

Year 2 Autumn 2 Computing – Algorithms and debugging



Big Question

How can I make my algorithm efficient?

Key Vocabulary for the unit:

Abstraction: To pick out the important information

Algorithm: A clear set of the instruction to carry out a task.

Artificial intelligence: Computers that can perform the tasks that humans normally do.

Bug: An error or mistake in computer code.

Data: Information used for a specific purpose or investigation.

Debug: To fix the error in code.

Decompose: To break something down into smaller chunks.

Error: A mistake.

Key Features: Important parts of something.

Loop: A repeated sequence of instructions.

Unnecessary: Not needed.

What I should already know from Year 1:

- ◆ I know that an algorithm is when instructions are put in an exact order
- ◆ I know that decomposition means breaking a problem into manageable chunks and that it is important in computing.
- ◆ I that we call errors in an algorithm 'bugs' and fixing these 'debugging'.

Powerful knowledge/skills for this unit:

- ◆ To understand what machine learning is and how it enables computers to make predictions.
- ◆ To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.
- ◆ To know that abstraction is the removing of unnecessary detail to help solve a problem.

Abstraction: Key information

Remember to **take spare clothes**, including t-shirts, trousers, a coat, underwear and a hat. There will be a lot of **wet weather** in the rainforest, so wrap up to stay dry.

You might hear lots of animals, such as monkeys and parrots. **Keep close to the adults** and be careful where you step.

Do not forget to **take a drink and a snack**.

Decomposition: Smaller chunks

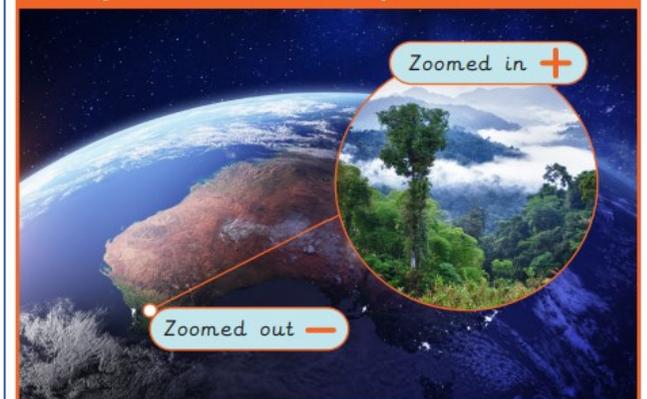
List for the rainforest:

- Take spare clothes
- Wet weather
- Keep close to the adults
- Take a drink and a snack



Useful diagrams for the unit:

Zooming into an Australian rainforest on Planet Earth.



Algorithm for making a hot chocolate:

1. Fill the kettle with water
2. Boil the water
3. Fill a mug with the boiled water
4. Add a teaspoon of cocoa powder
5. Add a drop of milk
6. Stir well



