

Max's Kitchen Science: Mastering Nutrition

Learning objective: To understand the principles of a healthy, balanced diet and how to prepare nutritious, varied meals using the Eatwell Guide.

Read each question carefully. Use your knowledge of food groups and nutritional balance to answer. Show your working for any calculations involving costs.

Word bank: Carbohydrates · Protein · Fibre · Saturated fat · Micronutrients · Balanced diet · Portion control · Hydration

1. Max is planning a healthy lunchbox. He has chosen a wholemeal bread sandwich with lean chicken. Explain why including a portion of vegetables is essential for a balanced meal, referring to specific nutrients. (2 marks)

2. Max buys a punnet of strawberries for £2.25 and a bag of salad leaves for £1.50. If he pays with a £5 note, how much change should he receive? Why is it important to consider the 'five-a-day' guideline when shopping for fresh produce? (3 marks)

3. Compare and contrast the nutritional benefits of wholegrain carbohydrates versus refined carbohydrates. Why might a student choose wholegrain options for sustained energy during the school day? (3 marks)

4. Justify your answer: If a recipe calls for butter but you want to make the meal healthier, what ingredient could you substitute, and what impact would this have on the nutritional profile of the dish? (2 marks)

5. What might happen to a person's physical performance and concentration in class if they were consistently dehydrated and lacked sufficient protein in their diet? (2 marks)

Draw: Sketch a 'Balanced Plate' design for a school dinner. Label each section (Protein, Carbohydrates, Fruit/Veg, Dairy/Alternatives) and include a small key explaining the function of one of those food groups in the human body.



Extension challenge: Design a 3-day meal plan for an athlete. You must justify your choices by explaining how your meal plan provides the necessary energy for exercise while maintaining a healthy balance of macronutrients. Consider the cost-effectiveness of your ingredients—can you provide a healthy, high-protein meal for under £1.50 per portion?