

# Computer Science

↳ What is a computer?

Input → output (e.g. sextant)

device that can run program(s)

machine that takes information → result.

Device that changed history!

↳ Study of computation - transforming information.

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Start with a number n. — input

repetition

Repeat the following as long as  $n > 1$ :

arithmetic

- If n is even, divide it by 2.
  - Otherwise, multiply it by 3 and add 1.
- conditional

11 → 34 → 17 → 52 → 26 → 13 → 40 → 20  
1 ← 2 ← 4 ← 8 ← 16 ← 5 ← 10 ← 20  
3

Common

## 5 Aspects of Computation

blocks you selected  
what world looks like.

① input

② output

③ arithmetic

④ conditionals — "if"

⑤ repetition — doing something repeatedly.

actions of character

if lava ahead...

↳ repeat n times  
...

## Errors

- ① Syntax error — invalid program. eg. spelling error, grammatical error, etc.
- ② runtime error — something goes wrong while program is running. ie. crash. — eg. lava.
- ③ Semantic error — program runs, but does wrong thing.