

## **Binary search - GCSE Computer Science video for the binary search algorithm**

GAME VOICE: Binary Search Smash.

D-KODE: Ha ha ha.

NARRATOR: Choose which type of list to search: ordered or unordered.

D-KODE: I'm ready to search! Unordered.

NARRATOR: Unordered list is locked.

D-KODE: What?

NARRATOR: Binary search only works with an ordered list.

D-KODE: Why do you offer it then?

GAME VOICE: Load ordered array. Load index.

NARRATOR: Target number is 45. Okay, hide the numbers.

GAME VOICE: Round one.

D-KODE: Let's do this!

NARRATOR: Add the values of the first and last position.

D-KODE: Okay.

NARRATOR: Halve the result to find the middle of the row. Ready?

D-KODE: Ready!

NARRATOR: Find number 45.

D-KODE:  $0 + 8 = 8$ . Half of that is ... Boulder 4. Smash. 38.

NARRATOR: Is that higher or lower than the search target, 45?

D-KODE: Lower than 45.

GAME VOICE: Say bye bye.

NARRATOR: The other low numbers can go too.

GAME VOICE: Round two.

NARRATOR: Add the values of the first and last position. Halve the result to find the middle of the row. Ready?

# **BBC** Bitesize

D-KODE: Ready!  $5 + 8 = 13$ . Half that = 6.5.

NARRATOR: Round it up.

D-KODE: Why?

NARRATOR: Because the element positions are all integers or whole numbers.

GAME VOICE: Whole numbers don't split.

D-KODE: Okay then. Boulder 7. Smash. 87.

NARRATOR: Is that higher or lower than the search target, 45?

D-KODE: Higher than 45, so ...

GAME VOICE: Say bye bye.

NARRATOR: The other high numbers can go too.

GAME VOICE: Round three.

NARRATOR: Add the values of the first and last position. Halve the result to find the middle of the row. Ready?

D-KODE: Ready.  $5 + 6 = 11$ . Half of that = 5.5. Round it up means ... Boulder 6. Smash. 53.

NARRATOR: Is that higher or lower than the search target, 45?

D-KODE: Higher than 45, so ...

GAME VOICE: Say bye bye. Last block must be the target.

D-KODE: Binary smash.

GAME VOICE: 45.

NARRATOR: You found the target.

D-KODE: Ha ha ha ha ... Target! Binary Search is super-fast.

NARRATOR: That's right. Linear search would have taken six comparisons but binary search took only three.

D-KODE: Yes!