

Common Core Standards

CCSS.MATH.CONTENT.HSN.Q.A.1

Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

Target audience:

Grades 9-12

Objectives:

- Draw relationships between body size, exercise, food, and calories.
- Analyze the components of a balanced human diet.
- Plan a successfully balanced menu that aligns with specific bodily needs.

Key words:

Calories; Food group; Fruit; Vegetables; Grains; Protein; Dairy; Cup; Ounce

(Using Key words: Students can create a glossary, in books or on wall in classroom.

Students are encouraged to practice using vocab in written or verbal sentences –

perhaps writing example sentences and displaying them. Students could earn points for using the vocab in novel sentences each week)

Resources:

- PowerPoint - Food for Friends
- Calorie Patterns worksheets (5): 2,600 cal; 2,800 cal; 3,000 cal x2; 3,200 cal
- 5 worksheets per student or per group (2 worksheets for the 3,000 cal pattern and 1 worksheet for the other three calorie patterns)

Activities:

Group Activity/Class Discussion

Pass out the Calorie Patterns worksheets (5 worksheets per student or per group). Go through the PowerPoint, which includes the Group Activity and Class Discussion.

Slide 1 Introduction

Slide 2

Introduce Rufus by going through the details provided on the left side of the slide: “Who Is Rufus?” (age, gender, weight, height, how much Rufus exercises per day, and the number of calories that MyPlate recommends he eat per day).

Go through the details provided on the right side of the slide, which cover the food portions that Rufus needs according to MyPlate’s recommended calorie intake: “Rufus Needs...” (cups/oz of Fruit, Vegetables, Grains, Protein, and Dairy). More details about these food portions are provided on Slide 3.

Slide 3

Have students pull out the 2,600 Calorie Patterns worksheet (same as the table on Slide 3).

While students follow along on their worksheets, go through the details on the left side of the table on Slide 3, which covers food group targets for Rufus’ 2,600 calorie diet (what type of foods count as 1 cup of fruit, what type of foods count as 1 oz of grains, etc.).

Slide 4

Using the examples for food choices provided on Slide 4, invite students to plan a balanced menu for Rufus by filling out the right side of the table on their worksheet in the column titled: “Write your food choices for each food group.” For each food group,

students should list food choices that meet Rufus' portion needs for each food group (e.g., if Rufus needs 2 cups of fruit per day, then students could list "1 cup fresh apple + 1 cup dried mangos).

Then invite students to use the calorie details provided on Slide 4 to determine how many calories Rufus will take in per day if he follows the students' menus. Students should add up all the calories for each food choice they listed on their worksheet. Have students adjust their menus if their Total Calories falls short of, or exceeds Rufus' 2,600 calorie limit (+/- 100 calories is okay).

Slide 5

Follow the same instructions from Slide 2 (but now we are introducing Alfie). Discuss reasons why Alfie may need more calories and bigger food portions than Rufus (e.g., heavier weight, taller height, faster metabolism, more exercise).

Slide 6

Follow the same instructions from Slide 3 (but now we are using the 3,000 Calorie Patterns worksheet for Alfie (same as the table on Slide 6).

Slide 7

Follow the same instructions from Slide 4 (but now we are planning a balanced menu for Alfie).

Slide 8

Follow the same instructions from Slide 2 (we are still talking about Alfie, but now he has joined the basketball team!). Discuss reasons why Alfie may need more calories now compared to when he was not on the team (i.e., more exercise, more calorie expenditure).

Slide 9

Follow the same instructions from Slide 3 (now we are using the 3,200 Calorie Patterns worksheet for Alfie, which is the same as the table on Slide 9).

Slide 10

Follow the same instructions from Slide 4 (now we are planning a new balanced menu for Alfie since he has joined a sports team).

Slide 11

Follow the same instructions from Slide 2 (but now we are introducing Lulu). Discuss reasons why Lulu may need fewer calories and smaller food portions than Alfie, even though they share the same weight and height (e.g., less muscle mass, slower metabolism, less exercise).

Slide 12

Follow the same instructions from Slide 3 (now we are using the second 3,000 Calorie Patterns worksheet for Lulu, which is the same as the table on Slide 12).

Slide 13

Follow the same instructions on Slide 4 (now we are planning a balanced menu for Lulu).

Slide 14

Follow the same instructions from Slide 2 (we are still talking about Lulu, but now she is 40 years old!). Discuss reasons why Lulu may need fewer calories now compared to when she was 21 years old, even though she has maintained the same height and weight (e.g., less muscle mass, slower metabolism, less exercise, less calorie expenditure).

Slide 15

Follow the same instructions on Slide 3 (now we are using the 2,800 Calorie Patterns worksheet for Lulu, which is the same as the table on Slide 15).

Slide 16

Follow the same instructions from Slide 4 (now we are planning a new balanced menu for Lulu since she is older).

Further Activities/Homework:

Invite students to plan a balanced menu for themselves!

- Access the MyPlate Checklist Calculator at <http://www.choosemyplate.gov/MyPlate-Daily-Checklist-input>
- Input personal details for Age, Sex, Weight, Height, and Physical Activity.
- Press “Calculate Food Plan.”
- Click the blue button to download the “recommended calorie plan,” which will be your own personal Calorie Patterns worksheet.
- Print and read through both pages of this worksheet, noting the daily calorie intake and food portions recommended for you.
- Fill out the table on Page 2 of the worksheet by listing food choices for each food group that meet your recommended calorie and food portion needs. You can find nutrition and calorie information for food by using an online calorie counter, such as Calorie King (<http://www.calorieking.com/>), Calorie Count (<https://www.caloriecount.com/>), or MyFitnessPal (<http://www.myfitnesspal.com/food/calorie-chart-nutrition-facts>).

Assessment:

Quality of predictions during class discussion

Contributions to class discussion

Quality of answers on worksheet

Accuracy of calorie calculations on worksheet