Kit’s Logic Lab: Designing an Algorithm

Learning objective: I can design a logical sequence of instructions (an algorithm) to solve a problem using flow chart symbols.

About 15 minutes. Grown-up tip: Ask your child to explain their flow chart to you; if they can talk through the logic, they have understood the sequence.

Today, we are helping Kit the fox create a programme for an automated school gate. An algorithm must be precise! Use standard flow chart symbols: an Oval for Start/End, a Parallelogram for Input/Output, and a Diamond for a Decision (Yes/No). Example: If you need to check if a bag is heavy, use a Diamond shape with 'Weight > 5kg?' and two arrows labelled 'Yes' and 'No'.

Draw: Draw a large flow chart in the centre of the page. Use a ruler to connect your boxes with straight lines and arrows to show the direction of the flow. Make the 'Decision' diamond stand out by shading it in a light colour. Include a small drawing of Kit the fox in the corner of your page holding a tablet.

Label words: Start · End · Input · Process · Decision · Loop

Steps:

1. Draw an Oval symbol at the top of your page. Label it 'Start'. What is the purpose of this symbol in a flow chart?

2. Draw a Diamond shape. Write the question 'Is the gate locked?' inside it. Draw two arrows coming out, one labelled 'Yes' and one 'No'.

3. If the answer is 'No', draw a Parallelogram symbol labelled 'Open Gate'. Why do we use a Parallelogram for this action?

4. Add a box that says 'Wait 5 seconds'. What type of flow chart symbol should this be?

5. Explain why a computer program would fail if the instructions were not in the correct sequence.



I did it! Name: _____ Date: _____

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