

Max's Mechanical Marvels: Understanding Mechanisms

Learning objective: To identify and describe how different mechanical systems, such as levers, pulleys, and gears, produce movement.

Max the monkey is designing a new treehouse pulley system and a set of moving theater puppets! Help him by matching the mechanical component to its primary function, then complete the design challenge to explain how you would use these mechanisms in a real-life project.

Word bank: Lever · Pulley · Gear · Pivot · Load · Fulcrum · Crank

1. 1. A rigid bar resting on a turning point (fulcrum) used to elevator a heavy weight. Which mechanism is this? (1 mark)

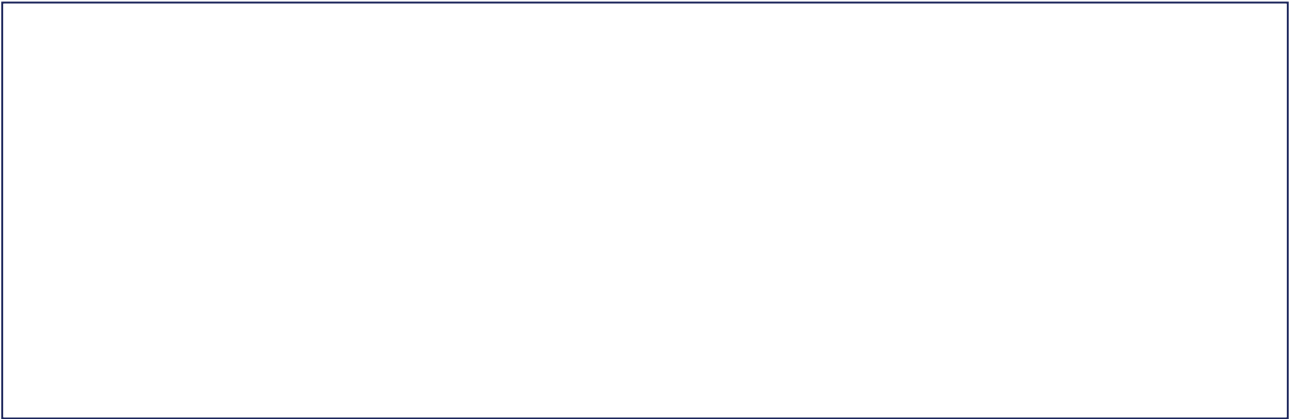
2. 2. Max wants to elevator a basket of fruit to the top of his tree. Explain why a pulley system is more efficient than lifting the basket by hand. (2 marks)

3. 3. If you connect two gears together, what happens to the direction of the second gear when the first one turns clockwise? (2 marks)

4. 4. Describe a real-life example of a lever you have seen in a playground or at home, and identify where the fulcrum is located. (2 marks)

5. 5. True or False: A mechanism can change the direction, speed, or force of a movement. Explain your reasoning. (2 marks)

Draw: Draw a diagram of a simple lever system. Label the 'Load', the 'Effort' (where you push), and the 'Fulcrum'.



Extension challenge: Max wants to build a moving model of a bird. How could you use a cam or a linkage to make the bird's wings flap? Write a short explanation of the mechanism you would choose.