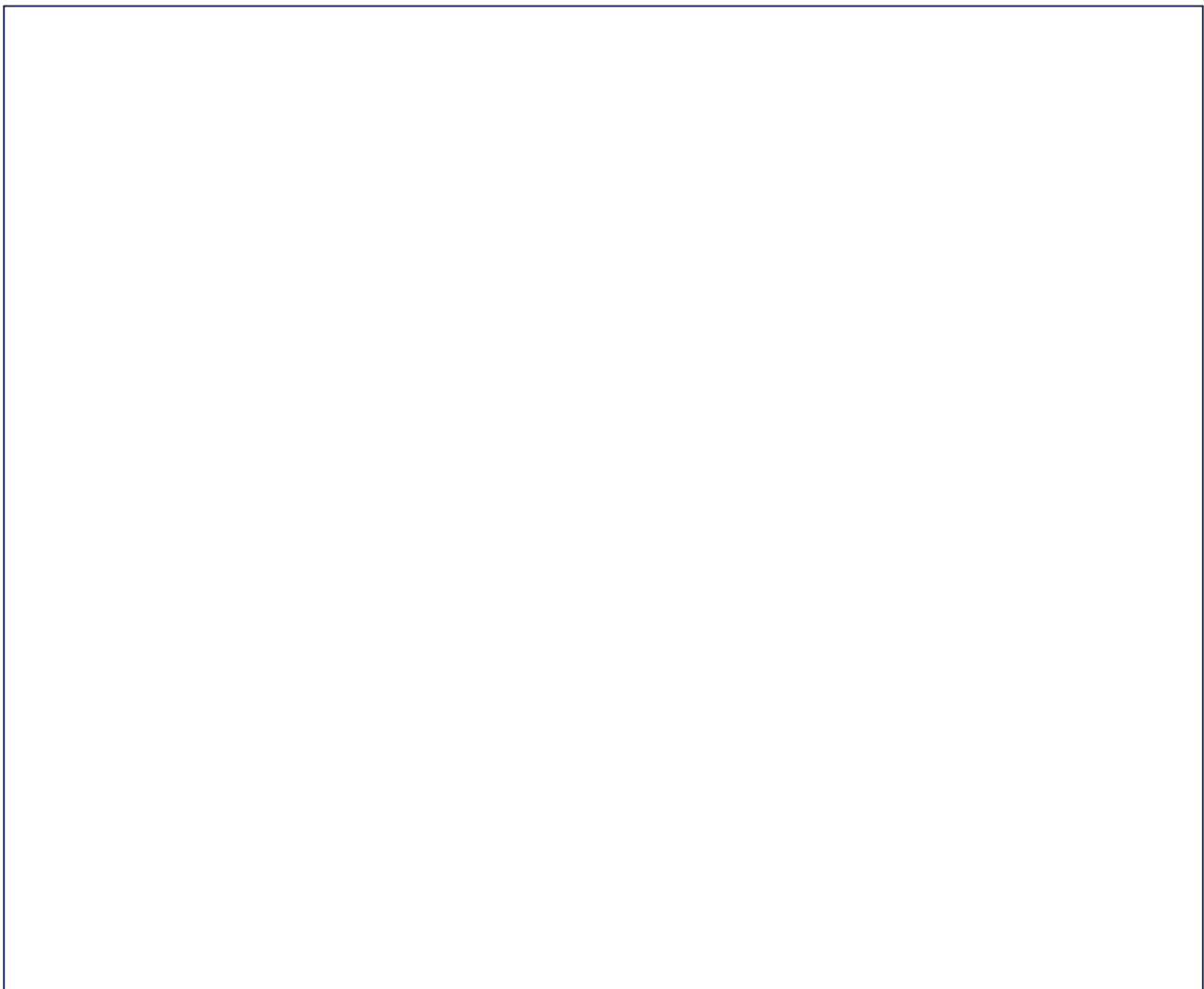


Kit's Logic Lab: Designing an Algorithm

Learning objective: To design and represent an algorithm using flowcharts and logical sequences to solve a specific problem.

Use the grid below to map out a sequence of instructions for a robot to move from the start point to the finish point. Use the standard flowchart symbols to represent your logic.

Draw: Draw a clear, step-by-step flowchart inside the provided grid space. The style should be technical and clean, using geometric shapes: ovals for start/end, rectangles for processes, and diamonds for decisions. Include Kit the Fox in the corner of your page looking at a tablet, showing an encouraging smile. The flowchart must depict a robot navigating a path with at least one obstacle that requires a 'Yes/No' decision.



Label words: Algorithm · Sequence · Decision · Input · Output · Process · Loop · Debug

Steps:

1. Label your drawing with the correct symbols for 'Start', 'Process', and 'Decision' using the word bank provided.
2. Explain why it is important to include a 'Decision' diamond in your algorithm if the robot encounters an obstacle.
3. Compare and contrast a linear sequence of instructions with a 'Loop'. Why might a loop be more efficient?

4. Justify your choice of path for the robot. Is it the most efficient route? How do you know?
5. What might happen if your algorithm contains a 'logical error'? Describe the potential impact on the robot.
6. If you were to add a 'sensor' input to your robot, how would you represent this change in your flowchart?