

Play Code Learn

DINOSAUR LOOPS



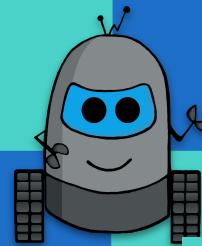
Lesson Three: Prediction & Debugging

Lesson Three Learning Outcomes

Learning Intention:

...how to predict and debug.

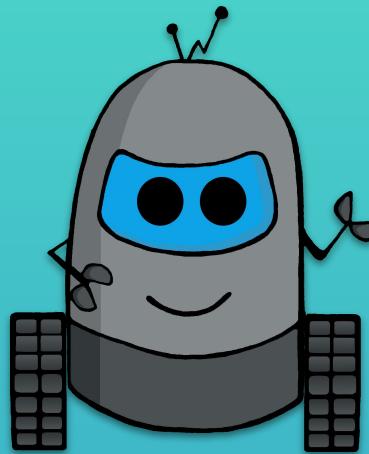
To learn how to predict what will happen next by spotting clues.



To explain why we think our predictions will happen.

To understand how to spot errors in algorithms and debug them.

To practise predicting outcomes from algorithms.



Making predictions

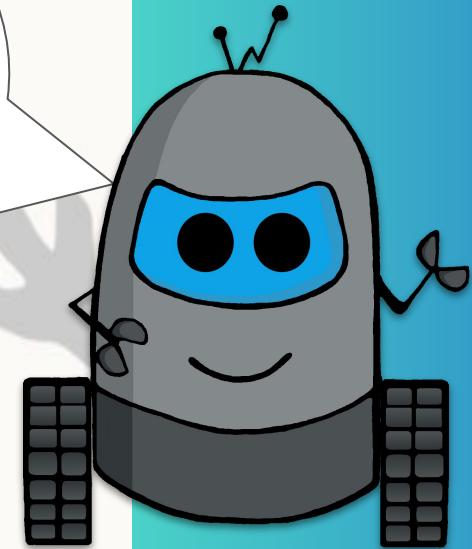
Activity: What comes next?

Watch your teacher!

They are going to act out an activity.

Can you guess what should happen next?

"I think _____ will happen
next because _____."

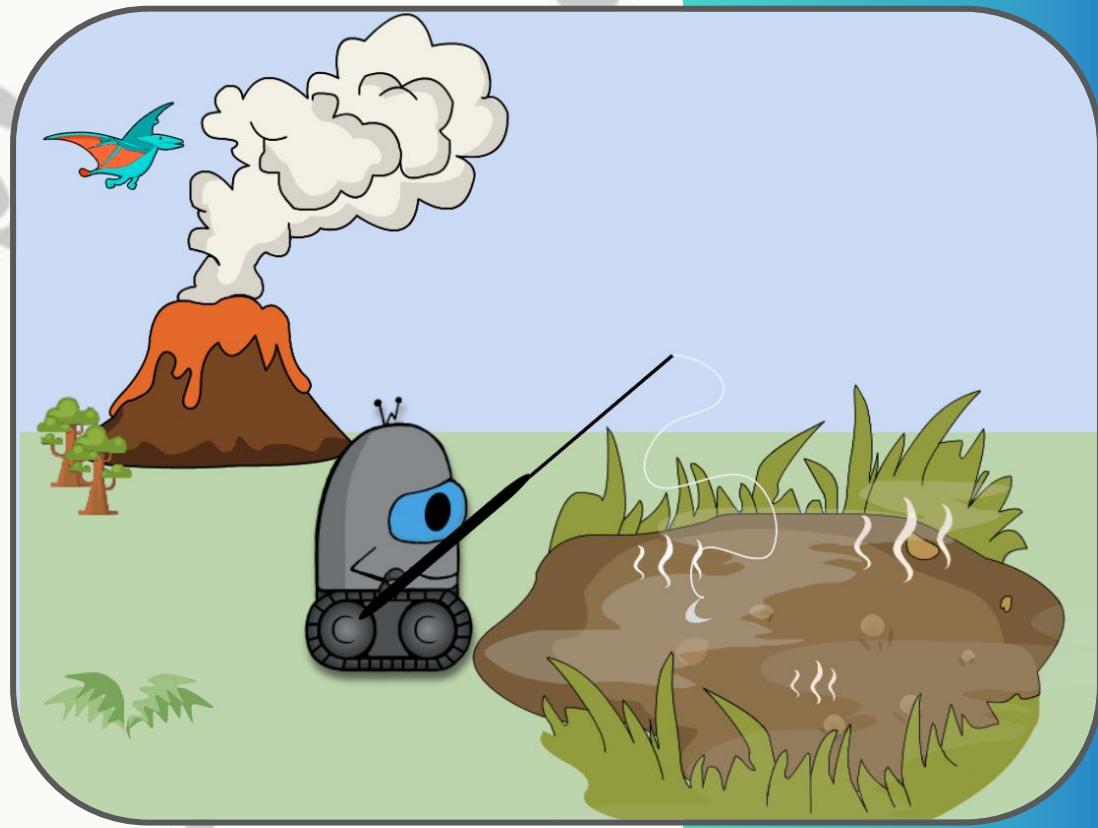


Activity: What comes next?

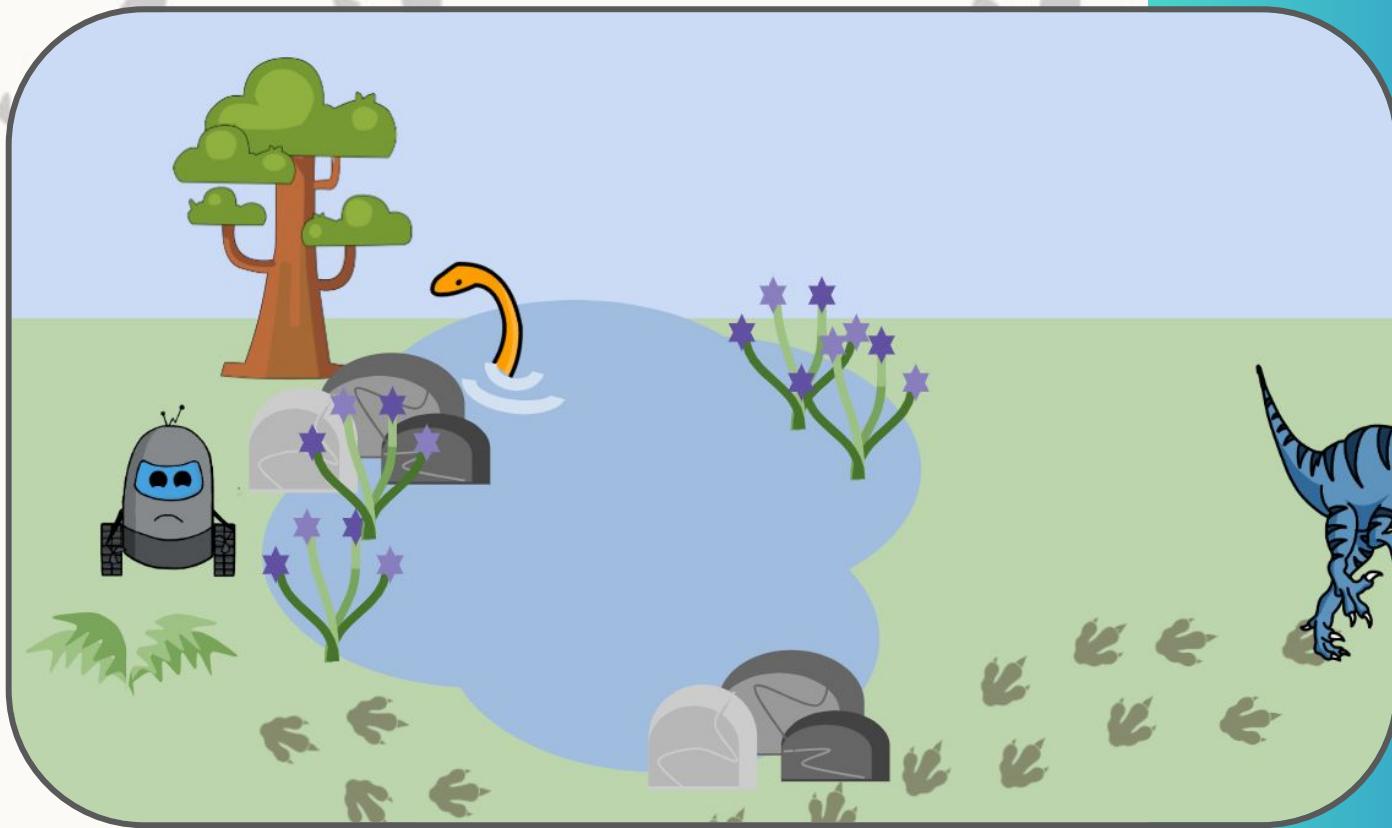
Oh my...

...Explorer Ed is up
to something!

*Look at the image of
Explorer Ed and try to
guess what will happen
next!*



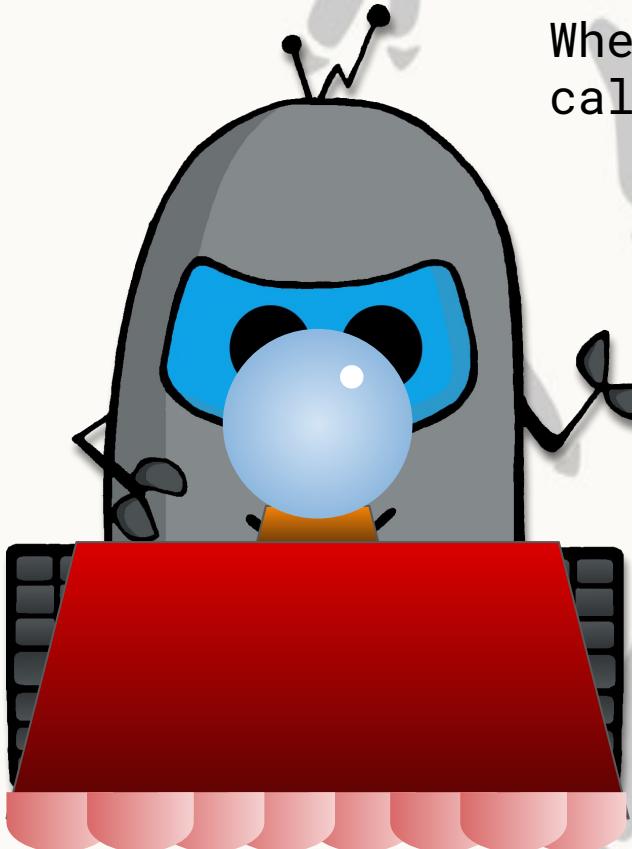
Activity: What comes next?



What do you think could happen next?

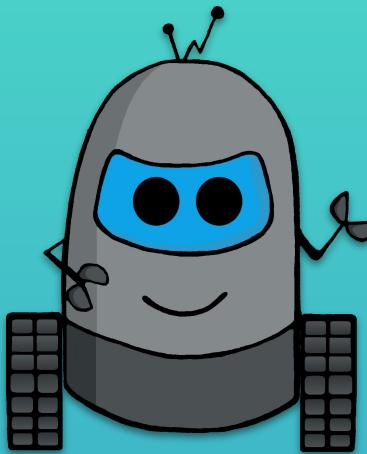
Predicting what happens next

Discussion: What is prediction?

A cartoon illustration of a grey robot head with a blue visor and a large blue circular sensor on its front. It has small black arms and a red rectangular base with pink feet. It is positioned on the left side of the slide.

When you guess what is going to happen it is called **prediction**.

- We can use clues to predict what is going to happen.
- It doesn't really matter whether your prediction is correct or not.
- What's important is that you are paying attention to the clues and thinking about what might happen next.



Using prediction to spot errors

Prediction

Discussion: Where will Explorer Ed end up?

You are going to read an algorithm.

Try to **predict** where Explorer Ed will finish.

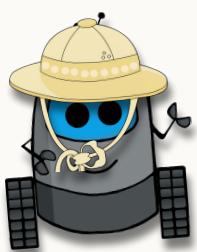
Use:

1. A **quick glance**, then predict (5 seconds)
2. A **longer look**, then predict (30 seconds)
3. A **final figure it out** and test!



Prediction

Discussion: Where will Explorer Ed end up?



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Prediction

Discussion: Where will Explorer Ed end up?



Did you *predict* correctly?

Did you use:

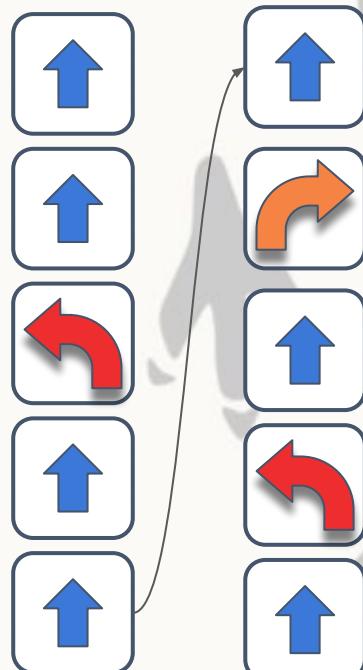
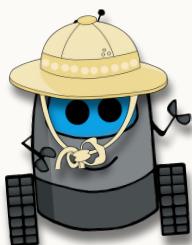
1. A quick glance?
2. A longer look?
3. A figure it out test?

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Prediction

Discussion: Where will Explorer Ed end up?

Let's try again...



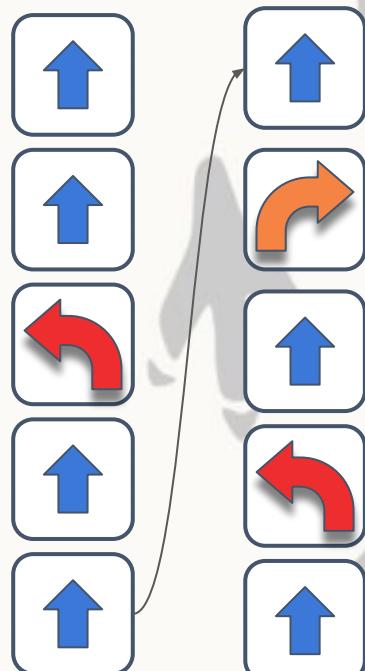
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Prediction

Discussion: Where will Explorer Ed end up?

Did you *predict* correctly?



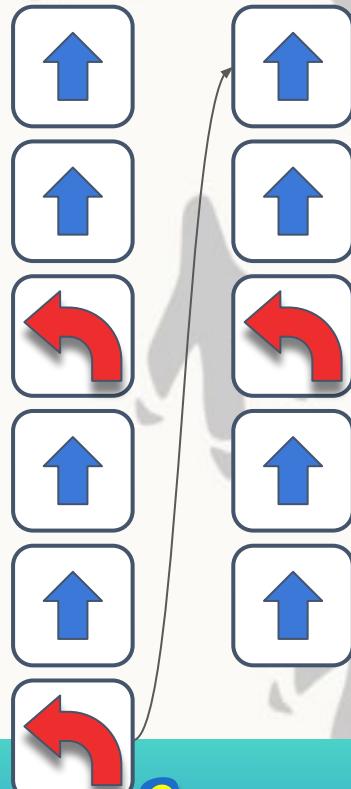
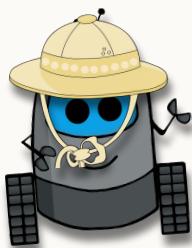
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Prediction

Discussion: Where will Explorer Ed end up?

Let's do one more...



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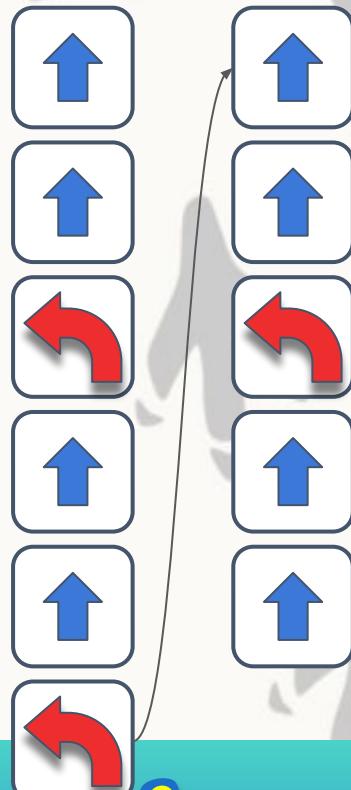
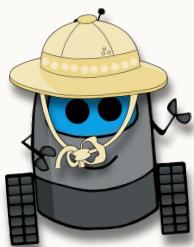
Play Code Learn: Dinosaur Loops

Prediction

Discussion:

Did you predict correctly?

Where will Explorer Ed end up?



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Finding errors

Discussion: Where is the error?



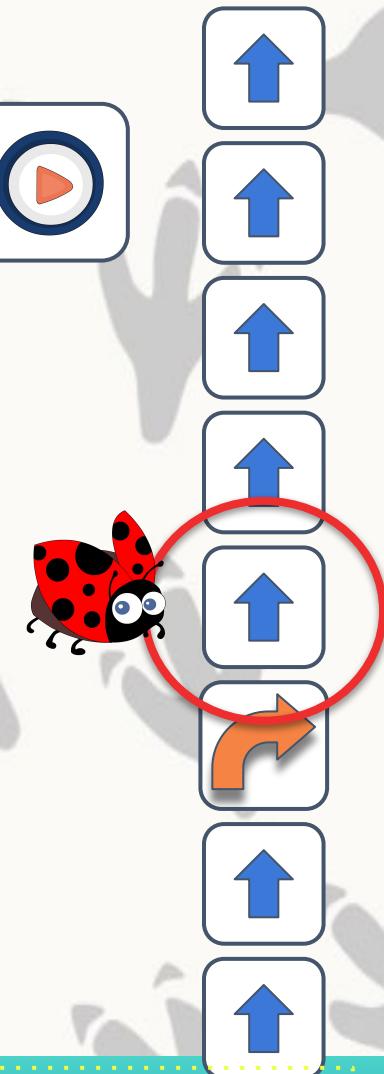
Look at the algorithm.

Does it get Explorer Ed from the start to the finish?

Hint: Use prediction to help!

Finding errors

Discussion: Where is the error?



Did you spot the error?

There was an extra forward arrow!

Did you know?

An **error** in an algorithm is called a bug!



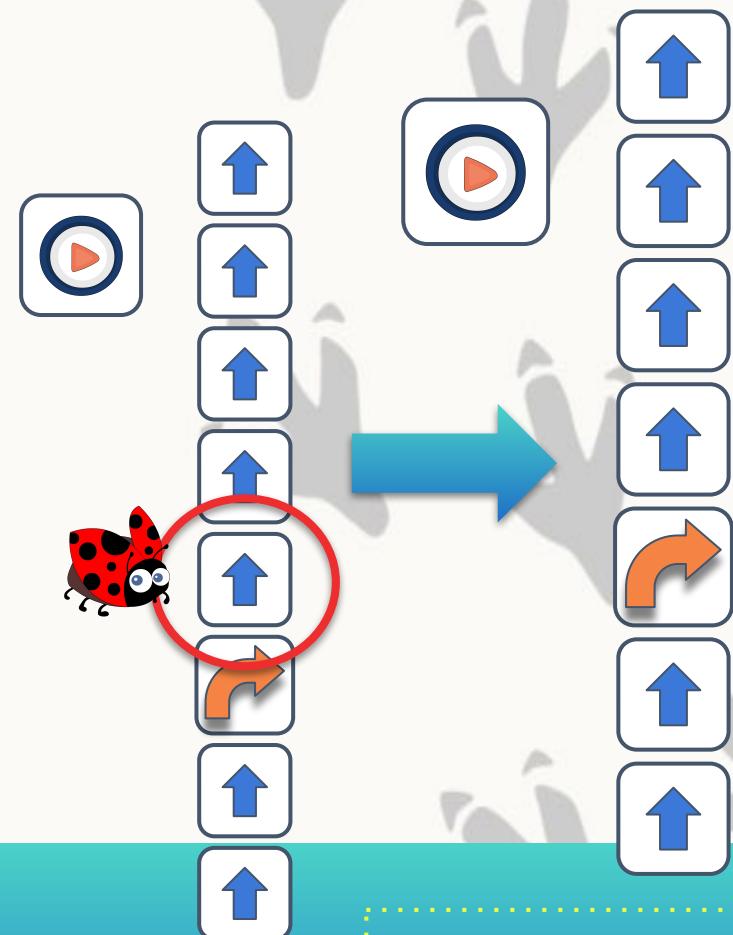
Finding errors

Discussion: How can you solve the **error**?



When you try to solve the **error** it is known as **debugging**.

Can you see the difference between the algorithm with the **error** and the **debugged** algorithm?



Is this now correct?

Finding errors

Discussion: Can you debug the error?



Can you spot the error and debug the algorithm?



Debugging

Activity: Dinosaur Loops

It's your turn to practise writing algorithms and **debugging** with the Dinosaur Loops kit!



Start by setting up the problem with the dinosaur loops tiles & cards, then create the algorithm.

Can you **predict** what will happen?

Can you find the **bug(s)**?

Can you re-write the **algorithm** so that is it correct?

Look at the map. Find the start and finish flags. Read the algorithm. Spot the bug(s). Debug and re-write the algorithm. Try to dodge the volcano & bubbling mud!

Map

Algorithm where is the bug?

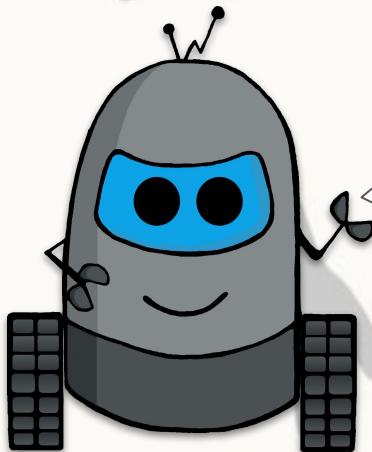
Algorithm debug and write the new algorithm

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Debugging

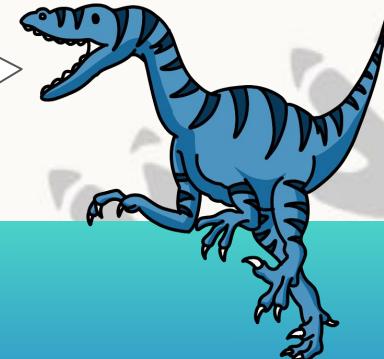
Discussion: How do you spot a bug?



How do you
spot a **bug**?



I start by
trying to
predict what
will happen!



Debugging

Discussion: How do you spot a bug?

How can you spot a **bug**?

The best way is to break down the task and read slowly through your algorithm or program step by step.



Rubber Duck debugging

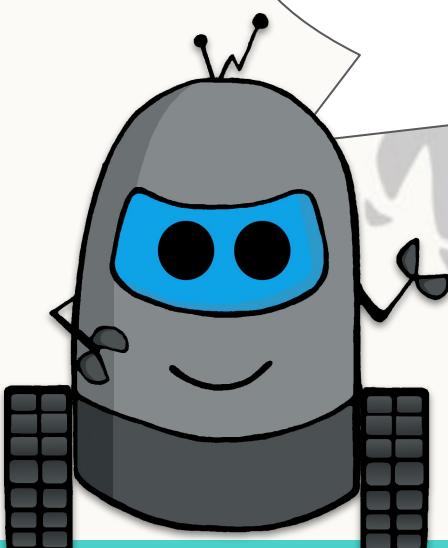
One way to find a **bug** is to use a technique called **Rubber Duck debugging**. This is where programmers talk to a rubber duck!

By reading out loud the program or algorithm slowly, programmers spot the **bugs** hidden inside their instructions. So if you need to **debug** - talk to a duck!

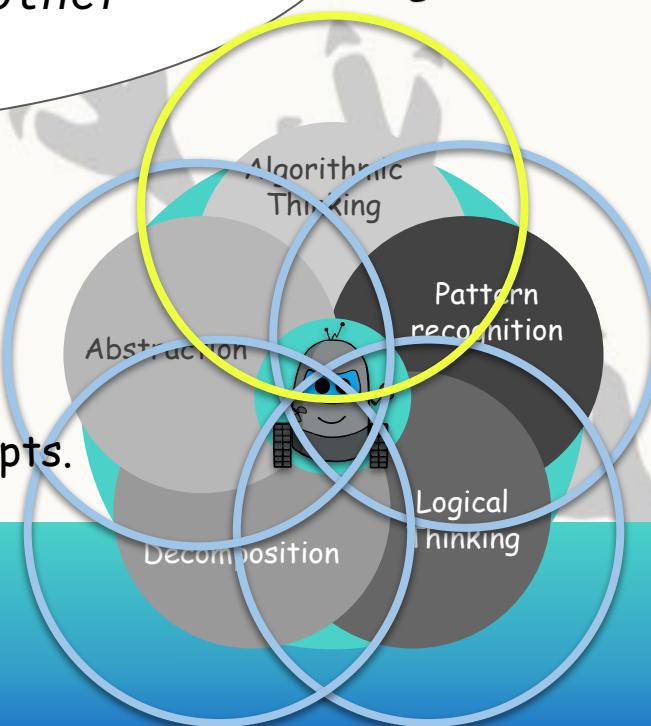
Debugging

Discussion: Debugging & Computational Thinking

*In computational thinking, **predicting, spotting errors** and **debugging** is part of writing a successful algorithm but they can also use all of the other concepts too!*



Computational thinking concepts.



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Extension Activity



Literacy prediction

Choose two books. Can you predict what will happen in the story by looking at the front cover?

Book One Book Two

What does the title tell you? What does the title tell you?

What does the image tell you? What does the image tell you?

What do you think the story is about? What do you think the story is about?

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Literacy prediction

Let's practise prediction.

Grab a book.

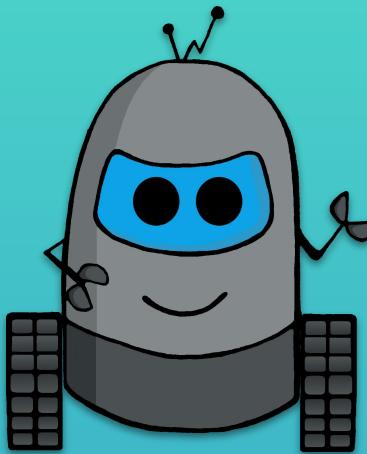
Look at the front cover:

What do you think the book is about?

What does the title tell you?

What do the images tell you?

Read the book - was your prediction correct?



Reflection

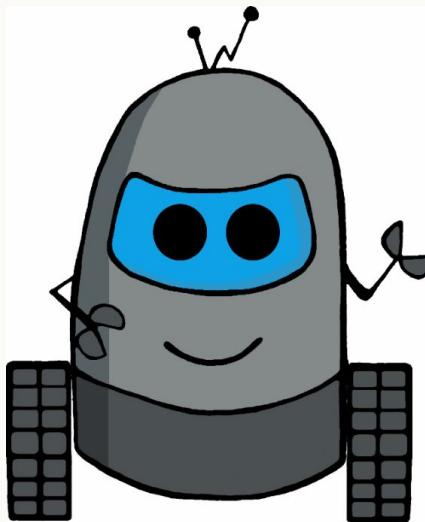


Reflection: Lesson Three

Learning Intention:

...how to predict and debug.

How do you feel about today's lesson?



What were the key takeaways from the lesson today?

What would you like to learn more about?

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Thank you!