OCR Lesson Plan

The BIG picture?

Students are learning the theory element of the course and, over the past weeks, have been looking at unit 2.1.3 exam – Representation of Data in Computers. In this lesson they explore how a computer stores an image.

Objectives

- Explain the representation of an image as a series of pixels represented in binary
- Explain the need for metadata to be included in the file such as height, width and colour depth
- Discuss the effect of colour depth and resolution on the size of an image file

Engagement?

Computing Xmas Cracker Jokes

Binary Crossword

Xmas Pixel art task

'Keywords!'

Binary
Image
Pixels
Picture Element
Pixels
Colour Depth
Resolution
Metadata

Differentiation

Students given computing Xmas cracker jokes with hidden challenges on the back (Each students has a different challenge based on ability).

Help sheets

Keywords (Tagxedo)

AfL

Q&A

Pupil Record Sheet (Excel)

Filled in worksheets

Plenary: (Recap Learning Objectives) – Pose, Pause, Pounce, Bounce

Pose
Pause
Pounce
Bounce

Learning Episodes

Teacher Led or **Student Led**?

5mins: **Students** attempt binary crossword puzzle.

Key message: Re-enforce Binary logic and that a Computer only understands Binary.

Teacher Led or **Student Led?**

Teacher show images on the board and ask **Students** to discuss how a computer might interpret the images.

Teacher to explain how a computer converts an image into binary with help from some volunteers.

Teacher Led or **Student Led?**

Students to have a go at creating their very own 1-bit and 2-bit art work and convert it into binary. G&T/Higher ability to convert their images to Hex and explain the benefits of converting to Hex.

Teacher Led or Student Led?

Teacher to explain MetaData followed by a short plenary - based on the Learning Objectives.

Teacher to ask questions related to the Learning Objectives to guage understanding