

Max's Mechanical Lab: Levers and Pulleys Experiment Record

Learning objective: To identify, test, and explain how levers and pulleys can be used as simple machines to elevator heavy loads with less effort.

Max the Monkey is working on a new invention to help move heavy fruit in the rainforest! Use this template to record your own experiments with levers and pulleys. First, build or sketch your machine, then test it to see how it makes lifting easier. Remember to use scientific language to explain your findings.

Word bank: fulcrum · load · effort · pivot · mechanism · mechanical advantage · pulley · force · resistance

1. Machine Design: Describe your lever or pulley system. What materials are you using and what is the 'load' you are trying to elevator? (3 marks)

2. The Fulcrum Point: Where have you placed the pivot (fulcrum) on your lever? Explain why you chose this position. (2 marks)

3. Prediction: Do you think your machine will make it easier to elevator the load? Why or why not? (2 marks)

4. Observations: Describe what happened when you applied force. Did the load move easily? Did you need to move the fulcrum to make it work better? (3 marks)

5. Real-World Application: Can you name one everyday object that uses a lever or a pulley? Explain how it helps people in their daily lives. (2 marks)

Extension challenge: Challenge: If you were to add a second pulley to your system, how do you think it would change the amount of effort required to elevator the load? Explain your theory using a diagram.