Computational Thinking

Why computational thinking?

Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions.

We can then present these solutions in a way that a computer, a human, or both, can understand.

Computational thinking encourages playful thinking, but gives it structure so that the skills students are learning can be transferred to more complex tasks later on.

Solving complex problems (1)

What are the commonly used strategies/ steps?

Solving complex problems (2)

Computational thinking involves taking that complex problem and breaking it down into a series of small, more manageable problems (**decomposition**).

Each of these smaller problems can then be looked at individually, considering how similar problems have been solved previously (**pattern recognition**)

Solving complex problems (3)

and focusing only on the important details, while ignoring irrelevant information (**abstraction**).

Adapting solutions into different problem states when you can spot common themes between patterns (**generalisation**).

Next, simple steps or rules to solve each of the smaller problems can be designed (**algorithms**).

Assignment

Research and prepare a presentation on one of the topics

Timeline:

- Review: 3/ 4 Aug
- Presentation: 5 Aug 3pm

References

Introduction to computational thinking
https://www.bbc.co.uk/bitesize/guides/zp92mp3/revision/1