

Max's Mechanical Masterpiece: Design and Evaluation

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

Max the monkey has set you a challenge! Use this writing frame to plan your mechanical invention and explain how it works. Think about the components you need and how they move together.

My mechanical invention is designed to move in a specific way to solve the problem of...

Word bank: pivot point · mechanism · rotational · linear motion · fulcrum · consequently · furthermore · specifically · stable · friction

1. The Design Brief: What problem are you trying to solve with your mechanism, and who is your target user? Start by saying: My product will help [user] by... (2 marks)

2. Materials and Components: Which materials have you chosen for your project? Explain why you selected these materials based on their properties. Start by saying: I have chosen to use [material] because it is... (3 marks)

3. How it Works: Describe the type of mechanism you are using (e.g., lever, cam, or linkage). Explain how the input movement creates the output movement. Start by saying: When the handle is turned, the [part] moves, which causes... (4 marks)

4. Testing and Evaluation: How did you ensure your mechanism was sturdy and reliable? What was the biggest challenge you faced during construction? Start by saying: During the building process, I found that... (3 marks)

5. Future Improvements: If you were to make this again, what would you change to make it work more effectively? Start by saying: In the future, I would improve the design by... (2 marks)

Extension challenge: Imagine your mechanism is being sold in a shop. Write a short advertisement explaining why it is worth £5.50, highlighting the clever way the parts move together.