

Burger Data-

Analyzing calories, fat and sodium in popular fast-food chain hamburgers

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Activity overview

Students will explore nutritional information for several fast food hamburgers using statistical applications. This exploration involves analyzing calories, fat, and sodium content of several popular fast food hamburgers. The data will be used to general box-and-whisker plots, which help students comprehend the data. Students will be asked questions relating to consumption and choices regarding fast food hamburgers. This activity could easily be extended.

Concepts

Box-and-Whisker Plots Median

Teacher preparation

Load the burgers.ths file onto all student calculators. The burgert.ths file is for the teacher to be able to view the results the students should obtain as they work through this activity. A worksheet file, burgerws.doc is also available with this activity.

Classroom management tips

The instructor should direct students to open the burgers.tns file. Once students have opened the file, the teacher should monitor students, assisting them as they work through the steps provided. Students may answer the questions in the burgers.tns file or a worksheet may be created to provide a place for students to give written responses. This activity should be followed with discussion regarding the nutritional aspects of fast food and eating within dietary limits. The caloric content of fresh fruits and vegetables should be shared as a comparison to help students see that they get more for their calories out of fruits and veggies.

TI-Nspire Applications

Spreadsheets Statistics Box-and-Whisker plots

Step-by-step directions

1. At the home screen, select My Documents.

2. Browse to the folder titled burgers.

3. The first page of the document should appear as shown. Read this page to familiarize yourself with what this activity is about.

4. Move to the next page of the document by using (. On this page, you will find a spreadsheet with calorie, fat, and sodium data for various fast food burgers.

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Burger Data

by: Lisa Blank Grade level: secondary Subjects: mathematics Time required: 20 to 40 minutes

5. Move to the next page of the document by using $(m)_{\mathbf{D}}$. 1.1 1.2 1.3 1.4 RAD AUTO REAL Read this page to get an overview of what you are to do on the On the following pages, create next few document pages. box-and-whisker plots to compare the burger data. 6. Move to the next page of the document by using $(m)_{D}$. On 1.1 1.2 1.3 1.4 RAD AUTO REAL Î this page, you will first need to select the page type. To do this, press (m) and select choice 5, Add Data & Statistics. Press Menu 7. You will then view a scattered plot. You need to first select 1.1 1.2 1.3 1.4 RAD AUTO REAL the variable for the x-axis. Using the Nav Pad, move the cursor \odot to the bottom to the "click to add variable" label. Click here and \odot \odot you will be given options for the x-variable. Click to add varia \bigcirc $^{\circ}$ \bigcirc $^{+}$ Click to add variable 8. For the first plot, we will select calories. For the 2nd and 3rd 1.1 1.2 1.3 1.4 RAD AUTO REAL plots, you will use fat and sodium respectively. \odot \odot \bigcirc Click to add variable \bigcirc \odot \bigcirc 😁 calories {⊷}fat Click to add variable

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9. A dot plot for calories should now appear. This is one way to represent the data, but we will go one step further with this plot.

10. Press (m), select 1:Plot Type, followed by 2:Box Plot

11. Your box plot will then appear.

12. To view two graphs on one screen, we will next split the screen. Press () followed by () and select 6: Page Layout, followed by 2: Select Layout, followed by 3: Layout 3.

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13. Now you can move your cursor down to the bottom portion of the screen, press , and proceed to create a box plot for fat. On the next page of the document, you will similarly set up a single box plot for the sodium data.

14. On each plot, you can access key values by moving the cursor over the box plot. As you move the cursor, the by symbol will appear and the key interval values will be displayed on the screen.

15. The remaining pages have questions with answer spaces. Students may answer the questions on the screen and save their answers with their completed file on the Nspire, or they may answer questions on the associated worksheet.

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Question	
Determine the median amount of calories for the burgers.	
Answer 🛛 😵	

Assessment and evaluation

- Collect the student questions and/or .tns files from the handhelds and assess them for understanding.
- Follow up with a similar activity, providing somewhat decreased instruction to check for understanding
 of the process and concepts involved. A good way to do this might involve having the students
 choose another favorite fast food item and make similar comparisons. There are many great sources
 of data available through internet sources, which make the possibilities for this type of exploration
 virtually endless.

Activity extensions

• This activity provides an excellent opportunity for math and health teachers to work cooperatively in the study of nutrition and decision making regarding eating habits.

Student TI-Nspire Document

burgers.tns

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Burger Data-	A B calories C fat D sodium	On the following pages, create
Analyzing calories, fat and sodium in popular	•	box-and-whisker plots to compare the
fast-food chain hamburgers	1 whopper 680 39 940	burger data.
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grams), and sodium (in milligrams)	4 jumbo jack 560 33 800	
information for nine different popular burgers.	<mark>5</mark> big'n tasty 540 32 970 🖵	
Note that none of these burgers contain	AI	
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		Answer 🛛 💝
		I.6 1.7 1.8 1.9 ▶ RAD AUTO REAL
Question	Question	Question
How many of these burgers of median	What is the median number of grams of fat	netrition.com recommends 65 grams of fat
caloric content you eat in a day to reach the	for the burgers?	for adults and children 4 or more years of
suggested calorie consumption for a typical	X	age. How many burgers with this median
adult male or remale between the ages of 25 and 502	Answer	fat to 65 grams per day?
The energy (calorie) intake suggested by		
the Food and Nutrition Board of the National		Answer 🛛 🖉
1.7 1.8 1.9 1.10 ▶ RAD AUTO REAL ☐		
Question	Question	
What was the median amount of sodium for	netrition.com recommends 2400 mg of	
the given burgers?	sodium per day for ages 4 and over. How	
Anowar	many burgers with the median level of	
	exceed 2400 mg?	
	Answer 😵	