Materials Needed:

- Several different packaged food items with nutrition labels (e.g., cereal box, yogurt cup, canned soup, snack bar)
- Calculator
- Paper or notebook
- Pencil or pen
- Access to the internet (optional, for research)
- Measuring cups and spoons (optional, for portion size visualization)
- Grocery store flyers or online grocery prices (optional, for unit price comparison)

Introduction: Food is Fuel! (Approx. 10 mins)

Welcome! Today, we're diving into the fascinating world of food nutrition. Think of your body like a high-performance machine. What kind of fuel does it need to run its best? That's what nutrition is all about â€“ understanding the components of food and how they help us grow, learn, and stay healthy. We'll explore this using English, Math, and Science!

Part 1: De-coding Food Labels (English & Science Focus - Approx. 30 mins)

Grab one of your food packages. Let's look at the Nutrition Facts label. It's like a secret code telling us what's inside!

- **Serving Size & Servings Per Container:** This is crucial! All the numbers on the label apply to ONE serving. How many servings are in your package?
- **Calories:** This tells us how much energy the food provides.
- **Macronutrients:** Find the listings for Total Fat, Total Carbohydrates, and Protein. These are the main nutrients that give us energy and building blocks. Briefly discuss:
    - **Proteins:** Build and repair tissues (muscles, organs).
    - **Carbohydrates:** Main source of energy.
    - **Fats:** Provide energy, help absorb vitamins, protect organs. Discuss healthy vs. unhealthy fats briefly.
- **Micronutrients:** Look for Vitamins (like Vitamin D, Vitamin C) and Minerals (like Calcium, Iron, Potassium). These are needed in smaller amounts but are essential for many body functions.
- **% Daily Value (%DV):** This shows how much a nutrient in one serving contributes to a general 2,000-calorie daily diet. 5% DV or less is low, 20% DV or more is high.

Activity (English): Choose one food package. Write a short paragraph describing its nutritional profile based on the label. Is it high in sugar? A good source of protein? How does the serving size compare to how much you might actually eat?

Part 2: Nutrition by the Numbers (Math Focus - Approx. 30 mins)

Let's put our math skills to work!

- **Calorie Calculation:** Scientists know how much energy each macronutrient provides:
    - Protein: 4 calories per gram

    - Carbohydrates: 4 calories per gram
    - Fat: 9 calories per gram (more energy-dense!)

  Choose a food label. Find the grams of protein, carbohydrates, and fat per serving. Calculate the approximate total calories from these macronutrients using the values above. (Example: 10g Protein * 4 = 40 calories; 20g Carbs * 4 = 80 calories; 5g Fat * 9 = 45 calories. Total = 165 calories). Does your calculation roughly match the 'Calories' listed on the label? (Note: Fiber calculations can sometimes cause slight differences).
- **Percentage Practice:** Look at the %DV for Calcium on a yogurt cup. If it says 20%, what fraction of your daily calcium need (based on a 2000-calorie diet) does one serving provide? (Answer: 20/100 or 1/5). If you ate two servings, what percentage would that be?
- **Portion Power:** Look at the serving size listed (e.g., 1/2 cup, 1 bar). Measure out that amount using measuring cups/spoons if available. Does it look like the amount you'd normally eat? Discuss how easily portion sizes can be underestimated.
- **Unit Price Challenge (Optional):** Using grocery flyers or online prices, find two different brands/sizes of a similar item (e.g., oatmeal). Calculate the price per ounce or per 100g to see which is the better value. (Price / Quantity = Unit Price).

Part 3: Building a Balanced Plate (Science & Integration Focus - Approx. 30 mins)

A balanced diet means getting the right amounts of different nutrients.

- **MyPlate Model:** Discuss the MyPlate visual (or the traditional food pyramid). It typically shows roughly:
    - 1/2 plate: Fruits & Vegetables (lots of vitamins, minerals, fiber)
    - 1/4 plate: Grains (preferably whole grains for energy and fiber)
    - 1/4 plate: Protein (lean meats, beans, nuts, tofu)
    - Dairy (or calcium-rich alternatives) on the side.
- **Energy Balance:** Briefly discuss 'calories in' vs. 'calories out'. We get energy (calories) from food, and we use energy through physical activity and basic body functions (like breathing, thinking). Maintaining a healthy weight involves balancing this energy equation over time.
- **Nutrient Deep Dive (Optional Research):** Choose one vitamin (like Vitamin C) or mineral (like Iron). Use the internet or books to research: What does it do for the body? What foods are good sources? What happens if you don't get enough?

Wrap-up & Creative Meal Design (Approx. 15 mins)

Activity (Integrated): Design a healthy, balanced lunch or snack. Draw it or write it down. Include foods from at least 3 food groups (fruits/veg, grains, protein). Explain *why* it's a healthy choice, referencing macronutrients/micronutrients. Try to estimate the calories (you can look up general food calories online) and maybe even calculate the protein/carb/fat calories like we did earlier!

Review: What's one thing you learned today about reading labels (English)? One calculation you practiced (Math)? One important role of a nutrient (Science)? Great job exploring the world of nutrition!