

Fueling Your Future: The Science of Nutrition

Learning objective: To understand the importance of a balanced diet and evaluate how different food groups contribute to a healthy, active lifestyle.

Read the questions carefully and use your knowledge of the Eatwell Guide to provide detailed, reasoned answers. Remember to consider the nutritional value of various food groups.

Max the monkey is planning a high-energy day of climbing and puzzle-solving, while Pip the bookworm needs steady brain fuel for a long afternoon of reading. They are visiting the market to buy ingredients for a communal lunch, keeping a budget of £15.00 to feed their group of friends.

Word bank: carbohydrates · protein · vitamins · minerals · fibre · saturated fat · balanced · nutrients · hydration

1. Max suggests that eating only fruit would be the healthiest way to fuel his climbing. Using your knowledge of the five main food groups, explain why Max's plan is not a balanced approach to nutrition. (2 marks)

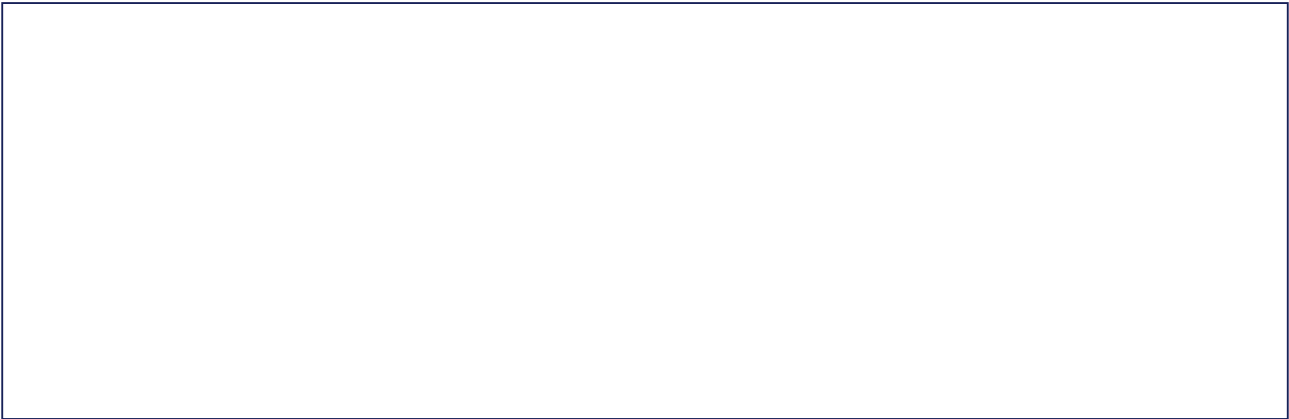
2. Pip needs to focus for a long time. Justify why complex carbohydrates (such as wholegrain bread or brown pasta) are a better choice for sustained energy than sugary snacks. (2 marks)

3. If the group spends £4.50 on fresh vegetables, £6.20 on lean protein, and £2.80 on whole grains, calculate the total cost. If they have £15.00, how much change will they receive, and what healthy item could they purchase with the remaining money? (3 marks)

4. Compare and contrast the role of protein in our diet with the role of vitamins and minerals. Why does the body require both to function correctly? (3 marks)

5. What might happen to an individual's physical performance and concentration levels if they consistently replaced water with high-sugar energy drinks? (2 marks)

Draw: Draw and label a 'Balanced Plate' for a school athlete. Include at least three different food groups and explain in a small caption why each item was chosen for an active person.



Extension challenge: Design a 7-day healthy meal plan for a fictional character with a specific activity level (e.g., a high-energy explorer or a studious researcher). Justify your choices by explaining how the nutrients in your plan support their specific lifestyle needs.