



Hi, Mr Halliburton here  
and this is **PART 4** 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>Ask your child to create a step-by-step timetable for tomorrow. What will they do first? Next? Then? Can they present their timetable in an easy to read format for others to follow?</p>	<p>Ask your child to think of a film. Ask them to describe it using 5 key words or less. Can you guess the film they were thinking of? For example: Princess, Prince, Snowman?</p>	<p>Can your child come up with a sandwich that both tastes great and is healthy? Let them create their sandwich and evaluate it themselves. Have other family members try it and give feedback too.</p>	<p>Ask your child to think up a new app. This could be a game, fitness or travel app for example. Ask them to create a design for the app by breaking it down and sketching out the different screens the user will see.</p>	<p>Ask your child to help sort the kitchen cupboards. What food goes where and why? Can they spot patterns in where different foods are stored? Can they use these patterns to predict where new food from the shops might be stored?</p>	<p>Ask your child to lay 10 objects to create a flat pyramid pattern:</p>  <p>Challenge them to move only three items so the triangle points downwards instead of upwards?</p>
<p><b>Learning</b> Algorithms can be presented in different ways, here our timetable showing what we will do first, second, next is an algorithm.</p>	<p><b>Learning</b> This game encourages your child to abstract as they think of the key features of the film to help someone guess.</p>	<p><b>Learning</b> Here your child has been given a challenge and the criteria against which it will be evaluated. They self evaluate their own efforts and receive feedback from family members.</p>	<p><b>Learning</b> Decomposing the app down into the different screens allows your child to create a design to illustrate how their app would work.</p>	<p><b>Learning</b> Your child is identifying similarities and differences and spotting patterns, which can help them to make predictions about where new foods might be stored.</p>	<p><b>Learning</b> To complete this puzzle your child must think logically about which items to move. Encourage them to share their thought process.</p>