

Binary data Activity Challenge Colouring Page

KS3 / Year 9 - Computing

Colour the four evidence panels and explain how binary represents a number, image, character and sound.

BINARY EVIDENCE HUNT

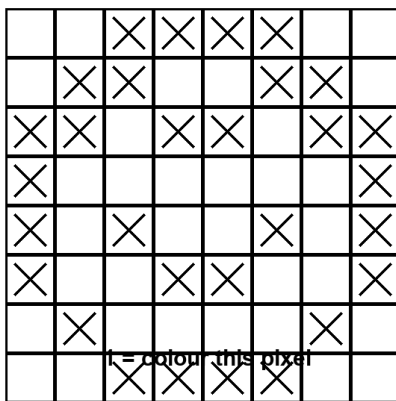
Find and explain four ways binary represents information

CLUE 1: NUMBER

128	64	32	16	8	4	2	1
1	0	1	0	1	1	0	1

Decimal value = 173

CLUE 2: IMAGE



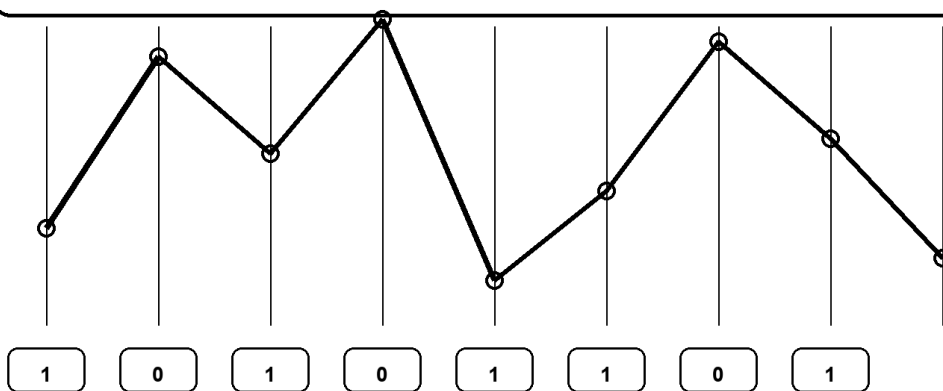
CLUE 3: CHARACTER



65

01000001

CLUE 4: SOUND SAMPLES



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Parent & Teacher Guidance

Curriculum focus

Topic: Binary data. Develop accurate observation, subject vocabulary and evidence-based explanation. Mapped scope: DfE national curriculum programme of study for key stage 3.

Before you begin

Review the picture together and ask the learner what they already notice about Binary data. Read the activity aloud, explain unfamiliar vocabulary, and agree which details need special attention.

Solo activity

The learner can complete the colouring independently, then use the finished page to explain three details linked to Binary data. Encourage accurate colour choices where they carry meaning, but allow creative choices elsewhere.

Group activity

Give pairs or small groups different areas to inspect. Ask them to agree on evidence before colouring, compare their findings, and present one curriculum fact to the class. Finish with a whole-group check against the guidance below.

Questions to guide discussion

What evidence can you see? Which feature is most important and why? How does one part connect to another? What new fact about Binary data can you explain using the picture?

Answers and checking

Number: $10101101 = 173$ because $128 + 32 + 8 + 4 + 1 = 173$. Image: each pixel has a binary state. Character: capital A is shown as decimal 65 and 8-bit binary 01000001. Sound: measured samples can be stored as binary values.

Learning record and next steps

☐ Completed the colouring

☐ Explained key vocabulary

☐ Completed the activity

☐ Used visible evidence

Evidence noticed / vocabulary used

Next step:
