

Kit's Binary Brain-Teaser Quiz

Learning objective: To understand how computers use binary (base 2) to store and process information, and to recognize that all data is represented as a sequence of 0s and 1s.

Help Kit the fox solve these computing puzzles! Read each question carefully and circle the correct answer or write your response in the space provided.

Answer Key: 1. B, 2. True, 3. Bit, 4. C, 5. False, 6. 1, 7. C, 8. True, 9. 0, 10. B. Remember: A bit is the smallest unit of data, and computers use these to represent everything from letters to photos!

Word bank: Binary · Bit · Denary · Switch · Data · Sequence

1. 1. What is the name of the number system that uses only two digits, 0 and 1? A) Denary, B) Binary*, C) Hexadecimal, D) Decimal (1 mark)

2. 2. True or False: A computer uses binary because it is made of tiny electronic switches that are either 'on' or 'off'. (1 mark)

3. 3. What is the special name for a single 0 or 1 in a computer system? (1 word) (1 mark)

4. 4. In binary, what does the digit '1' represent? A) Off, B) Nothing, C) On*, D) Error (1 mark)

5. 5. True or False: Computers process information using the numbers 0 to 9. (1 mark)

6. 6. If a light switch is 'on', which binary digit would represent that state? (1 mark)

7. 7. Which of these is a valid sequence of binary code? A) 102, B) 01A, C) 1101*, D) 1210 (1 mark)

8. 8. True or False: All the photos and games you see on a screen are stored as long strings of binary numbers. (1 mark)

9. 9. If a computer circuit is 'off', which binary digit represents this? (1 mark)

10. 10. Why do computers use binary? A) It is faster to write, B) It is easy for machines to understand using electricity*, C) Humans prefer it, D) It uses less screen space (1 mark)

Draw: Draw a picture of a friendly robot that has binary code (strings of 0s and 1s) scrolling across its screen like a digital waterfall.



Extension challenge: Challenge: If 1 is ON and 0 is OFF, can you write your initials in a 4-bit binary code? Use 1 for every letter in the alphabet (A=1, B=2, etc.) and convert the number into binary!