INSPECTOR CURRICULUM

Primary computing aide-memoire

A high-quality computing education equips pupils to use computational thinking to become creators of digital technologies, digital artefacts and computing knowledge.

Contents

- ⇒ This document has been created to support inspectors undertaking a deep dive in computing.
- ⇒ It provides a high-level summary of stage two training and wider guidance.
- ⇒ The six focus areas provide a structure to explain subject level outcomes as identified by inspection activities.
- ⇒ School leaders may not be able and should not be expected to articulate their intent **as it is outlined** in this aide-memoire or to provide documents which neatly provide the evidence for the focus areas.

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1. Curriculum

Scope

Computer science

Algorithms and programming

How does pupils' knowledge of algorithms increase in complexity?

How do pupils get better at programming (sequence/selection/repetition)?

Data

Do pupils learn useful component knowledge to support their understanding of data?

Systems

Are pupils developing knowledge of systems through knowledge of input, process and output?

Information technology

Digital artefacts

Is the creation of digital artefacts underpinned by secure component knowledge?

Do pupils develop knowledge in multiple applications?

Are the applications pupils are using appropriate to the artefact?

Computing contexts

Do pupils develop knowledge of how computers can be used purposefully both locally and globally?

Digital literacy

Mechanics

Do plans identify the knowledge pupils need to use devices effectively?

Searching/selecting information

Are pupils developing knowledge of how to search for information effectively?

Are pupils taught what makes information more or less reliable?

E-safety

Is knowledge of e-safety sufficiently different between years?

Components & sequencing

Does the school plan for an integrated curriculum that combines all categories of knowledge?

If external schemes are used, has there been critical evaluation of sequence appropriateness?

Memory

Do teachers plan for automaticity in commonly used procedures and methods?

Is sufficient time allocated in curriculum plans for practice?

Early years:

Are the early years being used to lay the foundations of computing?

Is there a clear link between the early years curriculum and the curriculum in KS1?

2. Pedagogy

What is the rationale for the teaching chosen in lessons (fitness for purpose)?

Do activities support the curriculum intent?

Are pedagogical approaches well matched to the stages of learning?

Are activities distracting, preventing pupils remembering what they have learned?

Do pupils show an over-reliance on adult support when tackling problems?

Are pupils expected to experiment or discover new knowledge despite being novices within the subject?

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3. Assessment

How does assessment identify progress in the components which underly computing progress?

Does assessment only focus on the assessment of composite tasks such as completed programs or digital artefacts?

Is pupils' work easily accessible to see how it has improved over time?

4. Culture

Is there a belief that computing is for all pupils?

Are pupils motivated to do well through visible success in the subject?

Are clubs purposeful supporting the development of computing knowledge?

What opportunities outside of the classroom are afforded to computing? Are there trips or participation in competitions and other initiatives?

5. Systems

Is the subject leader an expert in computing? If not what is happening to develop their expertise within the subject?

Are teachers well supported in developing their subject and pedagogical knowledge?

Where there is a lack of capacity in school to develop teacher expertise are external opportunities being used?

Does the subject have the resources it needs to deliver an ambitious computing curriculum?

6. Policy

Do school leaders and subject leaders take seriously the requirement that computing must be taught to all pupils at every key stage?

Is enough time allocated to teach the computing curriculum?

Do school-wide policies such as those for assessment or pedagogy allow for computing to be taught without compromising subject-specific practices?

INSPECTOR CURRICULUM

Secondary computing aide-memoire

A high-quality computing education equips pupils to use computational thinking to become creators of digital technologies, digital artefacts and computing knowledge.

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1. Curriculum

Scope

Computer science

Algorithms and programming

Do plans for teaching pupils how to program match the ambition of the NC? (Two programming languages/data structures/functions)

Data

Is the curriculum planned to develop knowledge of data from first principles to abstracts?

Systems

Are pupils developing knowledge of systems as architectures? (e.g. Von Neumann architecture)

Information technology

Digital artefacts

Is the creation of digital artefacts underpinned by secure component knowledge?

Do pupils learn the knowledge require to think about trustworthiness, design elements and usability?

Computing contexts

Does the department plan for pupils to expand (broaden) and extend (deepen) their knowledge of computing contexts?

Digital literacy

Does the department believe pupils to be 'digital natives' and not plan for pupils to develop knowledge in the operation of computing devices?

Does the department believe digital literacy to be a skill that is disconnected from subject knowledge?

Do pupils demonstrate fluency in their use of technology, requiring little teacher support?

Is knowledge of e-safety sufficiently different between years?

Components & sequencing

Does the department plan for an integrated curriculum that combines all categories of knowledge?

Does the department consider the prior knowledge of Year 7 pupils in their planning?

Memory

Do teachers plan for automaticity in commonly used procedures and methods?

Is sufficient time allocated in curriculum plans for practice?

Rigour

Computational thinking is a domain specific approach to solving problems and applies to a range of methods used within the subject by experts. The curriculum should allow pupils to develop their capacity to think computationally through repeated practice with carefully selected known and unknown problems sharing the same 'deep structure properties'. This will be underpinned by secure pre-requisite component knowledge. Pupils should have the opportunity to implement solutions through practical programming.

2. Pedagogy

What is the rationale for the teaching chosen in lessons (fitness for purpose)?

Do activities support the curriculum intent?

Are pedagogical approaches well matched to the stages of learning?

Do teachers model expert thinking in their modelling?

Is there an over-reliance on online courses to teach programming?

Are pupils taught the most efficient methods?

Does the school over-use 'unplugged' activities which create unnecessary abstractions of subject content, increase cognitive load and take up curriculum time?

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3. Assessment

How does assessment identify progress in the components which underly computing progress?

Does assessment only focus on the assessment of composite tasks such as completed programs or digital artefacts?

Is pupils' work easily accessible to see how it has improved over time?

4. Culture

Is there a belief that computing is for all pupils?

Are clubs purposeful in supporting the development of computing knowledge?

What opportunities outside of the classroom are afforded to computing? Are there trips or participation in competitions and other initiatives?

Are pathways in computing beyond KS3 accessible to all pupils?

5. Systems

Where non-specialists are teaching the subject, is there a clear plan for developing their subject knowledge?

Are teachers well supported in developing their subject and pedagogical knowledge?

Where there is a lack of capacity in school to develop teacher expertise, are external opportunities being used?

Does the subject have the resources it needs to deliver an ambitious computing curriculum?

6. Policy

Do school leaders and subject leaders take seriously the requirement that computing must be taught to all pupils at every key stage?

Is enough time allocated to teach the computing curriculum?

Do school-wide policies such as those for assessment or pedagogy allow for computing to be taught without compromising subject-specific practices?