key knowledge, each unit is designed to offer pupils the opportunity to explore the different areas of the computing curriculum and develop their skills as user and developers of technology through exploring different hardware and software, designing and creating their own computer programs, and organising, storing, manipulating and retrieving digital content . The knowledge and understanding of the complexity and capabilities of computing spirals incrementally as the child progresses through our school. The expectation in the production of data and information becomes more complex through KS1 and KS2. E-Safety is age appropriate and represents the levels of exposure to online communication at each key stage. Our computing curriculum is divided into the following threads, each of which play a vital part within gaining a good knowledge and understanding of computing: algorithms and programs, digital media, digital communication, online research, data handling, digital literacy and E-safety. Each of these components contribute the children's computational thinking and gives them an understanding of not just the influence computing has on us, but also the influence we can have on computing.

3. Lesson structure

Feature	Function
Do Now	To recall previous learning so children know and **remember** more.
Hinge Knowledge Retrieval	Taken from the whole school **knowledge progression for computing** recall/retrieving knowledge so all children meet **end points** in order to pivot to their next years learning.
I (Model/Guided Discourse)	The class teacher will **model explicitly** how to achieve the lessons learning objective and empower children to with the knowledge required to do so. Name the steps need to achieve the learning objective.
We	Children are provided with an opportunity to **rehearse** the lesson objective with other children to embed the skill being taught with **support from peers**. This allows the class teacher to circulate with purpose and **check whole class understanding** through QFT methods whilst all children are on task.
You	All children can **independently apply** their new skill into their own work to demonstrate they have understood the learning objective.
Exit ticket (cumulative)	At the end of every lesson a question is given to each children which **directly links to the learning objective** as lessons build in each unit the ticket become cumulative so children as once again having and opportunity to **recall/retrieve previous learning** so it because embed in their memory and not lost in their short term.

4. Knowledge organisers and key vocabulary

Accompanying each unit is a Knowledge Organiser which contains key vocabulary, key questions, outlines key learning and contains examples which all pupils are expected to understand and retain.

Knowledge organisers support the elaboration and detail which help pupils acquire the content of each module. They support vocabulary and concept acquisition through a well-structured sequence that is cumulative. Each Knowledge organisers includes questions that link back to the cumulative quizzing, focussing on key content to be learnt and understood.

Knowledge vocabulary is listed and defined on each knowledge organisers and supports children in using tier three subjects specific language when discussing their learning. Key vocabulary is shared every lesson and included in each lesson journal record, they practice through using it in context when discussing learning. Key learning matches end points laid out in the computing knowledge progression allowing children and teachers clear identification of key knowledge and skill that need to be required during each unit.

4. Knowledge organisers and key vocabulary

Key vocabulary is noted in journals and taught explicitly at the beginning of every lesson and referred the implicitly throughout each lesson when discussing learning.

5. Formative Assessment

Assessment for learning strategies

Think-pair-share, cold calling, strategic questioning, rally robin.

Hinge Points

Class teacher identifies the hinge points in the lessons to check all children understand before moving on to prevent misconceptions or gaps in learning.

Exit Tickets

Links directly to each lesson learning objects assessing everyone's individual understanding every lesson.

Cumulative assessments

Exit tickets are completed cumulatively supporting children to recall previous learning so they can learn and remember more. Hinge knowledge questions are also repeated across the year and taken using end points from the knowledge progression document quick recall style question to prompt memory and identify gaps for individuals.

6. Summative Assessment

End of unit assessments

End of unit assessments are completed each half term at the end of each unit to assess children's understanding. They are made up of the exit tickets completed at the end of each lesson.

End of term assessments

End of term assessment are completed at the end of Autumn, Spring and Summer which assess children understanding from units they have complete that year and key hinge knowledge from previous years in the style of multiple choice and explanation questions.

End of year assessments

End of years assessments are made up of end of unit and end of half term assessments from across the year. Children will also complete a set task to showcase to knowledge and skills they have learnt in that particular year group.

Reteach weeks

During reteach week children a retaught a lesson from a the previous unit. This lesson is identified through gap analysis of the assessment results to identified the question with the least correct answer their for identify a gap which needs to be closed.

Retrieval Weeks

During retrieval week children complete a lesson which enables them to retrieve key knowledge related to the knowledge progression in order to help them retrieve essential knowledge to help them achieve the relevant end point.

Autumn Anchors

Teachers communicate with their classes teacher for the next academic year in regards to any gaps or areas of weakness that need to be filled before starting the next academic years learning.

7. Supporting pupils with SEND

We aim for all computing lessons and learning questions to be accessible to all pupils. Pre-teaching of specific computing vocabulary provides all children with the opportunity to demonstrate an understanding of subject specific language. The use of iCompute unit plans allow teacher to be aware of changes that can be made to the lesson to make it easier or more difficult in order to make every pupil achieve each lessons learning objective.

As part of termly SEND reviews, the SENDCO uses the foundation assessment tracker to identify pupils where Tier 1 and Tier 2 intervention isn't effective in ensuring mastery for all in order to provide tailored CPD and training to staff.

8. Reading and vocabulary instruction

We want our children to have an expansive vocabulary and through teacher modelling and planning, children are given opportunity to use and apply appropriate vocabulary. Computing language is taught and built upon with vocabulary being a focus. Utilising research, the school explicitly teachers Tier 2 and Tier 3 vocabulary in all subjects.

Vocabulary progression has been mapped out for nursery to year 6 to ensure a purposeful and structured learning of relevant tier 2 and 3 vocabulary. Vocabulary is built upon year by year to equip children with the subjective specific vocabulary their need to discuss their computing learning to demonstrate their understanding as users of technology and creators of technology.

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Screen	Screen	Algorithm	Algorithm	Simulation	Algorithm	Sequence	Sequence
Mouse	mouse	Instructions	Instructions	Rules	Decomposition	Selection	Selection
Keyboard	image	Sequence	Sequence	Choice	Sequence	Condition	Condition
Camera	keyboard	Program	Program	Variables	Program	Repeat	Repeat
Photograph	paint	Debug	Debug		Debug	Boolean	Boolean
	words	Repeat	Repeat		Abstraction	Variable	Variable
	word	True	Test			Coordinates	Procedure
	banks	False				X – Y axis	Test
							Debug

9. Computing in the EYFS

At Hawkesley we have one curriculum. However, the end points for EYFS and Years 1 – 6 come from different places. For each subject we have broken down end points into component parts to create one cumulative journey from Nursery to the end of Year 6. The school has created and adopted bridging documentation to manage the difference in expectations of early learning goals and knowledge needed to successfully integrate into the National Curriculum.

Within the revised EYFS statutory framework, the Technology strand within Understanding the World has been removed. However, there are opportunities within each area of the framework to enable teachers to effectively prepare children for studying the computing curriculum.

Each EYFS medium term plan has a subject overview document that allows curriculum leaders to monitor the activities that link directly to each curriculum areas.

Comptuing in the Early Years can present as: taking a photograph with a camera or tablet, searching for information on the internet, playing games on the interactive whiteboard, exploring an old typewriter or other mechanical toys, using a Beebot, watching a video clip, listening to music.

10. Celebrating diversity

We are committed to ensure that our curriculum reflects the diversity of British society. Anyone can be great at Computer Science whatever their gender, upbringing, ethnicity, sexuality, age... Teaching London Computing have created a range of posters which celebrate diversity in computing. These inspirational people are shared with the children as Hawkesley.

In Computing, the children are exposed to a variety of LGBTQ+, disabled and members of the GM/BME (Global Majority and Black and Minority Ethnic) including:
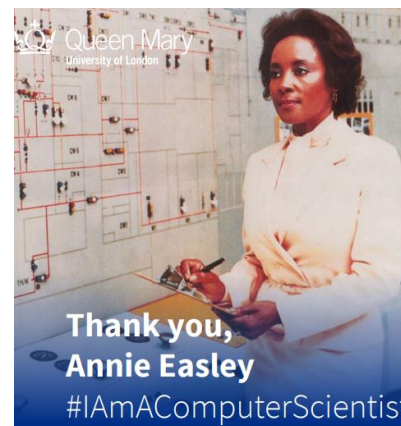

Thank you, Juliana Rotich
#IAmAComputerScientist
You co-developed a platform that saves lives and supports democracy across the world.

Thank you, Abdigani Diriye
#IAmAComputerScientist
Your work on data mining and visualising information help us see things more clearly.
Find out about Abdigani's Somali and Somaliland boot camps.

Thank you, Annie Easley
#IAmAComputerScientist
Your code was used to fly rockets and laid the foundations for space shuttle launches.
Find out about Annie's work in the 1960s.

Thank you, Shwetal Shah
#IAmADigitalActivist
For representing young women in technology with governments and multinationals and championing creativity in computing.
What cat-themed game that teaches programming did Shwetal work on?

BDMAT Birmingham Diocesan Multi-Academy Trust
Promoting diversity across our Trust

BDMAT Birmingham Diocesan Multi-Academy Trust
Proud to support our LGBTQ+ staff, pupils & families

BDMAT Birmingham Diocesan Multi-Academy Trust
A Disability Champion

11. Staff CPD

Staff receive regular quality first teaching coaching from senior leaders to support with the implementation of all areas of the curriculum. The computing lead is currently looking into options to support with understanding around delivering the subject follow a survey taken by staff. Support from the local computing hub will support with this.

- Audit

- Briefing training based on audit needs

- Curriculum leader coaching for target teachers

- Detailed MTPs

- Access to unit support through iCompute website and new videos directed at teachers to support understanding for each individual lesson