

Name: _____ Date: _____

Nail the Nutrients: Investigating 4th Grade Fuel

Moving past basic food groups to evaluate complex nutrient interactions and analyze food labels for optimal physiological performance.

1. Imagine you are an athlete preparing for a long-distance race tomorrow. Why might a sports nutritionist suggest a dinner rich in complex carbohydrates like barley or wild rice rather than simple sugars?

- A. Simple sugars provide longer-lasting energy for the entire race.
- B. Complex carbohydrates break down slowly, providing a sustained energy release.
- C. Barley contains high amounts of Vitamin D which helps muscles breathe.
- D. Simple sugars turn into protein once you start running.

2. Iron is a trace mineral that helps red blood cells transport oxygen throughout your body.

- A. True
- B. False

3. Amaya is checking a food label. She sees 'Partially Hydrogenated Oil' in the ingredients. This indicates the presence of ___ fats, which are generally linked to heart health risks.

- A. Unsaturated
- B. Polyunsaturated
- C. Trans
- D. Omega-3

4. Which of these scenarios best demonstrates the concept of 'nutrient density'?

- A. Eating a large bag of pretzels that has 400 calories and very little fiber.
- B. A cup of kale that provides high levels of Vitamin K and A with very few calories.
- C. Drinking a diet soda because it has zero calories but no vitamins.
- D. Eating a slice of white bread because it is fortified with sugar.

5. While fats are often viewed negatively, they are actually necessary for absorbing certain vitamins (A, D, E, and K) and protecting organs.

- A. True
- B. False

6. If a person is a strict vegetarian, they must carefully combine plant-based foods like beans and sunflower seeds to ensure they get all 'Essential ___', which are the building blocks of protein.

- A. Fatty Acids
- B. Amino Acids
- C. Nucleic Acids
- D. Enzymes

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7. Consider the role of fiber in the digestive system. How does insoluble fiber, found in wheat bran or the skins of fruit, assist the body?

- A. It dissolves in water to turn into energy for the brain.
- B. It speeds up the absorption of sugar into the bloodstream.
- C. It adds bulk to stool and helps food pass more quickly through the stomach and intestines.
- D. It replaces the need for drinking water during meals.

8. A student notices they are feeling very sluggish and having trouble concentrating in the afternoon. After analyzing their lunch of plain white pasta and apple juice, a scientist might suggest adding ____ to help stabilize their blood sugar levels.

- A. More honey
- B. Lean protein
- C. More fruit juice
- D. Refined flour

9. Sodium is completely bad for the body and should be eliminated from the human diet entirely to prevent high blood pressure.

- A. True
- B. False

10. A food label lists 'Total Sugars: 24g' and 'Added Sugars: 20g'. What does this tell you about the nutritional value of the food?

- A. Most of the sugar in the product occurs naturally in the ingredients.
- B. The food is a great source of natural energy like a piece of fruit.
- C. The majority of the sugar was added during processing rather than coming from whole food sources.
- D. The food contains high amounts of fiber which cancels out the sugar.