Home-School Learning Collaboration – Computing

Topics in this cycle: Computational thinking	Taught: Spring1	Year Group: 8

Key knowledge/concepts to be learnt ('Tell me about….')	Websites/blogs/YouTube links and further reading to deepen and consolidate learning
• **What is computational thinking?** Where might computational thinking be useful? Which scenarios might computational thinking be needed in? In which jobs might decomposition be useful? • **What is pattern recognition?** Why is pattern recognition important in computing? Where do patterns exist in disciplines such as Science, Languages or Mathematics? • **What is abstraction?** Where might you already be using abstraction skills in your life already? • **What are some examples of algorithms?** What 3 factors are important when creating an algorithm? What is a way of visualising an algorithm?	**Video clips** Pattern recognition https://www.youtube.com/watch?v=SixLnIDV1yY Abstraction https://www.youtube.com/watch?v=N1A9qkWs538 Algorithms https://www.youtube.com/watch?v=ZnBF2GeAKbo

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Key Vocabulary and Definitions To Be Learnt	
Computational thinking	Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions.
Algorithm	An algorithm is a plan, or a set of step-by-step instructions, often to solve a problem.
Pattern recognition	Pattern recognition involves finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems more efficiently.
Abstraction	Abstraction involves filtering out – essentially, ignoring - the characteristics that we don't need in order to concentrate on those that we do.
Flowchart	A flowchart is a visual representation of the sequence of steps and decisions needed to perform a process or solve a problem. Flowcharts normally use standard symbols to represent the different types of instructions. These symbols are used to construct the flowchart and show the step-by-step solution to the problem.

What Will The Assessment Look Like?

Optional: Create an algorithm on how you decide what clothes to wear when you wake up.

May/June assessment as part of Assessment Week:

- 50 marks
- 3 sections. Section A is short answers, Sections B and C require longer answers for unstructured questions

Family Learning Opportunities

Research the life of the famous mathematician Al-Khwarizmi

What is his link to algorithms?