

Binary data Vocabulary And Facts Colouring Page

KS3 / Year 8 - Computing

Colour-code the 8-bit example and explain how 01001101 represents the decimal value 77.

BINARY DATA: EIGHT BITS

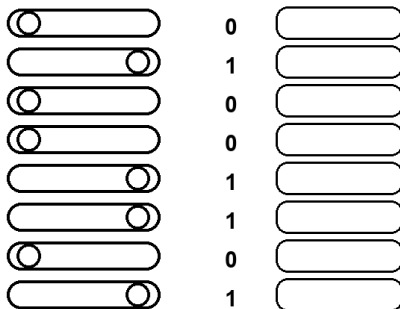
Colour-code place values, switches, pixels and samples

8-BIT PLACE VALUE

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

Decimal value = 77

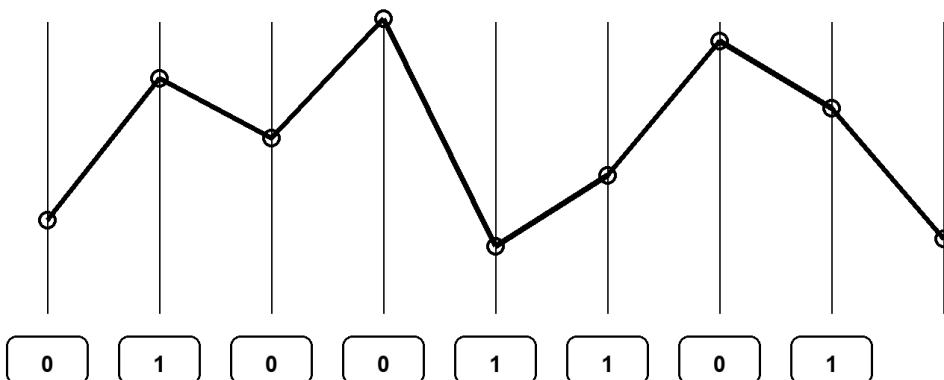
ON / OFF SWITCHES



PIXEL IMAGE

0	0	1	1	1	1	0	0
0	1	0	0	0	0	1	0
1	0	1	0	0	1	0	1
1	0	0	0	0	0	0	1
1	0	1	0	0	1	0	1
1	0	0	1	1	0	0	1
0	1	0	0	0	0	1	0
0	0	1	1	1	1	0	0

DIGITAL 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

The place values are 128, 64, 32, 16, 8, 4, 2 and 1. In 01001101, the 1 bits select $64 + 8 + 4 + 1$, giving 77. The same bits can control switches, pixels and sampled data.

Learning record and next steps

☐ Completed the colouring

☐ Explained key vocabulary

☐ Completed the activity

☐ Used visible evidence

Evidence noticed / vocabulary used

Next step:
