

Max's Mechanical Masterpiece: Design and Evaluation Template

Learning objective: To design, create, and evaluate a functional mechanism using levers, linkages, or cams to produce movement.

Max the monkey is obsessed with how things work! Use this template to plan your own mechanical creation. First, sketch your design, then explain how your mechanism functions. Finally, evaluate your work by thinking like an engineer. Consider how your choice of materials affects the movement and whether your design meets your original goal.

Word bank: mechanism · lever · linkage · cam · pivot · friction · input · output · stability · sturdy · function

1. Design Brief: What is the purpose of your mechanical creation, and which specific mechanism (lever, linkage, or cam) will you use to achieve movement? (3 marks)

2. Technical Components: List the materials you have chosen for your project. Justify why these materials are suitable for creating a durable and functional mechanism. (4 marks)

3. Explain why the position of the pivot point is critical for the success of your mechanism. What might happen if the pivot was placed in a different location? (4 marks)

4. Compare and contrast your chosen mechanism with a different type. Why is your selection better suited for your specific design goal? (4 marks)

5. Evaluation: Describe a challenge you faced while constructing your project. How did you modify your design to overcome this problem? (3 marks)

6. Refinement: If you were to build this mechanism again, what improvements would you make to enhance its efficiency or aesthetic appearance? (2 marks)

Draw: In the space below, draw a detailed technical diagram of your mechanism. Use labels to point out the input force, the pivot point, and the resulting output movement.



Extension challenge: Imagine you are an engineer. Write a short proposal explaining how your mechanism could be scaled up to solve a real-world problem, such as opening a heavy door or sorting recycled items. How would you adjust your materials to ensure it remains strong and reliable at a larger size?