



Hi, Mr Halliburton here  
and this is **PART 1** of my  
all ages

"Computing Mini Missions"

These quick, easy to do  
activities provide fun ideas  
to get children practising  
their computational  
thinking skills.

# Computational Thinking.

I have split the missions into the **six computational thinking concepts** so it's easy to discover new ways to introduce and reinforce learning from school and at home.

**Algorithms** - An algorithm is a precise sequence of instructions, or set of rules, for performing a task.

**Abstraction** - Abstraction is about simplifying things - identifying what is important without worrying too much about detail..

**Evaluation** - We use evaluation when we make judgements based on different factors, including the end result.

**Decomposition** - Decomposition is the process of breaking down a task into smaller, more-manageable parts. It has many advantages. It helps us manage large projects and makes the process of solving a complex problem less daunting and much easier to take on.

**Logical reasoning** - Logical reasoning helps us explain why something happens. Logic is used throughout the activity as your child/children use their existing knowledge of spelling rules and rhyme from the information they are given (the letters) to work out the code.

**Patterns** - By spotting patterns we can make predictions, create rules and solve other problems

<b>Algorithms</b> - Making steps and rules	<b>Abstraction</b> - Removing unnecessary detail	<b>Evaluation</b> - Making judgements	<b>Decomposition</b> - Breaking down into parts	<b>Pattern</b> - Spotting and using similarities	<b>Logic</b> - Predicting and analysing
<p>Think about something you have made or make something to eat with your child. Can they draw or write the instructions (an algorithm) for someone else to follow to recreate the dish?</p>	<p>Play the game, 'I Tell' with your child which is like 'I spy', but you use 3 adjectives to describe the item you're thinking of and see if the other person can guess it.</p>	<p>'What Worked Well!' Ask your child about the home learning they completed yesterday, what went well? How do they know - what criteria are they using to measure their success against?</p>	<p>Ask your child to choose an item they can see. Ask them to sketch it and break it down by labelling as many different parts as possible. This can be run as a competition - who can break it down the most?</p>	<p>Ask your child to pick a range of leaves or petals (carefully) and sort them based on similarities and differences. How many different ways can they sort them? What features are they using to sort them?</p>	<p>Play noughts and crosses with your child. This game is full of logical thinking. Ask your child to explain where they plan to go with each move and why.</p>
<p><b>Learning</b> Algorithms are used in everyday life, such as recipes. It is just producing a set of instructions or rules which can be followed accurately.</p>	<p><b>Learning</b> Abstraction is about simplifying things and focusing on important information. This game helps focus on the important adjectives which describe what they're thinking of.</p>	<p><b>Learning</b> Evaluation is about making judgements in a systematic way. Here your child is evaluating their own efforts by considering what criteria to judge themselves against.</p>	<p><b>Learning</b> In computing decomposition allows us to break complex tasks into more manageable tasks. Here your child practises decomposing objects around them.</p>	<p><b>Learning</b> Your child is making careful observations and identifying similarities and differences between objects, which helps identify patterns.</p>	<p><b>Learning</b> This game encourages your child to think logically about the implications of each move. Encourage them to share their thought process.</p>