Computing at Mickley Village Primary and Nursery

Computing non-negotiables

Declarative and Procedural Knowledge

There are two types of knowledge that we identify, sequence and connect across our Computing curriculum:

Declarative knowledge: also known as conceptual knowledge; consists of facts, rules and principles and relationships between them. It can be described as 'knowing that'.

Procedural knowledge: knowledge of methods or processes that can be performed. It can be described as 'knowing how'.

Variety within assessment

A range of approaches give teachers a better picture of pupil progress:

- Assessment can be embedded into lessons, such as through creating portfolios, or using entry and exit tickets and reflective tasks (reviewing previous learning)
- Multiple-choice questions (quick method for discovering student understanding).

Types of assessment

- formative assessment (assessment for learning)- ongoing check of pupils learning within lessons.
- summative assessment (assessment of learning) - usually done at the end of a unit of work to measure pupil outcomes (e.g. graded test or quiz).

Adaptive teaching in computing

- viewing pupils as having 'different starting points' rather than different ability
- understanding barriers/ misconceptions before teaching
- effective use of formative assessment & grouping
- scaffolding (which is gradually withdrawn)
- altering what you might be expecting as a 'product', giving pupils the chance to demonstrate a range of skills and greater creativity.

Support and Challenge:

Teachers plan and adapt their approaches to teaching and learning so that all pupils can take part in lessons fully and effectively. Pupils may use modified tools such as voice dictation. In some circumstances where it is apparent that a child's needs would be best met by adapting independent tasks, including coverage of the content from previous years/topics, all and any specific arrangements will be shared with relevant staff and parents.

Evidence/Books

Computing is rich with abstract concepts to understand and technical skills to master. In order to flourish, students need a wide variety of learning experiences that carefully marry theoretical understanding with hands-on and practical experience. Most of the time, this experience involves the use of computing devices and specialist software that is either a requirement of or enhancement to the learning experience.

There are, however, circumstances where educators may need or choose to: leave their devices behind, and/or step back from the context of computing altogether. The first of these are referred to as 'offline activities', and the latter are known as 'unplugged activities'.

Evidence may include: photographs/screenshots saved to Seesaw, evidence in workbooks or saved work on PCs.

Computing Learning Model and example of declarative and procedural knowledge

Lesson structure:

- Reinforce previous learning
- Introduction to lesson
- Learning objective
- Introduction to vocabulary
- Activity
- Plenary
- Summary (may include this time/next time)
- Assessment

Table 1: Examples of declarative and procedural knowledge in computing

Form of knowledge	Computer science	Information technology	Digital literacy
Declarative	Programming syntax The purpose and function of different logic gates	Principles of effective multimedia design Spreadsheet formulae	Features of unreliable content
Procedural	Performing binary addition Implementing a repeat in a programming language	Setting up a slide master Applying conditional formatting	How to perform an advanced web search

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