

Year 5 Physical Education: The Science of Fitness Assessment

Learning objective: To demonstrate an understanding of the components of fitness, the physiological effects of exercise on the body, and the importance of a balanced, active lifestyle.

Read each question carefully. Use your scientific knowledge of the body to provide detailed answers. Ensure you use correct terminology where possible.

Max the monkey is training for the Great Forest Games. He spends his mornings climbing tall trees to build his muscular strength and his afternoons sprinting through the meadows to improve his cardiovascular fitness. Nova the owl watches him, noting that his heart rate increases significantly during his sprints, and he needs time to recover before he can perform at his best again.

Word bank: cardiovascular · stamina · flexibility · heart rate · respiration · muscular endurance · recovery · anaerobic · aerobic · agility

1. Identify two physical changes that happen to your body when you exercise vigorously, and explain why these occur. (2 marks)

2. Max wants to improve his flexibility for the hurdles event. Define 'flexibility' and suggest one activity he could perform to improve it. (2 marks)

3. Compare and contrast aerobic exercise and anaerobic exercise. Provide one example of each. (4 marks)

4. Explain why a 'warm-up' is essential before engaging in high-intensity physical activity. How does it prepare the muscles? (3 marks)

5. If Max decides to sprint for 100 metres every day without taking rest days, what might happen to his performance and his body's recovery process? Justify your answer. (4 marks)

6. A balanced lifestyle includes healthy eating. If a healthy snack costs £1.20 and a bottle of water costs £0.80, calculate the total cost for Max to purchase these every day for one school week (5 days). (2 marks)

7. Extended Writing: Design a weekly training plan for a young athlete. You must include at least three different components of fitness (e.g., stamina, agility, strength) and explain why a varied programme is more effective than focusing on just one component. (5 marks)

Draw: Draw a diagram of the human body and label three areas that are primarily targeted during a cardiovascular workout, such as sprinting or swimming.



Extension challenge: Total: /25. Challenge: Investigate the 'FITT' principle (Frequency, Intensity, Time, Type). Write a paragraph explaining how you would adjust your own training programme if you wanted to improve your personal best in a 1km run.