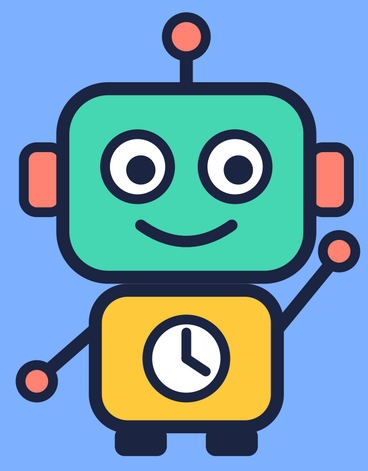
COMPUTATIONAL THINKING

# Stuck? Pick a thinking tool.



**Computational thinking means solving a problem with a clear plan. These eight tools help you make one.**

## 1 Break it down

DECOMPOSITION

Split a big problem into smaller parts.

ASK YOURSELF

**What smaller jobs is this made of?**



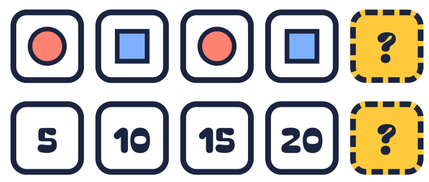

## 2 Spot the pattern

PATTERN RECOGNITION

Notice what repeats or follows a rule.

ASK YOURSELF

**What repeats? What is the rule?**




## 3 Keep what matters

ABSTRACTION

Keep the details that matter. Leave out the rest.

ASK YOURSELF

**Which details do I really need?**

~~Mia has a red bag.~~ She has 12 stickers. ~~It is sunny.~~ She gives 5 away.

12 − 5 = 7

## 4 Make a plan

ALGORITHM

Write clear steps, in the right order.

ASK YOURSELF

**What are the steps, in order?**

1. Paste on the brush
2. Brush every tooth
3. Rinse and wash up

## 5 Do it again

LOOP

Repeat steps without writing them again.

ASK YOURSELF

**Which steps can I repeat?**

repeat 4 times:
- move forward
- turn right



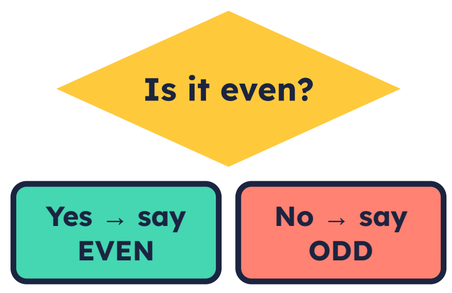
## 6 If this, then that

CONDITIONAL

Ask a yes-or-no question, then choose a path.

ASK YOURSELF

**What yes-or-no question decides?**




## 7 Bug hunt

DEBUGGING

Find mistakes and fix them.

ASK YOURSELF

**Where does it first go wrong?**

COUNT BY 5S

5 10 15 21 25

Bug found! 15 + 5 is 20, not 21.

## 8 Find it faster

EFFICIENT

Get the job done in fewer steps.

ASK YOURSELF

**Is there a way with fewer steps?**

