

Design Technology: The Balanced Plate Challenge

Learning objective: To understand the principles of a healthy, balanced diet and apply nutritional knowledge to design a meal suitable for a specific lifestyle.

Read each question carefully and use your knowledge of the Eatwell Guide and food groups to provide detailed, reasoned answers. Max the monkey is looking for precision in your nutritional choices!

Word bank: macronutrients · carbohydrates · protein · fibre · saturated fat · micronutrients · energy-dense · balanced · metabolism · portion control

1. Max is training for a high-intensity jungle trek. Explain why he should prioritise complex carbohydrates over simple sugars in his pre-trek meal. Consider how his body releases energy over time. (2 marks)

2. Compare and contrast the nutritional benefits of an oily fish, such as mackerel, versus a plant-based protein like lentils. Which would you choose for a growing Year 5 student and why? (3 marks)

3. If a meal consists of a large portion of white pasta with a small amount of vegetables, justify how you would alter this dish to improve its nutritional density without significantly increasing the cost above £2.50. (3 marks)

4. Explain why it is vital for our bodies to include at least five portions of fruit and vegetables daily. What might happen to a person's long-term health if these micronutrients were consistently missing from their diet? (3 marks)

5. You are designing a school lunch menu. If the budget per meal is £1.80, how can you ensure the meal remains healthy while managing food waste and ingredient costs? Suggest two practical strategies. (2 marks)

Draw: Draw a 'Balanced Plate' for a professional athlete. Label the proportions of carbohydrates, proteins, and vegetables, and explain one reason why you included each component.



Extension challenge: Design a 3-day meal plan for a fictional character who has a specific dietary requirement (e.g., vegetarian, gluten-free, or high-energy). Calculate the approximate total cost per day and justify your choice of ingredients based on their nutritional value and affordability.