

## Nutrition Labels Lesson Plans

Materials: bag of sugar, scale that measures grams

**Before you get to part 4, take 12 labels and copy them onto paper. Make this the next to last page on the packet.)**

Skills and Knowledge: Adding, subtracting, using place value, rounding, picto./bargraph, line plot, math fluency

**3.NBT.1.** Use place value understanding to round whole numbers to the nearest 10 or 100.

**3.NBT.2.** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

**3.MD.3.** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

Human Services: food scientists, public health social workers, dietician, school counselor

Hostpitality and Tourism: executive chef, pastry chef, caterer, kitchen manager, cruise director, restaurant manager

### Connection:

You are a **dietician** and are in charge of delivering a presentation to **cruise director** of a large cruise ship line. You hope to pilot an improved diet program on his ship and to study its effects on the passengers. You intend to collect data on the health of the passengers when they board the ship and when they disembark (get off) the ship. This is a perfect way to see if it was your diet that improved their health since they will not have access to any other foods. You are sure that if you can collect data that shows an improvement in the passengers' health, you can then use that data to convince the entire cruise line to adopt this new, healthier, menu. You know that it would positively impact the lives of thousands of people a year.

You think to yourself, "I can see it now, a cruise liner that advertises the fun AND the health benefits its passengers will have. How exciting and what a great way to serve others!"

You have been trying to figure out a way to impact Americans' diet for years. You have made this pitch to **restaurant managers** before without success, but you are

not a quitter. You **persevere** despite the disappointing setbacks. You tell yourself, "I will keep trying until I find someone who is willing to help me make my dream happen. I will find someone who cares about others' health just as much as I do. I will find someone to partner up with me to make this happen. I will find a **collaborator**, and with their help, I will make a difference."

You walk into a giant office building. It must be 50 stories tall! You ride the elevator up and the secretary walks you into a room with a long table. There are 7 people there in suits. At the end of the table, the CEO, the guy who runs the entire cruise liner company is sitting there looking impatient. Am I late? No, the cruise ship manager is smiling at you. Trying to calm your nerves. He has obviously, some how, convinced the big guy, the CEO, to come to the meeting. This meeting is a lot more important than I thought. "This is my big chance!" you think. You smile at your collaborator, and say, "Good morning everyone." The future depends on your data and how convincing your presentation is. You smile inside and think, "I've got this!"

...5 years ago, you began on a quest to improve the health of Americans. You saw a problem, and you decide not to quit until you've solved it. You will show others that there is a health crisis.

You are the dietician. You want to solve this problem. But how will you do that?

Let's learn about the problem, collect data, and make our presentation. You know how to do this. You learned how in third grade! These big shot cruise liner guys don't have a chance against you!

### **Step One:**

Understand the problem inside and out. Become a leader in your field; become an expert.

#### 1. Read the article

At desks:

Read "What is Obesity?" one time through in silence. Read it again, but this time text-code it for these three items: *New to me, important/worth sharing, question.*

Come to rug:

Turn and share with a neighbor what you found.

Give your attention to your teacher. Begin anchor chart:

**Why do we care about obesity? How does it impact us?** (Collect what the kids say)

Second anchor chart question:

**What are the causes of obesity?** (Guide them to the impacts of a bad diet.)

What happens to our bodies if we have a poor diet and become obese?

Close read the article "Effects of Poor Nutrition" as a class. Have kids follow along as you do a think aloud while moving through the close read process. Use the ELMO so you can model writing on paper (define words, write jist, make notes, talk to yourself on the paper). Have kids help you do this think aloud/write aloud.

Once you have made a royal mess of the article, go back to your anchor chart to answer the next question: **What happens to our bodies if we have a poor diet and become obese?**

**Answer the last anchor chart question: Are there any other important facts, about obesity or a poor diet, that we may want to share?**

Use the following cite to compare different countries.

[http://www.who.int/gho/ncd/risk\\_factors/overweight/en/](http://www.who.int/gho/ncd/risk_factors/overweight/en/)

Use addition and subtraction to figure out the difference between obesity and overweight rates. Do this as a class on the Activeboard.

## **Part Two**

Say, "O.K., well done. Now, if it's a poor diet that is causing the problem, and a bad problem it is, how might you, as a dietician, help others?" (Listen and probe responses.)

Next, "Alright, we know the problem. We know where the problem comes from. We know how bad it is. Let's figure out how to not become victims of the problem; how to keep ourselves safe from obesity and its dangers. Once we know how to protect ourselves, we can protect others."

What tells us if food is good for us or bad for us? (Lead to the answer: The Nutrition Labels)

How do we use those? How do we read them to get all the facts about what we are putting in our bodies? Let's find out.

Watch:

How to read a food label video-

[http://kidshealth.org/kid/stay\\_healthy/food/labels.html](http://kidshealth.org/kid/stay_healthy/food/labels.html)

and

Food labels, health, and Mrs. Obama:

<http://abcnews.go.com/GMA/video/fda-change-food-labels-serving-sizes-22694659>

Have kids walk you through a close read of article “Figuring Out Food Labels”. Have them follow along on their papers. Let them come up to the ELMO and write. Encourage questions.

Make a chart with a circle in the middle. Write Nutrition Label in the circle. Divide the chart on the outside of the circle into 4 equal parts. Put it on the board. Label the 4 parts: Serving size, calories, total fat, and total carbohydrates. Let them come up and write a few words, that they think are important, in one of the quadrants. (Tell them this is similar to when they popcorn.)

Have them answer these questions using the nutrition label on the “Figuring Out Food Labels” article.

1. What is in the package this nutrition label would be attached to?
2. How much of the food in the package would equal one serving size?
3. How many calories are in one serving?
4. How much fat is in one serving?
5. How much sugar is in one serving?
6. How much protein is in one serving?
7. How many calories are in 3 servings?
8. How much fat is in 3 servings?
9. Does this food have any nutrients? If yes, what are they?

### **Part Three**

Do concentric circles on chart paper:

(You may need numbers ready to hand out in order to get the kids sorted correctly into their groups.)

Have the following out; one at each piece of chart paper. Have kids learn how to explain the info. on the poster. Be sure to go around and check to see if each group understands it correctly. Have the kids break up into groups that has one expert

from each station. New groups rotate around explaining what the info. at each station.

“Effects of Too Much Sugar”

“The History of State Obesity Prevalence”

“Consumption of Soda and Fruit Juice Has Increase Dramatically”

“Overweight and Obesity”

“U.S. Sugar Consumption, 1822-2005”

“Total Sugar Intake Has Skyrocketed in The Past 160 Years”

Debrief. Add to anchor chart.

**Make a stapled together packet with the following:**

“The History of State Obesity Prevalence”

“U.S. Sugar Consumption, 1822-2005”

Sheet you made with Nutrition Labels

“Total Sugar Intake Has Skyrocketed in The Past 160 Years”

“Consumption of Soda and Fruit Juice Has Increase Dramatically”

#### **Part Four**

Remind kids about including titles and labels for the axis.

#### **Bar Graph**

**(Before you get here, take 12 labels and copy them onto paper. Make this the first page in the packet.)**

**Put the kids into pairs.**

Ask kids to select 7 foods. Have them make a bar graph with the calories.

Have them make a second bar graph with the sugar.

Have them make bar a graph using the data from “The History of State Obesity Prevalence”. They need to use an appropriate scale. One that will let the viewer easily tell the difference between the states’ obesity rates. (A scale of 2 or 5 would be best.)

#### **Pictograph**

Use the “The History of State Obesity Prevalence” sheet to show the number of states with obesity numbers falling within the given ranges.

Have them make a pictograph for "U.S. Sugar Consumption, 1822-2005". (They can use a bag of sugar for their picture. Have them display the number of pounds of sugar for each year. (A scale with each bag of sugar representing 5 or 10 lbs. would be ideal.)

### **Line Plot**

Use the 7 food labels chosen above to make a line plot for each of the following: Vitamin A, Vitamin C, Calcium, and Iron.

Have them make 2 line plots: One for the amount of calories and one for the amount of fat. (They will need to use ranges. i.e. 3 cereals with 100-120 calories, 2 with 200-220 calories. Make them use the same size range/scale all the way across.)

### **Extension**

For those who get done early: Tell them to display the data on the "Total Sugar Intake Has Skyrocketed in The Past 160 Years" and "Consumption of Soda and Fruit Juice Has Increase Dramatically" sheets using as many ways as they can (bar graph, pictograph, and line plot).

### **Adding/Subtracting**

Have kids compare 2 labels.

How many calories do they have in all?

How many more calories does one have than the other?

Again, have kids compare 2 labels.

Using grams-

How much fat do they have in all?

How much more fat does one have than the other?

Again, have kids compare 2 labels.

Using grams-

How many carbohydrates do they have in all?

How many more carbohydrates does one have than the other?

## **Rounding**

Use the 12 labels.

Round each label's carbohydrate count to the nearest 10.

Round each label's calories to the nearest hundred.

## **Estimate**

About how many carbohydrates would you have if you add the carbs. from all the labels together? Collect guesses.

Show them, using the scale, how much sugar each one has. Add the sugar from each label on the board as you go. Each time you add it on the board, add sugar to make your board number and the scale number match. Put the total amount of sugar from the 12 labels into a tall cylinder. Ask them what would happen if they ate all that sugar at once.

## **Showing What They Know: Making their Presentation**

Give them a pack of bound sheets of construction paper. Have them use this to design their presentation.

Include these parts:

- opinion piece
- important facts (from anchor chart)
- graphs with explanation
- informational piece summarizing the facts

## **Extension**

Use the book What the World Eats and the math you know to graphically compare the United States to Chad.

Try to use each of the following at least once.

Pictograph, bar graph, line plot, addition, subtraction, and rounding.