Ofsted Guide

for Computing

The 3 I's and Deep Dive

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iCompute

Primary Computing

Contents

Ofsted Framework

The Ofsted Inspection Framework intends to ensure that inspection focuses on the real substance of education: the curriculum.

Schools in England have a statutory duty to provide a computing education to pupils from the age of 5. Leaders need to demonstrate the provision of quality of education in computing through curriculum **intent**, effective **implementation** and curriculum **impact**.

Intention

iCompute supports schools in teaching computing effectively and well by providing a rich, broad and balanced computing curriculum fully mapped to the National Curriculum for Computing and Key Stage 1 and 2. It offers pupils a computing education designed for mastery using research-led computing pedagogies and covers all three strands of the computing curriculum:

- Computer Science
- Information Technology
- Digital Literacy (incl. eSafety)

A positive teacher mindset and strong subject knowledge is key to student success in computing. iCompute aims to enhance pupils' enjoyment, resilience, understanding and attainment in computing by empowering and equipping schools to deliver a quality computing education with comprehensive computing schemes of work that are designed for computing mastery.

Mastery in computing means acquiring a deep, long-term, secure and adaptable understanding of the subject. It is demonstrated by how skillfully a child can apply their learning in computing to new situations in unfamiliar contexts.

Every child can enjoy and succeed in computing when offered appropriate learning opportunities. iCompute uses growth mindset and problem-solving approaches that enable pupils to develop resilience, persistence and confidence. All children are

encouraged to believe in their ability to master computing and are empowered to succeed through curiosity, tinkering and perseverance.

Pupils are taught through whole-class interactive teaching with pupils working together on the same lesson content at the same time. Lessons are sequenced so that concepts are developed in logical steps with particular attention given to fundamental concepts. This ensures that all children can master concepts before moving to the next stage, with no pupil left behind.

Curriculum equity is offered with all pupils being given the time and opportunity to fully understand, explore and apply skills and ideas in different ways, in different situations and in different subjects. This enables pupils to fully grasp a concept and understand the relevance of their learning.

Implementation

Subject leaders are supported by iCompute with a Subject Leader's Toolkit offering guidance on curriculum design, research-led pedagogies for the teaching of computing and how to develop effective subject leadership.

iCompute offers expertise in primary computing education and has the knowledge and practical skills to design primary computing curricula. It supports schools around the world in implementing computing curricula fully matched to the National Curriculum.

iCompute supports schools to develop computing by providing detailed guidance and a range of tools that enable subject leaders to audit and evaluate computing subject knowledge and skills of staff throughout the school. It also provides resources to help improve subject leadership and action planning for improving teaching and learning in Computing in line with centrally prescribed aims; which includes indentifying CPD needs.

iCompute was the first commercial scheme of work in the UK offering full coverage of the National Curriculum and is written by a Computer Scientist and CAS Primary Computer Science Master Teacher. Nominated for prestigious BETT and ERA Awards each year since 2014 for innovation and computing curriculum resources, it is trusted and used by thousands of schools around the world. iCompute has a proven record of raising standards and attainment in computing.

iCompute supports schools to secure progression and attainment through curriculum resources that include a comprehensive assessment toolkit with guidance about how to assess computing, evidence pupil progression and record data. This includes:

- Long, medium and step-by-step short-term planning fully mapped to the National Curriculum for Computing at Key Stage 1 and Key Stage 2
- A model of curriculum progression throughout the primary phase for each strand of the National Curriculum
- Self assessment resources for pupils – 'iCan' statements for each unit of work
- Comprehensive tests and tasks (if subscribed to our Assessment Tests & Tasks pack) for core units fully matched to the National Curriculum
- Pupil progress trackers informed by end of unit assessment guidance and (if subscribed to our Assessment Tests & Tasks pack) associated end of unit assessment tasks and diagnostic tests. Divided into the three curriculum strands, the trackers enable leaders' to demonstrate sufficient curriculum coverage and shape future learning by being able to identify any gaps in pupil knowledge, understanding and skills and take appropriate action.

Planning guidance is given along with suggested timetabling, medium term planning for each unit and detailed step-by-step short-term lesson plans. This enables leaders to monitor curriculum delivery and ensure that what is being taught aligns with curriculum design.

Impact

iCompute's curriculum is designed to build on prior learning and lessons are sequenced throughout the primary phase for progression where all learning builds towards clearly defined end points:

- end of unit
- end of year
- end of Key Stage

The curriculum, assessment toolkit and comprehensive, expert, guidance offered by iCompute enables leaders to ensure that all pupils learn the curriculum.

Assessment data collected as part of teaching enables each pupils' progress to be monitored and is based on the Progression Pathways Assessment Framework designed by Computing At Schools (CAS) and the BCS (The Chartered Institute for IT) - groups responsible for the drafting of the National Curriculum for Computing on behalf of the

DfE; but iCompute has much greater depth to further support accurate assessment and progression planning. Assessment data allows teachers to see, at a glance, where pupils are in their learning; to identify any gaps in coverage, knowledge, understanding and skills and to inform the curriculum and future teaching. The assessment toolkit includes pupil progress trackers for pupils with SEND based on the revised P-Scales for Computing compiled by 'CAS Include' which have been adapted by iCompute for greater depth.

The curriculum offers equity for all groups and it is intended that all pupils access it. By following and monitoring the curriculum and its delivery leaders' are supported by iCompute in ensuring that all teachers teach the full range of lessons for each year group and that they are taught in accordance with the planning to ensure rigor, challenge and inclusion.

Research Review

OFSTED's 2022 review explores the literature relating to the field of computing education. Its purpose is to identify factors that can contribute to high-quality school computing curriculums, assessment, pedagogy, and systems.

It explores the forms of knowledge that pupils need to learn in order to make progress in computing. It draws a distinction between declarative and procedural knowledge in computing and identifies that.

"... [a] high-quality computing education may have the following features

- The planned curriculum includes a breadth of knowledge relating to computer science, information technology and digital literacy.
- Declarative knowledge ('knowing that') and procedural knowledge ('knowing how') are identified, sequenced and connected in the curriculum.
- Skilful use of technology is underpinned by procedural and declarative knowledge.

Skills/knowledge/vocabulary come immediately before and after particular year groups and have depth in terms of how declarative and procedural knowledge builds throughout the year. iCompute documentation contains clear progression of skills, knowledge and vocabulary throughout all key stages.

Declarative and procedural knowledge

Declarative knowledge is often referred to as conceptual knowledge in the review literature and that it "consists of facts, rules and principles and the relationships between them. It can be described as 'knowing that'." Procedural knowledge is knowledge of methods or processes that can be performed. It can be described as 'knowing how'."

At iCompute, we think of knowledge components in terms of **know that... understand that... know how...**

More often than not ‘know hows’ are enabled by ‘know thats and understand thats’

- ‘Know that…’ might precede a defined fact – e.g. ‘know that a variable is a value that can change.’
- ‘Understand that…’ might precede a defined concept – e.g. ‘understand that decomposition is splitting a problem down into smaller parts'.
- ‘Know how…’ might precede a defined ‘skill’ – e.g. ‘know how to program a procedure in Scratch'

Procedural Knowledge refers to the knowledge of “how to” perform a specific skill or task.

Declarative Knowledge involves “knowing that” and “understanding that”.

Our Curriculum is well planned and sequenced, it contains the right knowledge in the right order, providing pupils with the building blocks of what they need to know and be able to do to succeed in Computing. Big concepts, procedural and declarative knowledge are reencountered throughout the computing curriculum. It is carefully designed to build upon prior knowledge and skills. Each unit has detailed end-of-unit criteria set out in the form of the examples given above. We also provide retrieval practise, knowledge organisers and detailed progression guides in all strands of the computing curriculum. These distinguish between declarative and procedural knowledge through use of language:

- 'know that' (declarative)
- 'understand that' (declarative)
- 'know how' or ‘I can’ (procedural).

Deep Dive

Ofsted will be "deep diving" into a selection of subjects during their inspections with the "*curriculum at the heart of inspection*" focusing on curriculum intent, implementation and impact. This aims to help inspectors gather evidence about what pupils know, remember and understand.

The deep dive will involve **six focus areas** which are:

1. The school's understanding of progress in computing and how that informs its approach to the curriculum
2. The extent to which teaching supports the goals of the computing curriculum
3. The effectiveness of assessment in computing
4. The extent to which there is a climate of high subject expectations where a love of the subject can flourish
5. The quality of systems and support for staff development
6. The extent to which whole-school policies affect the capacity for effective computing education

Inspectors will generally use the following as sources of evidence in making judgements:

- interviews with subject lead (if there is one) and/or the appropriate senior leader
- curriculum plans
- pupils' work
- discussions with pupils
- interviews with teachers
- lesson visits, including conversation with teachers, if possible.

Read on for examples of questions you may be asked by inspectors.
School friendly questions suggested by Ofsted during inspectors training are at the start

	Possible Questions	Support
Focus Area 1: The School's understanding of computing and how that informs its approach to the curriculum	What is the purpose of computing within the curriculum	Computing plays a vital role in our lives. Rather than simply users of computing technology, its vital that our pupils learn how computers and computer systems work. The computing curriculum draws together the three strands of Computer Science, Information Technology and Digital Literacy (incl. eSafety). Its purpose is to equip children with the foundational skills, knowledge and understanding of computing they will need for the rest of their lives. **Computer Science (CS)** Computer science is the core of iCompute's computing curriculum and covers principles such as data representation, algorithms, data structures and programming. This provides the foundation knowledge required to understand and interpret other areas of the curriculum. **Information Technology (IT)** Information technology provides a context for the use of computers within society. Within IT there is a focus on knowledge of how computers are used within different sectors and describes the methods to create digital artefacts such as videos, animations or 3D models. **Digital Literacy (DL)** Digital literacy is the knowledge and ability to use technology confidently, competently and in a safe way. It covers wide-ranging knowledge from how to operate devices at a mechanical level, searching and selecting information and how to use digital devices safely and responsibly.
	Within the computing curriculum, what knowledge of computer science do pupils learn?	iCompute covers the algorithms & coding aspects of the curriculum by placing algorithms at its core. Our curriculum ensures that pupils know what algorithms are and that they underpin the design and development of computer programs. Computer programming is planned for progression, with the constructs of sequence, selection and repetition running throughout. Pupils progress from simple sequential statements in programming on to designing and developing functions and procedures using variables.

Possible Questions	Support
	They also learn about data, what forms data takes and how it is represented and transmitted in computer systems.
How does pupils' knowledge of algorithms increase in complexity?	iCompute ensures pupils start with understanding algorithms and build upon the understanding that people end computers can follow algorithms but computers need more precise instructions than people do. This moves on to translating algorithms in to computer programs.
How does the curriculum enable pupils to 'get better' at programming?	In iCompute programming is planned for progression, with the constructs of sequence, selection and repetition running throughout. Pupils progress from simple sequential statements in programming on to designing and developing functions and procedures using variables.
Do pupils understand the role of data in computer systems?	iCompute's iData and iNetwork units ensure pupils learn about data, what forms data takes (e.g. text, images, audio and video) and how it is represented and transmitted in computer systems.
What knowledge is it important for pupils to develop to create (spreadsheets/presentations/videos/images/animations)?	iCompute planning ensures that pupils learn, as part of the Information Technology strand, how to use applications that enable them to create, model and present information. This knowledge is important in developing digital literacy and skills in computer science. Our curriculum includes the children learning how to use spreadsheets for data modelling and creating graphs (iData units); learning how to create and manipulate digital images using paint tools and vector imaging software (iDraw units); presentation and animation software (e.g., iAnimate units)
How is pupils' knowledge of how computers are used developed over time?	iCompute set computing learning in different contexts to ensure our pupils understand that computers and technology are part of almost every part of the world we live in. They learn

Possible Questions	Support
	that computers are used at home, in schools, in businesses, in transport, hospitals and how they connect people globally through the internet.
How do you ensure that pupils learn to use digital devices safely, efficiently and responsibly?	iCompute plans for using a wide variety of devices throughout the primary phase. Practice of skills is embedded in lessons enabling pupils to become confident using common actions such as saving/retrieving work, printing and searching.
How does a pupil's knowledge of e-safety build over time? What would be different between KS1/KS2?	eSafety is embedded in every iCompute lesson. eSafety issues are clearly flagged within lesson plans with guidance on how to address them. Planning includes clear progression throughout the primary phase. We start in KS1 with understanding what is personal information and who we should share it with, what to do if we see something we don't like online to (in KS2) how to search clearly and safely online; what types of data is appropriate to share publicly (e.g. images), copyright issues and the importance of checking the reliability of information online; and how to do it.
Show me a curriculum example where specific computing content is sequenced to enable pupils to be 'ready' for something more complex. Show me how your curriculum prepares pupils for a particular topic through the knowledge that came before it.	iCompute's Year 1 iAlgorithm unit starts with the concept of algorithms being a set of instructions that need to be followed in order to complete a task. Sequencing of units then progresses to iProgram Unit 1, where pupils learn that people can give computers instructions (moving a character around a screen using arrow keys to reach a specific point). Both sets of instructions need to be followed in a particular order. Then on to iProgram Unit 2 where the children start to sequence blocks of code using Scratch Jr.
Show me which bits of your curriculum (like concepts, ideas, vocabulary, etc.) are crucial to re-visit so that they are remembered. How do you identify and ensure pupils remember the most crucial content covered?	See above for the concept of Algorithms. Each year group has at least one programming unit, all of which revisit algorithms, sequence, selection and repetition. Each unit also has a knowledge organiser with key vocabulary.

	Possible Questions	Support
	How do you as a school go about agreeing which specific knowledge (ideas, concepts, vocabulary, etc.) pupils absolutely need to know within each topic you teach?	Crucial content is identified in iCompute's planning through carefully sequenced lessons and retained through repetition. Progression in Information Technology is secured through planning so that skills develop in creating and editing digital work (e.g. manipulating images/models, changing layouts and fonts)
	Tell me how the different types of knowledge that you teach combine together in each topic? You have stated that you wish for pupils to learn to develop 'computational thinking' or to think more like a subject expert. How have you planned curriculum content to ensure they have learned what they need to attain this goal?	Computational Thinking underpins iCompute's curriculum. The fundamental principles of decomposition, abstraction, pattern spotting and logical thinking are designed in, enabling pupils to problem solve, design solutions and use technology creatively. The curriculum enables repeated practice of computational thinking skills. E.g., pupils are asked to design algorithms (using decomposition) prior to writing computer programs.
	Which pupils in this class are finding the subject most difficult? Why do they find the subject hard? Which bits of content are absolutely key that all pupils, including those with SEND, need to take away from this specific unit?	iCompute's detailed planning and robust assessment ensure that we know exactly where our pupils are. (Tip: during inspection identify a pupil who is struggling, state why you think they are and what you are doing about it). Example of iCompute iProgram units. It is key to understand the concept of debugging programs and that it is important to undertake debugging in a systematic way. E.g. Debugging at algorithm level by reading through, line by line. Then debugging a program level by testing systematically after some code has been added or changed.

	Possible Questions	Support
Focus Area 2: The extent to which teaching supports the goals of the computing curriculum	Tell me a bit about the teaching approaches you have chosen in this sequence of lessons – what made them suitable for the content that you were teaching? Can you give me some examples of how the content that pupils study shapes the activity you have chosen to teach it?	E.g: In iCompute's iProgram units, teachers model starting a program 'thinking out loud'. Making mistakes and debugging them. The activity chosen to support teaching programming is structured to follow the PRIMM approach to programming where pupils are given a starter program which they progressively make into their own, new, computer program. Approaches are suitable as they demonstrate that persistence and resilience are key qualities in programming and the PRIMM approach is a successful, research based, pedagogy that supports progression in programming.
	Show me some examples of where teaching activities were specifically chosen for pupils to remember things long term. Tell me a bit about how the approaches your school uses ensure that pupils remember what they've been taught. Can you show me some examples of approaches your school uses to support pupils in remembering what's on the computing curriculum over time?	The curriculum signposts knowledge required within units and between them. These are practised and assessed through repeated discussion, focused questioning verbally and using knowledge organisers and diagnostically online (if using iCompute Tests & Tasks bundle) Knowledge is reinforced by making connections between the three strands of the curriculum. E.g., by drawing comparisons between creating computer programs (CS) and using HTML to create a web page (DL). And reminding children how decomposition can be used to deconstruct a vector image in the same way as it is used to design a algorithm for a computer program.

	Possible Questions	Support
Focus Area 3: The effectiveness of assessment in computing	Tell me a bit about what your school thinks is the most effective way to assess pupils' progress in computing.	iCompute uses formative assessment throughout each unit, followed by summative assessment at the end of core units (Tests & Tasks schools only). Core units cover all three strands of the Computing Curriculum: Computer Science (CS), Information Technology (IT) and Digital Literacy (DL). Each lesson revisits learning from the session prior at the start. Knowledge Organisers for each unit have key questions the pupils answer and pupil iCan statements for self-assessment. This ensures that teacher assessments made throughout the unit are supported further with a diagnostic test and an opportunity for pupils to showcase their learning in an open-ended way. Any gaps in skills or learning are addressed by adjusting planning going forward.

	Possible Questions	Support
Focus Area 4: The extent to which there is a climate of high expectations where a love of the subject can flourish	How do you ensure pupils rise to your high expectations? For example, what actions do you take to ensure all pupils put their best effort into written work? Tell me how pupils with special educational needs might fare studying your computing curriculum?	Every child can enjoy and succeed in computing when offered appropriate learning opportunities. iCompute uses growth mindset and problem-solving approaches that enable pupils to develop resilience, persistence and confidence. All children are encouraged to believe in their ability to master computing and are empowered to succeed through curiosity, tinkering and perseverance. iCompute offers children with SEND varied and engaging ways to communicate, collaborate, express ideas and demonstrate success. We provide for familiarity, participation, physical engagement, flexibility, a range of teaching approaches and our assessment framework starts at P1 adapted for computing.
	Tell me a bit about what happens in the computing curriculum outside of the classroom. Are there any computing-specific experiences linked to the curriculum that take place outside of computing lessons? How do they link to the curriculum sequence? In what ways do pupils, who are very keen on your subject, get to share their enthusiasm?	Each iCompute lesson has an 'Extension / Home Learning / Enrichment' section with suggestions on how the lesson and topic can be enriched beyond the classroom. [*Insert details of any computer clubs, digital leaders programmes, computing related trips/visits etc.*]

	Possible Questions	Support
Focus Area 5: The quality of systems and support for staff development	Tell me a bit about how inexperienced or struggling staff are supported. How are teachers of computing enabled to develop their subject knowledge? How easy is it to incorporate specialist software or hardware into curriculum planning?	iCompute is designed for non-specialist teachers. Comprehensive support is provided which includes a Subject Leaders Toolkit with a primary computing handbook for essential subject knowledge, a CPD toolkit designed to be delivered inhouse by the Computing Lead, staff skills audits, CPD planning tools. Lessons are presented online in a step-by-step format, supported with animated videos for teachers explaining the key concepts and demonstrating required skills. Subject Leaders use the Toolkit to evaluate teachers. Conduct lesson observations, learning walks and talk to staff and pupils. Use the information gathered to plan appropriate action (See below) CPD, mentoring, coaching, peer-collaborative PD, team-teaching and modelling good practice. Specialist software or hardware is not required in the curriculum as all software is freely available and any device can be used.
	Do you think that staff in your school are aware of their subject knowledge areas of expertise and areas for development? What opportunities do staff have to grow in knowledge and confidence about the topics that they teach? What place does subject knowledge have within the school's programme for CPD in computing? Are there any barriers that are preventing staff to develop their subject knowledge and teaching expertise?	Staff meet frequently with the computing lead to discuss strengths and weaknesses. Regular CPD session develop confidence and skills. Staff are audited to identify CPD needs and CPD planning tools used to provide effective CPD. Good teaching is modelled by the subject lead. Also, if appropriate, identify where you work with other schools to develop subject knowledge.

	Possible Questions	Support
Focus Area 6 - The extent to which whole school policies affect the capacity for effective computing education	Is computing clearly taught in the curriculum from the start of KS1 to the end of KS2?	iCompute planning involves discrete computing lessons, one per week, throughout the academic year for Years 1-6
	What are the priorities for discussions at line management meetings between subject leaders and SLT?	Computing curriculum development and review are discussed as part of line management meetings. There is a focus on the challenges of teaching the computing curriculum and how these might be overcome.
	What criteria are used to decide on how curriculum time is allocated to computing?	Leaders follow iCompute guidance on providing for one lesson per week in order to teach computing and cover all National Curriculum objectives.
	Tell me a bit about how big-picture decisions in school affect computing. Is there anything about whole-school policies that limits or holds back the computing curriculum and assessment of it?	Senior leaders are sensitive to how school-wide policies can impact on computing. Senior leaders work with the subject lead to ensure an ambitious curriculum can be taught and assessed without compromising subject-specific practices.

	Possible Questions	Support
Curriculum Knowledge	What practices do you use in computing to build new knowledge?	Most iCompute units include some element of 'unplugged' activities to engage children physically in computing which supports the understanding of abstract concepts. iCompute's programming lessons use the research-led PRIMM pedagogy which has been shown to build knowledge and skills in programming. Find out more about this by looking at the Pedagogy folder in the Subject Leader's Toolkit. Consult the Subject Leader's Toolkit for information on range of computing pedagogies.
	How do you check knowledge when pupils are struggling?	iCompute's lesson plans contain key assessment questions and have detailed assessment criteria that use the working towards, meeting and working at greater depth model. If applicable, our Tests & Tasks pack includes online diagnostic tests that specifically test for knowledge. These can be used at any point to check on knowledge and monitor progress.
	How do you respond to struggling pupils?	Understand the scheme. iCompute is designed for mastery. Lessons are planned so that all pupils are working on the same content at the same time. All lessons contains 'Easier' activities and differentiated support resources. By being offered appropriate, differentiated, learning opportunities all pupils can believe they are capable of succeeding in computing.
	How do you ensure key knowledge, skills and understanding are secure?	Many units cover the same strand of the National Curriculum and objectives which ensures that pupil learning is regularly revisited, consolidated and checked.
Assessment &	How do you assess?	Use the key questions in each lesson plan and detailed end-of-unit assessment guidance to make a teacher judgement.

	Possible Questions	Support
		Regularly feed the data from this into the Pupil Progress Trackers, checking each pupil against the detailed assessment criteria for each strand of the National Curriculum. The Pupil Progress trackers then allocate a 'colourway' which shows, at a glance, if pupils are working towards, meeting or working at greater depth. If applicable you can support assessment with our Tests & Tasks pack which includes online diagnostic tests and open-ended assessment tasks with detailed mark scheme.
	How do you ensure accurate assessment?	Use the full range of guides, tools and products available which, combined, support one other to provide an accurate assessment of where your pupils are and need to go next.
	How as subject lead do you know what is happening across the school in terms of progression?	Ensuring rigorous assessment practices are in place, supported by the Assessment and Subject Leader's toolkits which provide a full range of tools, guides and products.
	How are end of term assessments fed back into teaching and learning?	Use end-of-unit assessment to feed into Pupil Progress trackers. This will help identify any gaps or areas of weakness and inform future planning.
	How do you know where the gaps are?	See above.
	How are gaps filled in learning?	See above.
	What action do you take if pupils are falling behind in sequences of lessons?	This will vary according to your setting and resources. Consider interventions, additional support in lessons, after-school clubs or teaching content from earlier year groups.
	How do you use assessment to plan or adjust subsequent teaching?	Use end-of-unit assessment to feed into Pupil Progress Trackers. This will help identify any gaps or areas of weakness and inform future planning.
Learning Culture	How do you enrich computing beyond learning in the classroom	Look at the 'Enrichment' section of each lesson plan which suggests a range of enrichment activities appropriate to each lesson and unit.

	Possible Questions	Support
	How do you get the best from pupils?	Every child can enjoy and succeed in computing when offered appropriate, engaging, learning opportunities. iCompute uses approaches that enable pupils to develop resilience, persistence and confidence. Lessons are sequenced so that concepts are developed in logical steps. This ensures that all children can master concepts before moving to the next stage, with no pupil left behind. All children are taught the same lesson at the same time. Each lesson offers differentiated activities: 'core', 'easier' and 'harder' along with suggested extension/enrichment activities. The curriculum is supported by a comprehensive Assessment Toolkit which schools can use to set in place thorough and rigorous assessment practices.
	How do you promote engagement with computing (teachers and pupils)	The best teachers are confident and passionate about their subject. Use the Subject Leader's toolkit to support others teaching computing with improved subject knowledge and inspire and enthuse them about the need for a high quality computing education. This will, in conjunction with a creative, equitable, inspiring curriculum, engage and enthuse pupils.
Supporting Teaching	How do you support staff in delivering the curriculum	Know the curriculum and use the Assessment Toolkit to monitor that it is being delivered in line with curriculum planning and aims. The Subject Leader's Toolkit contains a wealth of materials to support with subject knowledge, computing pedagogies, templates, skills auditing, CPD planning (and design), subject knowledge checklists and action planning.

	Possible Questions	Support
	How do you ensure teachers and TA's have the required subject knowledge?	The step-by-step lesson plans teach the teacher as well as the pupils. They contain information and links to online sources to improve subject learning. The Primary Computing Handbook (part of the Subject Leader's Toolkit) covers all aspects of the subject knowledge required to deliver the computing curriculum. Tools audit skills and plan appropriate CPD are also included in the Subject Leader's Toolkit.
	What systems do you have for inexperienced or struggling teachers?	Use the Subject Leader's Toolkit to evaluate teachers. Conduct lesson observations, learning walks and talk to staff and pupils. Use the information gathered to plan appropriate action (See below) CPD, mentoring, coaching, peer-collaborative PD, team-teaching and modelling good practice.
	What CPD provision do you have for staff?	Use the Subject Leader's Toolkit to audit CPD needs, plan and evaluate effective and impactful CPD. Use the range of approaches suggested within Section 5.

Work Scrutiny	How are you evidencing lessons?	Use the Assessment Toolkit Guide which details a number of approaches to evidence work in computing, including digital artefacts.
	How do you monitor progression in work?	Use the Assessment Toolkit Guide which details a number of ways to monitor progression and suggests various approaches for providing feedback. Talk to your pupils and ask them to explain previous work and talk about what they had been learning.

	Possible Questions	Support
	Can you show me where this lesson fits in the sequence of lessons?	Map the lesson to the Unit plan, medium and long term plans. As provided in the Curriculum Guide.
	What objective is this?	Map the work to the lesson objective in the unit plan.
	Can you talk me through the work? What are you seeing?	Know the curriculum and where the work fits in to the medium term planning and, in turn, the long term plan. Know how each lesson builds
	Where will they go from here?	Know the curriculum. Understand where each activity, within each lesson/unit, fits in to the medium and long term plans. Understand the intended outcomes of the lesson the work was the product of – which are detailed in unit overviews and each lesson plan. Understand how each lesson builds on the progression of knowledge, skills and understanding and which unit/lesson is next in the sequence.

	Possible Questions	Support
Curriculum Extent	Does the curriculum match or exceed the National Curriculum?	Refer to the Curriculum Guide which provides long-term planning and unit overviews mapped to the National Curriculum and each strand within. Unit plans detail how the sequence of lessons meet the objectives of the National Curriculum (and the specific strand) iCompute exceeds the National Curriculum as it includes some KS3 objectives in UKS2.
	How is computing timetabled across the school? Does this ensure sufficient coverage?	Look at the Planning Guidance in the Curriculum Guide. Suggested timetabling is that computing is taught discretely for 45-60 per week from Year 1 to Year 6 plus cross curricular working wherever appropriate. This will ensure full coverage of the scheme of work.
	How does the curriculum ensure challenge?	Know the scheme. Read the supporting documents, look at the Subject Leader's Toolkit. Understand how each unit provides 'harder' and 'extension/enrichment' activities along with differentiated resources to challenge the most able pupils. Use the Assessment Toolkit which includes detailed progression guides for pupils working towards, meeting and working at greater depth.
	How do you monitor the curriculum to ensure end of key stage objectives are met?	The curriculum is designed for progression where all learning builds towards clearly defined end points: • end of unit • end of year • end of Key Stage Use the Assessment Toolkit to monitor progression across the curriculum. Use end of unit assessment guidance to feed into the Pupil Progress Trackers (one per year group) which are matched to each strand of the National

Curriculum Sequencing	Possible Questions	Support
		Curriculum and contain detailed assessment criteria. If applicable, use our Tests & Tasks pack in conjunction with the toolkit to ensure teacher judgment is supported by diagnostic testing and open-ended pupil assessment tasks.
	How do you ensure the content and activities in lessons are appropriate for progression in computing?	Use the Quick Look Progression Skills Guide to demonstrate how units (for each year) are planned for progression against detailed criteria. Also refer to the unit overviews within the Curriculum Guide which details what is being taught for each unit, for each year. Lessons are designed using research-led computing pedagogies that have been demonstrated to support progression in computer science.
	How does the content of the curriculum build year on year?	The Assessment Toolkit contains detailed progression guides and skills documents for: • Computer Science • Digital Literacy • Information Technology • eSafety These are divided into individual year groups, iCompute Units, and, further, into working towards, meeting and working at greater depth.
	Why does your curriculum teach this unit at this point?	Look at the planning guidance in the Curriculum Guide. This has been set out to provide a broad, rich and varied curriculum across all strands within each year group that is designed for progression. Planning guidance is a suggestion only and unit sequencing should be adjusted to suit the needs of your pupils. Units may also be taught from different year groups according to the ability of your class.
	What gaps do you typically find in pupil's knowledge and skills?	The Pupil Progress Trackers will help you identify gaps and point to which areas are commonly found to be the weakest.
	How do you adjust the sequencing of lessons (either during the current	The Assessment Toolkit (and, if applicable) Tests and Tasks pack is perfect for this.

	Possible Questions	Support
Curriculum Knowledge	year or earlier in the school) to address gaps?	By knowing exactly where your pupils currently are you can use the flexibility of iCompute units to ensure your pupils are being taught at the appropriate level for their needs.
	What practices do you use in computing to build new knowledge?	Most units include 'unplugged' activities to engage children physically in computing which supports the understanding of abstract concepts. Programming lessons use the research-led PRIMM pedagogy which has been shown to build knowledge and skills in programming. Find out more about this by looking at the Pedagogy folder in the Subject Leader's Toolkit. Consult the Subject Leader's Toolkit for information on range of computing pedagogies.
	How do you check knowledge when pupils are struggling?	Lesson plans contain key assessment questions and have detailed assessment criteria that use the working towards, meeting and working at greater depth model. If applicable, our Tests & Tasks pack includes online diagnostic tests that specifically test for knowledge. These can be used at any point to check on knowledge and monitor progress.
	How do you respond to struggling pupils?	Understand the scheme. iCompute is designed for mastery. Lessons are planned so that all pupils are working on the same content at the same time. All lessons contains 'Easier' activities and differentiated support resources. By being offered appropriate, differentiated, learning opportunities all pupils can believe they are capable of succeeding in computing.
	How do you ensure key knowledge, skills and understanding are secure?	Many units cover the same strand of the National Curriculum and objectives which ensures that pupil learning is regularly revisited, consolidated and checked.
Assessment & Progression	How do you assess?	Use the key questions in each lesson plan and detailed end-of-unit assessment guidance to make a teacher judgement. Regularly feed the data from this into the Pupil Progress Trackers, checking each pupil against

	Possible Questions	Support
		the detailed assessment criteria for each strand of the National Curriculum. The Pupil Progress trackers then allocate a 'colourway' which shows, at a glance, if pupils are working towards, meeting or working at greater depth. If applicable you can support assessment with our Tests & Tasks pack which includes online diagnostic tests and open-ended assessment tasks with detailed mark scheme.
	How do you ensure accurate assessment?	Use the full range of guides, tools and products available which, combined, support one other to provide an accurate assessment of where your pupils are and need to go next.
	How as subject lead do you know what is happening across the school in terms of progression?	Ensuring rigorous assessment practices are in place, supported by the Assessment and Subject Leader's toolkits which provide a full range of tools, guides and products.
	How are end of term assessments fed back into teaching and learning?	Use end-of-unit assessment to feed into Pupil Progress trackers. This will help identify any gaps or areas of weakness and inform future planning.
	How do you know where the gaps are?	See above.
	How are gaps filled in learning?	See above.
	What action do you take if pupils are falling behind in sequences of lessons?	This will vary according to your setting and resources. Consider interventions, additional support in lessons, after-school clubs or teaching content from earlier year groups.
	How do you use assessment to plan or adjust subsequent teaching?	Use end-of-unit assessment to feed into Pupil Progress Trackers. This will help identify any gaps or areas of weakness and inform future planning.
Learning Culture	How do you enrich computing beyond learning in the classroom	Look at the 'Enrichment' section of each lesson plan which suggests a range of enrichment activities appropriate to each lesson and unit.

	Possible Questions	Support
	How do you get the best from pupils?	Every child can enjoy and succeed in computing when offered appropriate, engaging, learning opportunities. iCompute uses approaches that enable pupils to develop resilience, persistence and confidence. Lessons are sequenced so that concepts are developed in logical steps. This ensures that all children can master concepts before moving to the next stage, with no pupil left behind. All children are taught the same lesson at the same time. Each lesson offers differentiated activities: 'core', 'easier' and 'harder' along with suggested extension/enrichment activities. The curriculum is supported by a comprehensive Assessment Toolkit which schools can use to set in place thorough and rigorous assessment practices.
	How do you promote engagement with computing (teachers and pupils)	The best teachers are confident and passionate about their subject. Use the Subject Leader's toolkit to support others teaching computing with improved subject knowledge and inspire and enthuse them about the need for a high quality computing education. This will, in conjunction with a creative, equitable, inspiring curriculum, engage and enthuse pupils.
Supporting Teachings	How do you support staff in delivering the curriculum	Know the curriculum and use the Assessment Toolkit to monitor that it is being delivered in line with curriculum planning and aims. The Subject Leader's Toolkit contains a wealth of materials to support with subject knowledge, computing pedagogies, templates, skills auditing, CPD planning (and design), subject knowledge checklists and action planning.

	Possible Questions	Support
	How do you ensure teachers and TA's have the required subject knowledge?	The step-by-step lesson plans teach the teacher as well as the pupils. They contain information and links to online sources to improve subject learning. The Primary Computing Handbook (part of the Subject Leader's Toolkit) covers all aspects of the subject knowledge required to deliver the computing curriculum. Tools audit skills and plan appropriate CPD are also included in the Subject Leader's Toolkit.
	What systems do you have for inexperienced or struggling teachers?	Use the Subject Leader's Toolkit to evaluate teachers. Conduct lesson observations, learning walks and talk to staff and pupils. Use the information gathered to plan appropriate action (See below) CPD, mentoring, coaching, peer-collaborative PD, team-teaching and modelling good practice.
	What CPD provision do you have for staff?	Use the Subject Leader's Toolkit to audit CPD needs, plan and evaluate effective and impactful CPD. Use the range of approaches suggested within Section 5.

Work Scrutiny	How are you evidencing lessons?	Use the Assessment Toolkit Guide which details a number of approaches to evidence work in computing, including digital artefacts.
	How do you monitor progression in work?	Use the Assessment Toolkit Guide which details a number of ways to monitor progression and suggests various approaches for providing feedback. Talk to your pupils and ask them to explain previous work and talk about what they had been learning.

	Possible Questions	Support
	Can you show me where this lesson fits in the sequence of lessons?	Map the lesson to the Unit plan, medium and long term plans. As provided in the Curriculum Guide.
	What objective is this?	Map the work to the lesson objective in the unit plan.
	Can you talk me through the work? What are you seeing?	Know the curriculum and where the work fits in to the medium term planning and, in turn, the long term plan. Know how each lesson builds
	Where will they go from here?	Know the curriculum. Understand where each activity, within each lesson/unit, fits in to the medium and long term plans. Understand the intended outcomes of the lesson the work was the product of – which are detailed in unit overviews and each lesson plan. Understand how each lesson builds on the progression of knowledge, skills and understanding and which unit/lesson is next in the sequence.