

Play Code Learn

DINOSAUR COMMANDS



Lesson One: Computational Thinking Concepts

Lesson One Learning Outcomes

Learning Intention:

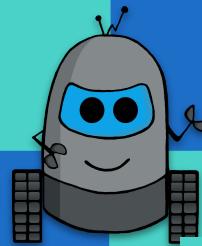
....to recognise the different computational thinking concepts.

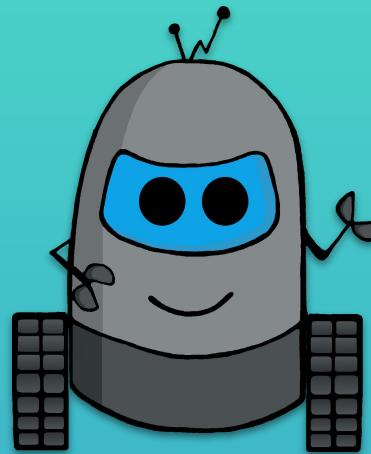
To use computational thinking concepts.

To learn the concepts of computational thinking.

To develop new thinking skills.

To give & follow instructions.



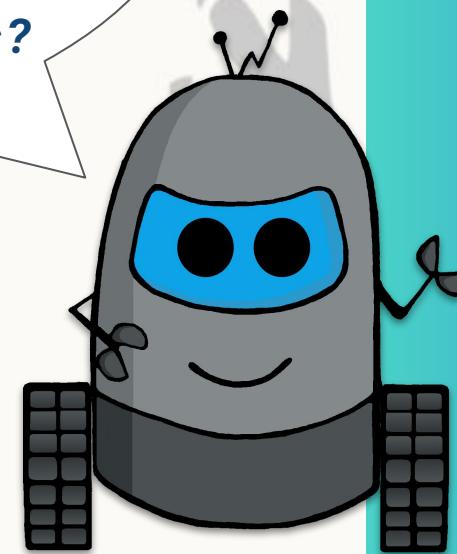


Concepts of Computational Thinking

Discussion: Computational Thinking

What is computational thinking?

What do you think this means?



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Can computers think?



What do you think now?

<https://youtu.be/W1LWMk7JB80>

Discussion: Computational Thinking

So, what is **computational thinking**?

It's not thinking like a computer,
as computers **do not** and **cannot** think!

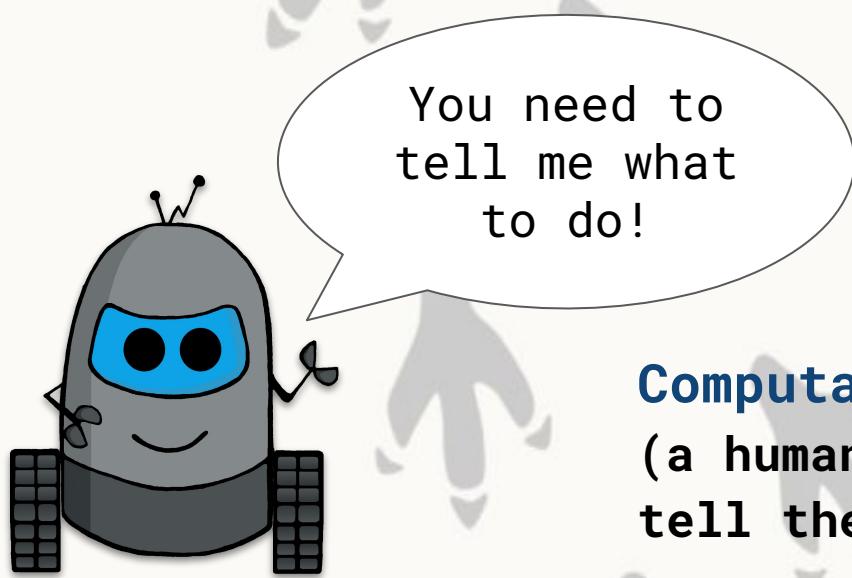


Thinking computationally is not programming either...

Programming tells a computer what to do and how to do it.

Discussion: Computational Thinking

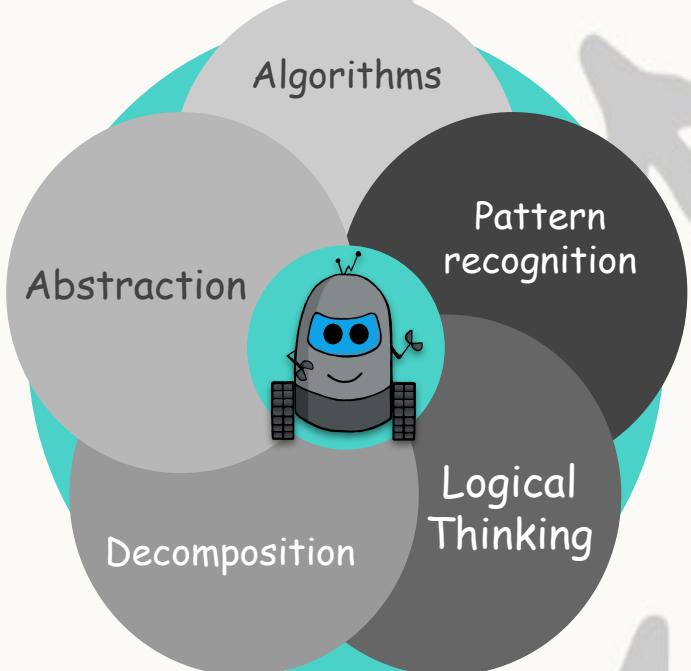
Computational thinking is a thought process.



Computational thinking enables you (a human) to work out exactly what to tell the computer to do.

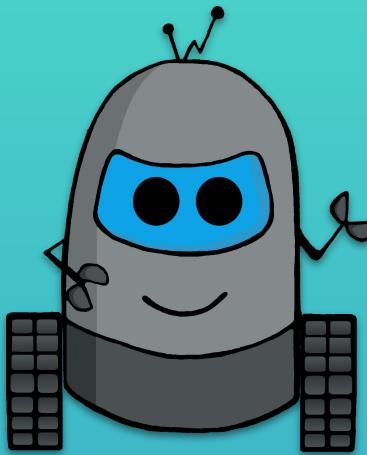
A computer or digital device *will only* follow the instructions it has been given.

Why is computational thinking important?



Computational Thinkers are:

- Real world problem solvers
- Innovators
- Moving from being users (consumers) to creators
- Persistent and resilient
- Collaborative
- Developing communication skills
- Leading learning through inquiry
- Develop a growth mindset



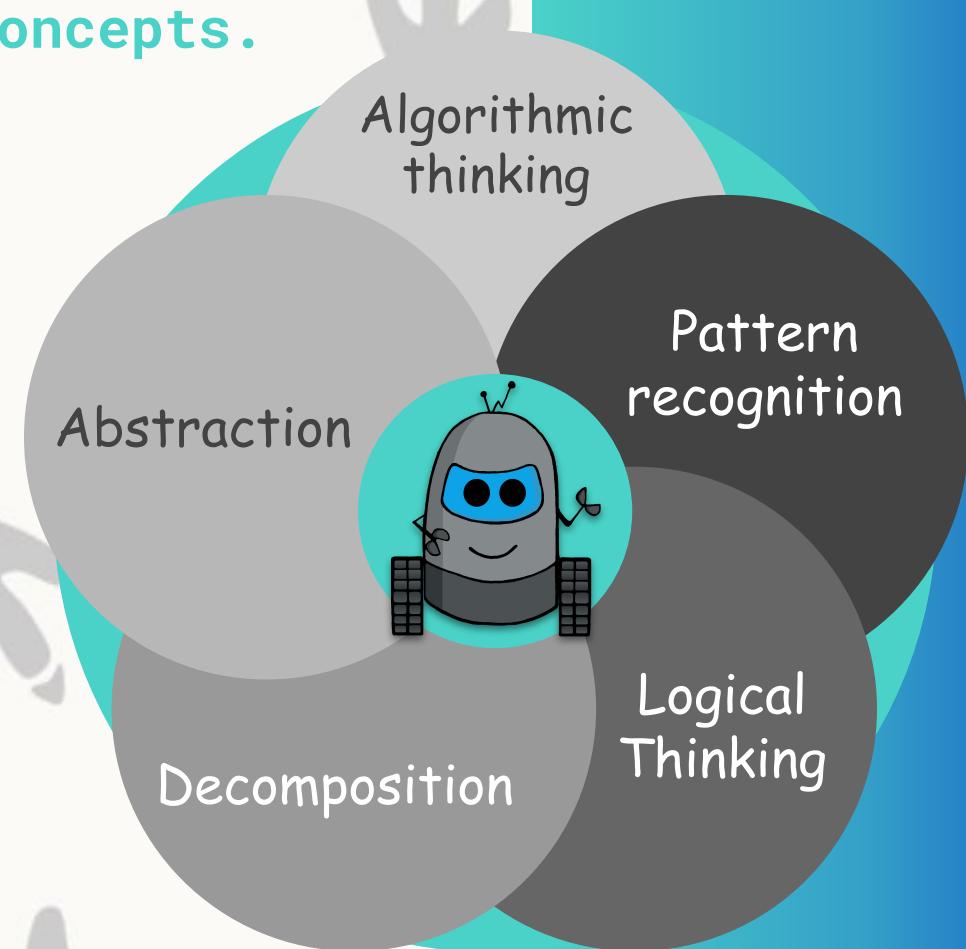
Putting CT into practice

What is computational thinking?

Computational Thinking Concepts.

In the next few lessons you will learn more about these different concepts.

What do you think these words may mean?



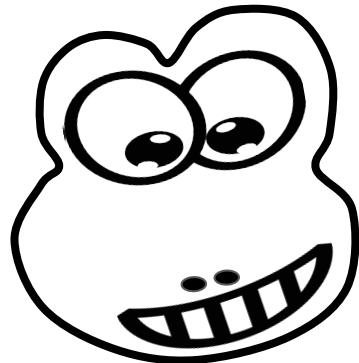
Computational Thinking in action!

Activity: Making dinosaurs

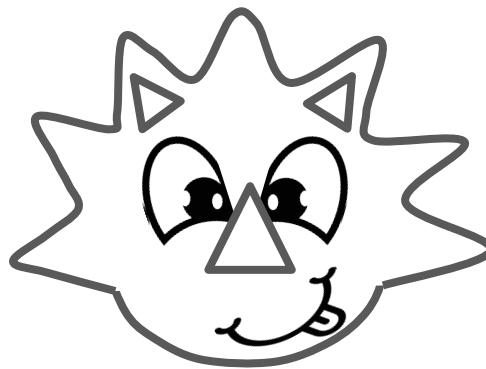
Pattern recognition:

Look at the cartoon dinosaur heads:

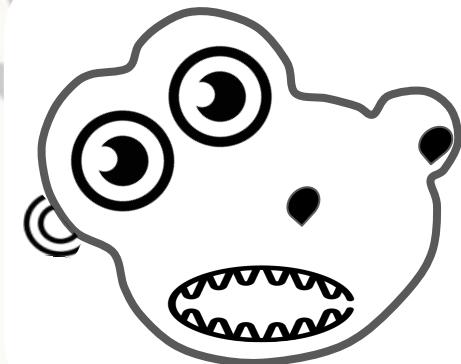
what patterns can you see? What features do they all have?



Classification: Dippy Docus



Classification: Horny Tricero



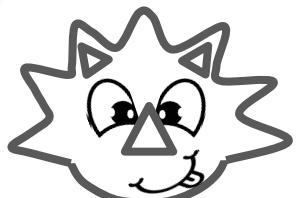
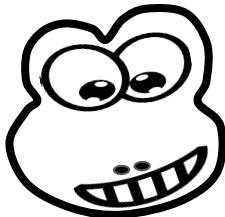
Classification: Roar Rex

Computational Thinking in action!

Activity: Making dinosaurs

Decomposition:

Now look for similarities and make a list of attributes that all the dinosaurs have.



Example:

All the dinosaurs have a face shape.

All the dinosaurs have ...

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Play Code Learn: Dinosaur Commands

Extra Activity:

Use this list to make a Dinosaur catalogue:

Three mobile phone screens displaying different versions of a 'Dinosaur Catalogue'. Each screen has sections for Face Shape, Eye Shape, Mouth Shape, Nose Shape, and Ear Shape, each with various options like 'Dippy', 'Horny', 'Rex', etc. The phones also include instructions for creating a catalogue and writing algorithms to generate new dinosaurs.

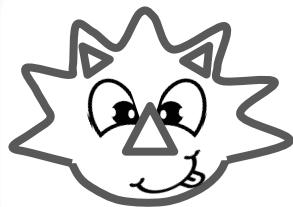
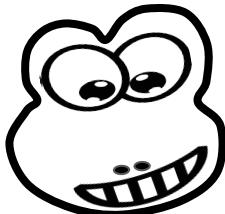
Computational Thinking in action!

Activity: Making dinosaurs

Abstraction:

To describe a dinosaur it may be easier to explain the differences!

What is different? Take it away!



Example:

The dinosaur has a _____ face.

The dinosaur has _____ eyes.



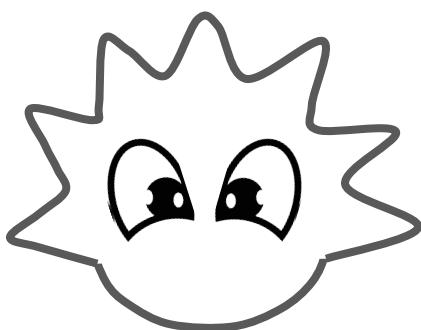
Use the similarities and differences to write abstracted sentences that can help to describe **any** dinosaur.

Computational Thinking in action!

Activity: Making dinosaurs

Algorithmic Thinking

1. Test your abstracted sentences and dinosaur catalogues.
2. Find a partner.
3. Choose one dinosaur to explain (*do not tell your partner the one you have chosen!*)
4. Use abstracted sentences to explain the features that need drawing for each dinosaur classification.



Example:

The dinosaur has a _____ horny _____ face.

The dinosaur has triceratops eyes.

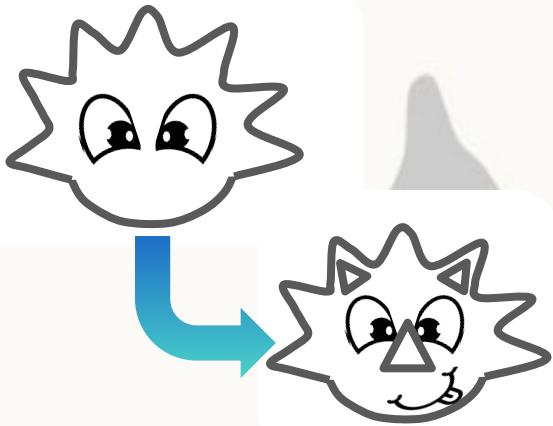
Add more instructions to make a more detailed algorithm!

Computational Thinking in action!

Activity: Making dinosaurs

Algorithmic Thinking

Check the final drawing - spot any bugs (errors) & debug!



The dinosaur has a _____ **horny** _____ face.

The dinosaur has **tricer****o** eyes.

The dinosaur has **tricer****o** mouth.

The dinosaur has **tricer****o** nose.

The dinosaur has **tricer****o** ears.

Extra Activity:

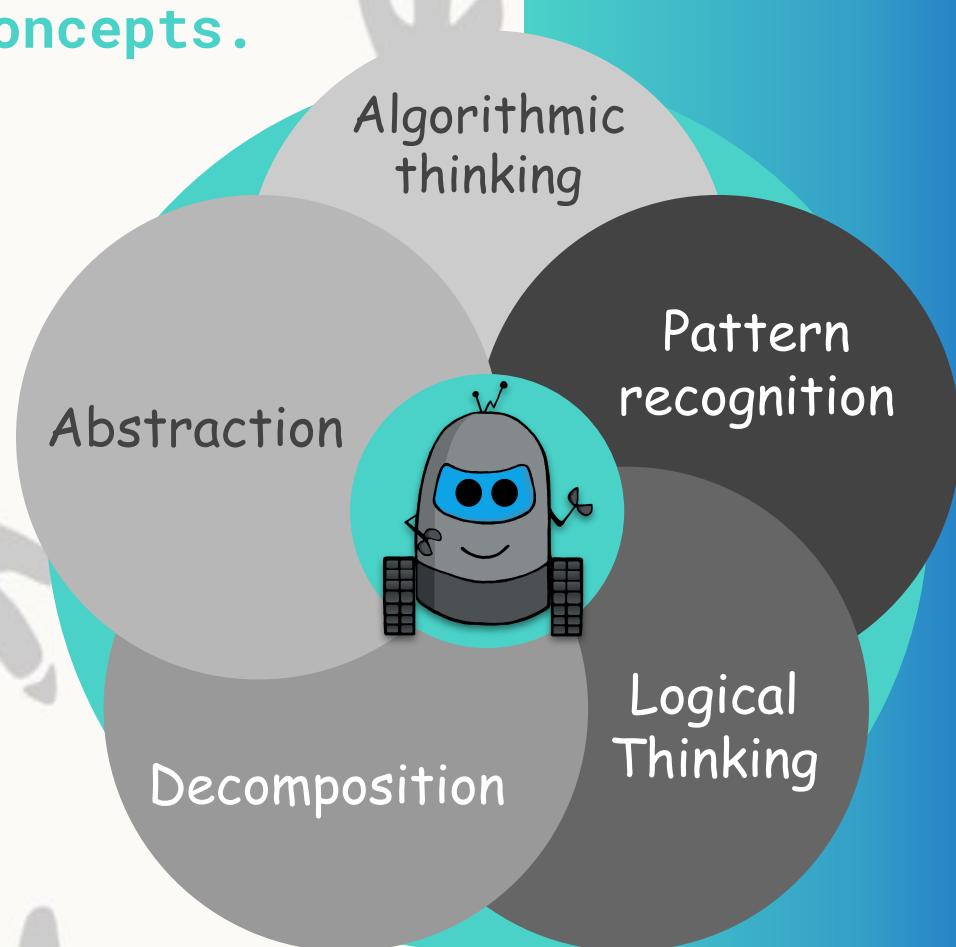
Now have some fun and design your own dinosaur - what happens if you mix and match dinosaur attributes in your instructions?

Recapping computational thinking

Computational Thinking Concepts.

Which concepts have you used today?

How did you use them?



Extension Activity



Computational Thinking: Mix and match

Cut out the words and the descriptions. Can you match each word to the correct description?

Algorithmic Thinking

Decomposition

Abstraction

Pattern recognition

Logical Thinking

Computational Thinking

The ability to filter out unimportant information to make a problem easier to solve.

Different concepts and methods used in computer science. It is a problem solving process.

A set of rules, steps or instructions to complete a task efficiently and logically.

The ability to spot patterns in information.

A way of getting to a solution through a clear definition of steps.

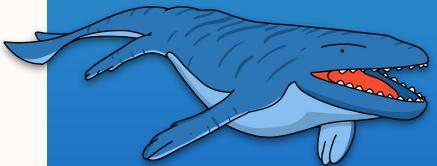
Breaking down data, processes or problems into smaller parts.

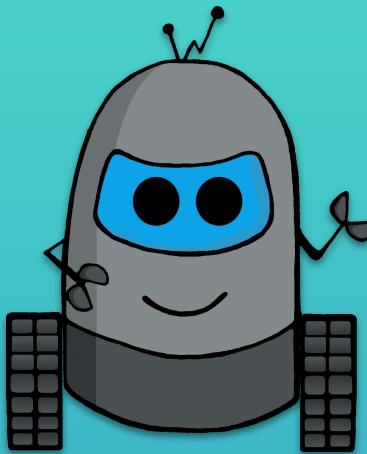
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Play Code Learn:Dinosaur Commands

Meaning Match Game

Use your understanding of computational thinking to match the descriptions to the key vocabulary.





Reflection

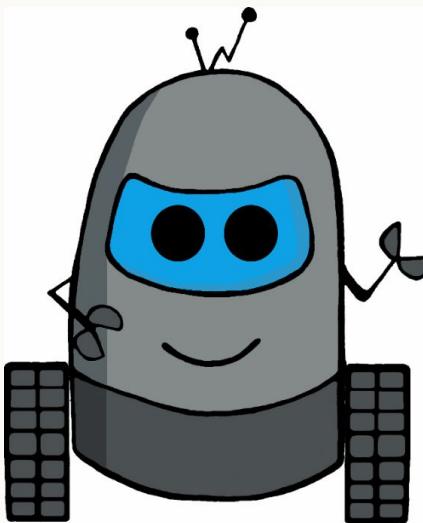


Reflection: Lesson One

Learning Intention:

...to recognise the different computational thinking concepts.

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!

