

Algorithms Colour And Observe Colouring Page

KS4 / GCSE / Year 11 - Computer Science

Trace the binary search for 42 and colour-code sequence, selection and iteration in the flowchart.

ALGORITHMS: SEARCHING AND CONTROL FLOW

Trace each decision and compare the work performed

BINARY SEARCH FOR 42 IN A SORTED LIST

3	8	12	17	23	31	42	56
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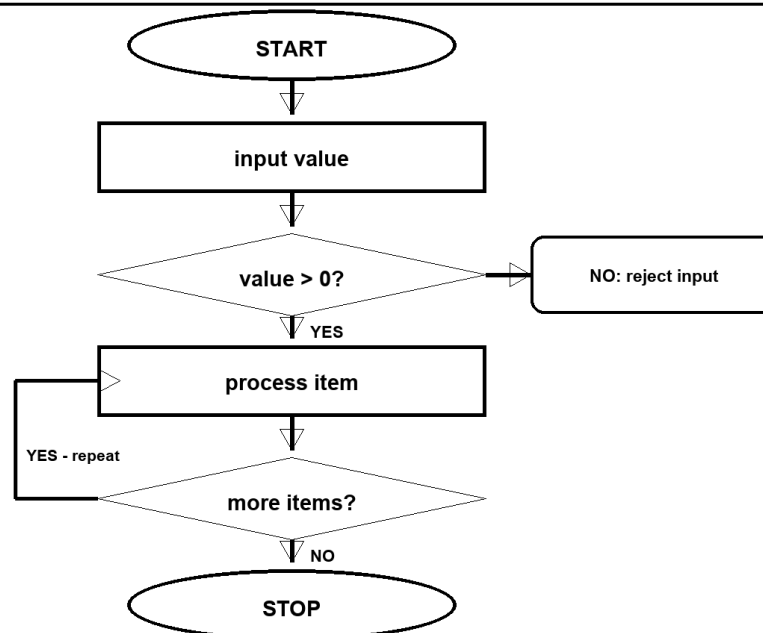
1 Middle value 17: 42 is greater, discard 3-17

2 Middle of remaining range is 31: 42 is greater, discard 23-31

3 Middle of remaining range is 42: target found

Binary search requires sorted data and repeatedly halves the search range

SEQUENCE - SELECTION - ITERATION



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Parent & Teacher Guidance

Curriculum focus

Topic: Algorithms. Develop accurate observation, subject vocabulary and evidence-based explanation. Mapped scope: DfE GCSE subject content and key stage 4 curriculum entitlement.

Before you begin

Review the picture together and ask the learner what they already notice about Algorithms. 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 Algorithms. 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 Algorithms can you explain using the picture?

Answers and checking

No fixed answer is required. Accept well-supported observations that match the curriculum focus and visible evidence.

Learning record and next steps

☐ Completed the colouring

☐ Explained key vocabulary

☐ Completed the activity

☐ Used visible evidence

Evidence noticed / vocabulary used

Next step:
