# What are the key features of 'knowledge-rich' assessment for Computing?

| Subject | Features |
|---|---|
| **Computing** | ❑ At key stage 1, the sticky knowledge takes full account of the national curriculum's main characteristics of:<br>❑ Algorithms<br>❑ Creating Programs<br>❑ Reasoning<br>❑ Using Technology<br>❑ Uses of IT beyond school<br>❑ Being Safe |
| | ❑ At key stage 2, the sticky knowledge takes full account of the national curriculum's main characteristics of:<br>❑ Creating Programs<br>❑ Developing Programs<br>❑ Reasoning<br>❑ Networks<br>❑ Search Engines<br>❑ Using Programs<br>❑ Being Safe |
| | ❑ There are relatively few assessment statements as these knowledge statements should be what pupils retain for ever. In other words, this knowledge is within their long-term memory and will be retained. |
| | ❑ When considering pupils' improvement in subject specific vocabulary, provide pupils with a vocabulary mat which contains all words used for computing for their age group. |

# Computing: Key Stage 1

| | Algorithms | Create programs | Reasoning |
|---|---|---|---|
| | *Pupils should be taught to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions* | *Pupils should be taught to create and debug simple programs* | *Pupils should be taught to use logical reasoning to predict the behaviour of simple programs* |
| **Year 1** | • create a series of instructions and plan a journey for a programmable toy | • create, store and retrieve digital content | |
| **Year 2** | • understand that algorithms are used on digital devices | • write a simple program and test it | • predict what the outcome of a simple program will be (logical reasoning). |

# Computing: Key Stage 1

| | Using technology | Uses of IT beyond school | Safe use |
|---|---|---|---|
| | *Pupils should be taught to use technology purposefully to create, organise, store, manipulate and retrieve digital* | *Pupils should be taught to recognise common uses of information technology beyond school* | *Pupils should be taught to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies* |
| **Year 1** | • use a website and a camera<br>• record sound and play back | • talk about some of the IT uses in their own home | • use technology safely<br>• keep personal information private |
| **Year 2** | • understand that programs require precise instructions<br>• organise, retrieve and manipulate digital content | • know how technology is used in school and outside of school | • know where to go for help if concerned. |

# Computing: Key Stage 2

| | Create programs | Develop programs | Reasoning | Networks |
|---|---|---|---|---|
| | *Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* | *Pupils should be taught to use sequence, selection, and repetition in programs; work with variables and various forms of input and output* | *Pupils should be taught to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* | *Pupils should be taught to understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration* |
| **Year 3** | • write programs that accomplish specific goals | • design a sequence of instructions, including directional instructions | • discern when it is best to use technology and where it adds little or no value | • navigate the web to complete simple searches |
| **Year 4** | • give an 'on-screen' robot specific instructions that takes them from A to B | • experiment with variables to control models | • make an accurate prediction and explain why they believe something will happen (linked to programming) | • know how to search for specific information and know which information is useful and which is not |
| **Year 5** | • use technology to control an external device | • develop a program that has specific variables identified | • analyse and evaluate information reaching a conclusion that helps with future developments | |
| **Year 6** | • write a program that combines more than one attribute | • develop a sequenced program that has repetition and variables identified | • design algorithms that use repetition and 2-way selection | |

# Computing: Key Stage 2

| | Search engines | Using programs | Safe use |
|---|---|---|---|
| | *Pupils should be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* | *Pupils should be taught to select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information* | *Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact* |
| **Year 3** | • use a range of software for similar purposes<br>• collect and present information | • understand what computer networks do and how they provide multiple services | • use technology respectfully and responsibly<br>• Know different ways they can get help if concerned |
| **Year 4** | • select and use software to accomplish given goals | • produce and upload a podcast | • recognise acceptable and unacceptable behaviour using technology |
| **Year 5** | • understand how search results are selected and ranked | • combine sequences of instructions and procedures to turn devices on and off | • understand that they have to make choices when using technology and that not everything is true and/or safe |
| **Year 6** | • be aware that some search engines may provide misleading information | • present the data collected in a way that makes it easy for others to understand | • Be increasingly aware of the potential dangers in using aspects of IT and know when to alert someone if feeling uncomfortable |