ICT Curriculum Rationale for KS1&2

Introduction:

This document aims to present a Computing curriculum for Key Stages 1&2 made up of 5 strands: Multimedia, Programming, Online, E-Safety and Data.

Curriculum rationale: Multimedia:

The multimedia strand of the curriculum is designed to provide pupils with the skills and knowledge to work creatively within a range of media and on a range of technology platforms. By nurturing pupils' creative development in tandem with developing their technical skills of programming, it is hoped the curriculum will lay the foundations, and spark an interest, for pupils to pursue their learning within the digital creative domain. The media types covered are: graphics; text; sound; video; and animation. The curriculum is cyclical such that media types are revisited as pupils progress through the key stages with higher-level objectives in order to show progression. For each media type a range of programs are employed to hopefully prevent pupils' skills and knowledge being tied to a particular program but, rather, being transferable and related to the underlying concepts of manipulating the particular media type. Both 'apps' and programs are used since this strand is delivered on a combination of iPads and PCs. As such, linking with the data strand of the curriculum, pupils will develop their knowledge of the recording, storage and retrieval of a range of data types on a range of platforms, including the transfer of data. Multimedia learning objectives are presented for each units, however the units may be thought of as a shell into which the content and topic of the media needs to be decided upon by those delivering this scheme.

Curriculum rationale: Programming:

Key Stage Attainment Targets have been incorporated into a progression of programming skills which build upon previous learning and which aim to move pupils from constructing simple sequential algorithms to complex programs employing variables, selection and iteration written within the scripting language Python. A range of apps and programs are used for delivery of the programming strand of the curriculum such that the development of pupils' skills and knowledge is not program specific but, rather, relates to the underlying concepts of programming and computational thinking, and is transferable to new programming environments as technology, inevitably, evolves.

Curriculum rationale: Online:

The online strand of this curriculum is designed to provide pupils with the skills and knowledge to effectively and efficiently navigate the Internet and undertake online tasks of communication and data storage. The topics covered within this strand are:

websites; email; blogging; research via search engines; video conferencing; and cloud computing. The curriculum is cyclical such that the majority of topics are revisited with higher-level objectives for progression: for example pupils learn to perform a basic Internet search in Year 3 before learning to employ advanced search functions in Year 5. Online communication is covered in the email, video conferencing and blogging units and provides scope to target E-Safety objectives regarding our online profile and behaviour in online communities. It was decided to include a unit on Cloud Computing to introduce pupils to the notion of online storage and retrieval and the emerging trend whereby computers are simply used as gateways to connect to the Internet with applications being run, and files being stored, online. In a similar manner to the multimedia strand, whilst online learning objectives are provided for each year, the units should be thought of as a shell into which the content and topic needs to be decided upon.

Curriculum rationale: E-Safety:

Since pupils are spending a greater time online and are starting to go online at a younger age, and on a greater range of devices, the curriculum aims to provide pupils with the education they require to help navigate the online world safely and take their place respectfully in online communities.

Curriculum rationale: Data:

The data strand of this curriculum aims to provide pupils with the skills and knowledge to enter, manipulate, sort, search and represent data in a variety of formats in a range of programs. In working through this strand of the curriculum pupils are introduced to the notion of entering data into a program so it may be represented graphically using pictograms or a higher-level means of representation inline with age related numeracy objectives. There is significant scope within the data strand for the reinforcement of knowledge covered within programming units, since pupils will have learnt about the creation and assignment of variables – the means by which programs receive data. Similarly the processes of sorting and searching data is essentially achieved with a selection algorithm (conditional statements) i.e. if….. then…. which pupils will have employed in the programs they have written. In a similar manner to the multimedia strand, whilst data learning objectives are provided for each year, the units should be thought of as a shell into which the content and topic needs to be decided upon.