



**STRONGER TOGETHER
EDUCATION ACADEMY**
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Lesson Title: Understanding Carbohydrates, Fats, and Proteins: Daily Needs, Calories per Gram, Role, and Use in the Body

Objective: By the end of this lesson, students will understand the daily needs, calories per gram, and the role and use of carbohydrates, fats, and proteins in the body for maintaining good health and supporting physical activities.

Duration: Approximately 60 minutes

****Introduction (5 minutes)****

- Begin the lesson by asking students what they know about carbohydrates, fats, and proteins. Write down their responses on the board.

****Part 1: Carbohydrates (20 minutes)****

1. Explain the role of carbohydrates in the body:

- Carbohydrates are the primary source of energy for the body, especially during physical activities.

- They are broken down into glucose, which fuels the brain and muscles.

2. Daily needs and calories per gram:

- Discuss the recommended daily intake of carbohydrates for teenagers (e.g., 45-65% of total calories).

- Explain that carbohydrates provide approximately 4 calories per gram.

3. Types of carbohydrates:

- Differentiate between simple carbohydrates (sugars) and complex carbohydrates (starches and fiber).

- Provide examples of each type, such as fruits, vegetables, grains, and sugary snacks.

4. Activity: Calculate carbohydrate intake:

- Have students calculate the total carbohydrate intake in a sample meal using nutrition labels.

****Part 2: Fats (15 minutes)****

1. Explain the role of fats in the body:

- Fats are essential for storing energy, protecting organs, and absorbing fat-soluble vitamins (A, D, E, K).

- They also play a crucial role in cell structure and function.

2. Daily needs and calories per gram:

- Discuss the recommended daily intake of fats for teenagers (e.g., 25-35% of total calories).
- Explain that fats provide approximately 9 calories per gram.

3. Types of fats:

- Differentiate between saturated, unsaturated, and trans fats.
- Discuss sources and health implications of each type.

4. Activity: Identifying healthy fats:

- Show images of various foods and have students categorize them as sources of healthy or unhealthy fats.

****Part 3: Proteins (15 minutes)****

1. Explain the role of proteins in the body:

- Proteins are essential for growth, tissue repair, enzyme production, and supporting the immune system.
- They can also serve as an energy source if carbohydrates and fats are insufficient.

2. Daily needs and calories per gram:

- Discuss the recommended daily intake of proteins for teenagers (e.g., 10-30% of total calories).
- Explain that proteins provide approximately 4 calories per gram.

3. Sources of protein:

- Discuss complete proteins (found in animal products) and incomplete proteins (found in plant-based foods).
- Provide examples of good protein sources, such as lean meats, beans, nuts, and dairy products.

4. Activity: Balanced meal planning:

- In small groups, have students plan a balanced meal that includes all three macronutrients.

****Conclusion (5 minutes)****

- Summarize the key points about carbohydrates, fats, and proteins and their role in maintaining good health and supporting physical activities.
- Encourage students to make informed choices about their daily food intake to meet their nutritional needs.
- Address any remaining questions or misconceptions.

****Homework (optional)****

- Have students keep a food diary for a few days and analyze their carbohydrate, fat, and protein intake. Discuss the findings in the next class.

Note: Always be sensitive to students with dietary restrictions or health conditions. Encourage them to seek advice from healthcare professionals or registered dietitians if needed.