

Nutrition Lesson Plan (Secondary)

TEACHER

DATE

GRADE LEVEL

Can be adjusted to fit grades 7-12

SUBJECT

Health, social studies

LESSON OBJECTIVE(S)

- SWBAT communicate the importance of healthy diet and discuss diverse strategies for achieving good nutrition across the world.

MATERIALS

- Access to computers so students can explore the National Geographic's feature on "What the World Eats" (<https://www.nationalgeographic.com/what-the-world-eats/>)
- "What the World Eats" worksheet (see associated materials)
- *Optional*
 - Projector or computer-connected TV to view TED Ed video on "How the Food You Eat Affects Your Brain" (<https://ed.ted.com/lessons/how-the-food-you-eat-affects-your-brain-mia-nacamulli>) or "Should We Eat Bugs?" (<https://ed.ted.com/lessons/should-we-eat-bugs-emma-bryce>)
- Frayer Models or teacher's favorite vocabulary strategy

ENGAGEMENT 5 MIN

- Describe how the teacher will capture students' interest.
- What kind of questions should the students ask themselves after the engagement?

Open the class with a discussion. Ask students: What is the most unusual thing you have ever eaten? What is something you'd like to eat that you have never tried? Students should share out their answers. The purpose of this exercise is to simply get students thinking about what they put in their bodies and the huge range of food people eat.

EXPLORATION

(Minimum 30 minutes, possibly much longer depending on grade level etc.)

- Describe what hands-on/minds-on activities students will be doing.
- List "big idea" conceptual questions the teacher will use to encourage and/or focus students' exploration

Before beginning the online component of this activity, hand out the worksheet for "What the World Eats," which asks students to make predictions about the different types of food the world eats. Have students complete this before they go online. Once students are set up at computers (individually or in groups), direct them to the National Geographic's interactive infographic on "What the World Eats" (<https://www.nationalgeographic.com/what-the-world-eats/>). Allow students to click around and become familiar with the variables used on the site and its functionality. Then instruct them to complete the handout, which dives deep into the food eaten in different countries and comparisons between them. By the end of the worksheet, students are asked to use evidence from the infographic to justify their answers to questions which may have several correct answers. The important thing is that students use the data to explain their answer.

This worksheet is written for an upper secondary level. Middle school teachers will likely want to modify some questions or complete parts of the worksheet as a class.

EXPLANATION
-20 MIN

- Student explanations should precede introduction of terms or explanations by the teacher. What questions or techniques will the teacher use to help students connect their exploration to the concept under examination?
- List higher order thinking questions which teachers will use to solicit student explanations and help them to justify their explanations.

Ask students to share out their answers to portions of the worksheet. In particular, have students share their answers to the questions that may have multiple correct answers and which require justification.

Bring the discussion around to the difference between healthy and unhealthy diets. You may want to chart on the board student ideas of what makes a diet healthy or unhealthy. Guide students by asking them about which countries from the infographic ate healthy diets and which ones were unhealthy. How could they tell the difference? Be sure to help students remember that both not enough food and too much of some types of food is unhealthy.

ELABORATION
10 OR MORE MINUTES

- Describe how students will develop a more sophisticated understanding of the concept.
- What vocabulary will be introduced and how will it connect to students' observations?
- How is this knowledge applied in our daily lives?

Use your favorite vocabulary strategy to introduce some or all of the following terms:

- Nutrient — a substance used by an organism to survive, grow, and reproduce
- Malnourishment — a diet which is lacking in one or more nutrients
- Overnutrition — a diet which has too much of a particular nutrient or too many calories overall
- Food insecurity — limited or uncertain availability of nutritious food
- Food desert — an isolated area (typically urban) with limited access to affordable and nutritious food

Part 7 of the associated worksheet asks students to apply these definitions using the National Geographic interactive.

EVALUATION
5-10 MIN

- How will students demonstrate that they have achieved the lesson objective?
- This should be embedded throughout the lesson as well as at the end of the lesson

Evaluation could take many forms including a think-pair-share, exit ticket, mini discussion or drawing activity. Possible questions to guide evaluation:

- How healthy is the average American's diet? Explain.
- How similar to an average American's diet is your diet? Explain.
- How healthy is your diet? Explain.

EXTENSIONS**GOING DEEPER**

Option One: You may want to explicitly connect the lesson to the visit to the Discovery Center. At the Gates Foundation we do a lot of work in global health and we have a strategy specifically focused on nutrition. To help provide background on why nutrition is essential for people to lead healthy lives, you could show the TED Ed video on "How the Food You Eat Affects Your Brain" - about the connection between brain function and food. (<https://ed.ted.com/lessons/how-the-food-you-eat-affects-your-brain-mia-nacamulli>).

Other possible videos to use:

- Should we eat bugs? <https://ed.ted.com/lessons/should-we-eat-bugs-emma-bryce>

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- What would happen if the entire world was vegetarian? <https://ed.ted.com/featured/dollWkHI>
- How the food you eat affects your gut: <https://ed.ted.com/lessons/how-the-food-you-eat-affects-your-gut-shilpa-ravella>

Option Two: Assign students to keep a food journal as homework – or to ask them to go home and create a pie chart of the food within their household according to the food types discussed in the lesson (grains, produce, dairy/eggs, meat, sugar/fats).

STANDARDS

- WA Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.
- WA Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
- Standards relating to using evidence to justify a conclusion may apply.

DIFFERENTIATION STRATEGIES TO MEET DIVERSE LEARNER NEEDS

WHAT THE WORLD EATS EXPLORATION WORKSHEET

PERIOD

NAME

PART 1: PREDICT!

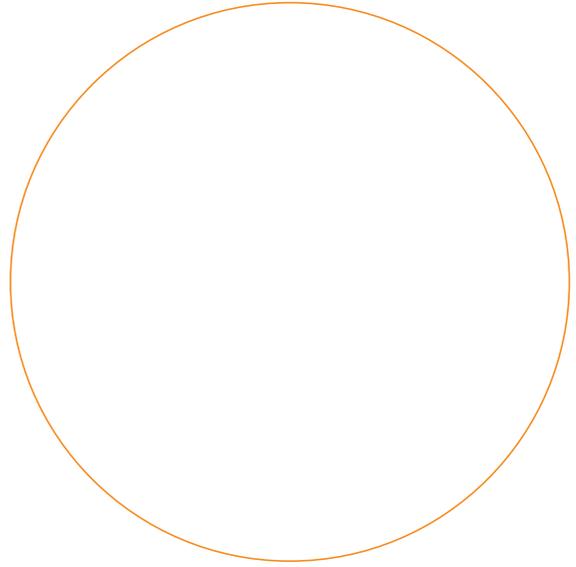
What do you think? How much of each type of food do you think people eat on average across the world?

Percent of daily calories (make sure it adds to 100%)

Grains (bread, rice, corn etc.)	
Produce (fruits and veggies)	
Dairy and Eggs	
Meat (chicken, pork, fish etc.)	
Sugar & Fat (oil, sweets etc.)	
TOTAL	100%

PART 2: REALITY

Go to www.nationalgeographic.com/what-the-world-eats and fill in the pie chart with the actual percentages of each type of food. Be sure to label your chart!



PART 3: EXPLORE

Explore the data from the website for at least five (5) minutes. Click through at least three (3) different countries. Select the colored parts of the pie chart to see what happens. Also try moving the bar below the pie charts to see how a country's food consumption has changed over time.

Write down three things you discovered that surprised you.

1.

2.

3.

PART 4: ANALYSIS – COMPARING MEAT EATING

1. Who eats more meat, the United States or China? Be careful! Try to answer the question in both calories per person and grams per person. What do you find?
2. What type of meat is most commonly eaten in China? What type is most common in the U.S.? How does this relate to your answer to question 1?
3. Who eats the most seafood worldwide?
4. In what part of the world is pork the most popular?
5. Which country eats the *least* amount of meat? Why might that be? You are free to search other sites for the answer.

PART 5: ANALYSIS – CHANGES THROUGH TIME

1. Today, what percentage of the average American's diet (measured in calories) comes from Sugar & Fat?
2. What percentage of the average American's diet came from Sugar & Fat in 1961?
3. Compare the amount of sweeteners to the amount of vegetable oil in American diets over time. Is the change mostly due to sugar or fat?
Hint: look at the change in calories for each.
4. Of the three African countries (Kuwait, Libya and Somalia) which has shown the biggest change in their diet over time? Justify your answer.
5. In what year did Americans eat the most calories?
6. In what year did Indians eat the most calories?
7. In what year did North Koreans eat the most calories?

