

Max's Heart-Racing Fitness Challenge

Learning objective: To understand how physical activity affects the human body and heart rate, and to identify the components of a healthy fitness routine.

Max the monkey has been tracking his fitness patterns! Your task is to act as a 'Fitness Scientist'. First, complete the classification table below by sorting the activities into 'Aerobic' (heart-pumping, oxygen-using) or 'Strength & Flexibility' (muscle-building or lengthening). Then, use the Word Bank to fill in the blanks in Max's training log. Finally, answer the higher-order thinking questions to demonstrate your scientific understanding.

Word bank: pulse · stamina · oxygen · recovery · muscles · circulatory · respiration

1. Sort these into a table: Brisk walking, Yoga, Sprinting, Pilates, Swimming, Weightlifting. Explain why 'Sprinting' is classified as Aerobic. (3 marks)

2. Max's log: 'When I run fast, my _____ increases because my heart pumps blood to my _____ faster to supply them with extra _____. This process is part of my _____ system.' Fill in the blanks. (4 marks)

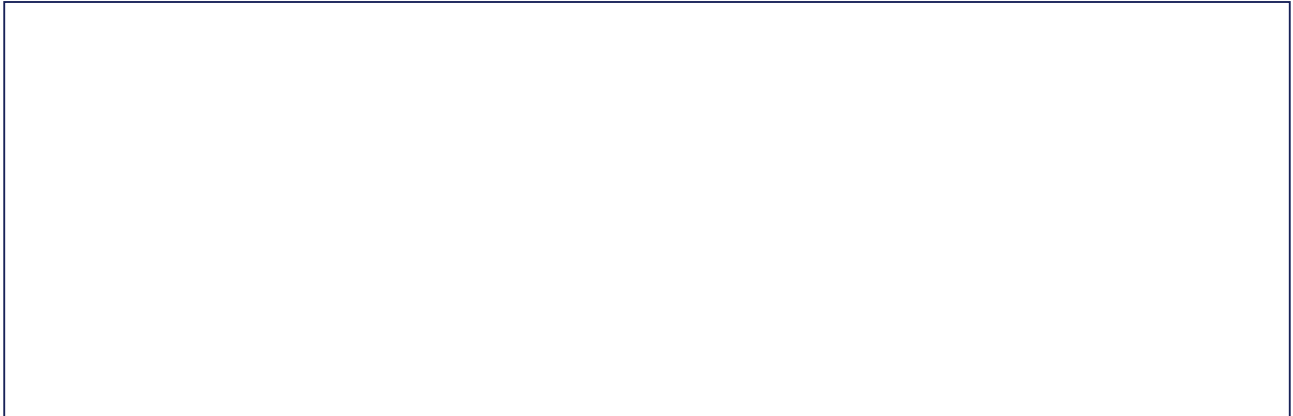
3. Justify your answer: Why is it important for an athlete to include a cool-down period after high-intensity exercise? (2 marks)

4. Compare and contrast: How does the effect of a long-distance run on the body differ from the effect of a short-duration yoga session? (3 marks)

5. What might happen if a person only focused on strength training and neglected aerobic exercise? Explain your reasoning. (3 marks)

6. Max wants to improve his 'stamina'. Design a short 3-day weekly plan for him that balances aerobic and strength work. Justify your choice of activities. (4 marks)

Draw: Draw a labelled diagram of the human heart and the pathways it takes to pump blood to the working muscles during a game of tag.



Extension challenge: Conduct a mini-investigation: Measure your resting pulse for one minute, then perform three minutes of star jumps and measure your pulse again. Create a bar chart showing the difference and write a conclusion explaining why the heart rate changed.