

Learning about nutrition

6th grade

Background: This particular lesson allows for 6th grade to learn about calories and create their own personal meal plan using www.choosemyplate.gov. During this lesson students will learn the importance of calorie counting and how to implement this on daily basis. They will then be asked to create a restaurant and design a menu, which includes breakfast, lunch, dinner and sides. They will then have to calculate the number of calories per dish by using a calorie calculator of their choice. The challenge of the menu is that students must design their menu based off the total number of calories they are allowed to consume per day. They must also use the exact amount of ingredients needed from each food group. If they go over, they will lose a point for each portion. This is only part of the overall unit.

Since I currently teach at a private school, I am able to be flexible with what I want to teach my students. Nutrition is taken very seriously in our building since we have a chef. This allows for me to collaborate with him. During this unit, I was able to meet with a few dieticians that came to our school to speak to the students. I also took my students to a local grocery store where they took a cooking class and learned even more about how to calculate calories and about how to incorporate nutritious foods in their daily diet. Lastly, I worked closely with our STEM teacher in creating a digestive system model.

Data collection was taken over the couple of weeks. I was able to give kids mini-quizzes which had 5 questions each. The students graded these immediately on their own, which allowed for them to have immediate feedback. With this lesson, I had a menu project that I assigned to the students. This project was a great way for me to see if students understood how to calculate calories. It also provided them the opportunity to become more aware of new dishes and to be creative. After collecting the data, I was able to input each students' grades and allowed them to view it. The students also presented their projects to the class. I made sure to provide lots of feedback to each student.

Standards

NGSS

MS-ETS 1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into

a new solution to better meet the criteria for success.

MS-ETS 1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

MS-ETS 1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Disciplinary Core Idea

ETS1.B: Developing Possible Solutions

There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (MS-ETS1-2), (MS-ETS1-3)

ETS1.A: Defining and Delimiting Engineering Problems

The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1)

Science & Engineering Practices

Analyzing and Interpreting Data

Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.

- Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)

Crosscutting Concepts

All human activity draws on natural resources and has both short and long-term consequences, positive as well negative, for the health of people and the natural environment (MS-ETS1-1)

Nature of Science

Scientific Investigations Use a Variety of Methods
Scientific Knowledge is Based on Empirical Evidence
Science is a Way of Knowing

Science is a Human Endeavor

CCSS ELA LITERACY

W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (4-LS1-1)

Objectives

- Comprehend their own MyPlate plan
- Understand the importance of calorie counting
- Understand how and why calories change for each person
- Understand why restaurants write calories alongside each dish
- Summarize their essay and write why and how they picked each item
- Compare and contrast Girl Scout cookie boxes

Engaging Contexts

Prior to this lesson, I asked students what they knew about nutrition and calories. I brought in some Girl Scout cookies and students were asked to compare boxes. They were then able to consume some cookies, which they enjoyed. I then asked them to review their food diary that they did the previous weekend and asked them what changes they would make to their diary if they had to eat healthier. I then introduced MyPlate and told the kids that they will get customized plan in just a few seconds.

Lesson Plan

Time: Approximately 2 days. Menu project can be assigned for home use

Grade: 6th

Engage: I engage my students by first asking the class what they know about calories when we talk about nutrition. I will then allow them some time to brainstorm this. We will then talk about our findings. I will then pass out empty boxes of Girl Scout cookies. We will look at the boxes and talk about what things we notice about the calories within each box. During this time, I will also pass out some Girl Scout cookies for them to eat! Next, I will ask the students about how many calories they think they eat each day. They will have to take out their food diary and look at what they wrote. Their food diary was done the weekend prior to class. I will then introduce the meal plan website and give time for students to explore this site for a bit. To engage my students even more, I will let them know that they have the opportunity to create a customized meal plan, which they will print out and use for their menu projects that they will be assigned.

Explore: Each student will print out their meal plan from the free PDF provided on MyPlate website. They will then compare with each other their findings for a few minutes and see how height, weight, age, and the amount of activity done per day plays a role into how many calories you are told to consume each day. They will also be taught how to look at calories using a calorie calculator on Google to figure out how many calories are in various foods. For instance, 1 avocado might =72 calories. They will then be given time on their laptops to try typing in various foods, to see how many calories are within each item. They will use this information for their menu project. I will then ask students to take a look at various menus that I provide them from various restaurants.

Explain: After students had time to explore the items provided, I will then have a discussion about menus and how a lot of restaurants write the number of calories of each dish. I will then explain to students that they must design a menu that meets their calorie count that my plate has told them to consume per day. They must also use the exact amount of ingredients for each food group, total. Meaning, if they must eat only 3 servings of raw veggies, they can only incorporate 3 servings throughout their menu. They make break this amount up though. They will have to incorporate breakfast, lunch, dinner, sides, drinks, as well as desserts. The menu must look authentic and I will tell them that there is a lot of room for creativity in this project. I will show them an example of what I am looking for within each item. They will also be asked to summarize their menu and explain to me what was on it and how they chose each of their dishes.

Elaborate: Students will then take a look at the menus again that are examples, and then will have the opportunity to write a few example ones so I can double check that they understand what I would like for them to do. I will also explain to them how and why menus incorporate the number of calories. I want students to understand the importance of this and how the number of calories that need to be consumed per person, varies.

Evaluation: The menu is my main way of assessing students during this lesson. They will have plenty of time to do this assignment. They are also being assessed when writing examples of dishes that they want to incorporate, individually. They get assessed within a group when they are asked to compare Girl Scout cookies. The rubric I designed is very basic. For each student, lots of written feedback would be given. This assignment is approximately 50 points although this can vary.

1

2

3

Didn't follow directions and had minimal amount of information on the menu. Calories were not accounted correctly.	Followed some of the directions and had some amount of information on the menu. Some calories were counted accurately.	Followed all the directions. Had lots of great menu options and was very creative. Calories were all counted for accurately.
Presentation: Unreadable.	Presentation: Somewhat clean, but still needs a lot of work	Presentation: Very clean
Essay: Didn't explain the menu at all. Put little to no effort into it.	Essay: Explained the menu, but needs to fix certain areas.	Essay: Was very well done!