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| In this project, you will research the relationship between nutritional information (total fat, carbohydrates (carbs), and proteins) of fast food. You must use **10 items** (a hamburger, a cheeseburger, chicken, fries, a drink, a dessert) from the menu of a **burger restaurant**. You will connect linear models to this real-world data. You will model your system **numerically**, **graphically**, and in **written form**. It is expected that your final written presentation will be well organized, make connections to your real-life scenario, and demonstrate your understanding of modeling. |

**Data Collection:**

1. Go to the nutritional information website for fast food (<http://www.fastfoodnutrition.org/>) to find your restaurant information to collect your data points (beverages, desserts, etc).
2. Use two of the following of the given nutritional information items: **carbohydrates, total fat, and protein** to compare.
3. Collect at least **10 pieces** of data based on the nutritional information you chose to compare, including the 6 topics listed above.
4. You will use this data to create a model that can be used to analyze the relationship between nutritional components of fast food.

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| **Project Components. Using Google Sheets.** Your project must include the following:* A table illustrating the nutritional information you have collected from the website.
* Three visual display (graph) of your data that clearly communicates the nutritional information.
* A model/line of best fit for the data set and an explanation of how it was determined.
* An explanation of what the slope and *y*-intercept mean in the context of the problem.
* An analysis of the relationship between the two nutritional information items you selected.
* A mathematical explanation of the appropriateness of your model.
* Google Slide or Power point of your research
* Be ready to present your project to the class.
 | **Guiding Questions:*** In which ways can I clearly communicate the nutritional information?
* How can I determine an appropriate model for the data set?
* How can residuals help me evaluate the appropriateness of my model?
* How can the correlation coefficient help me evaluate the appropriateness of my model?
* What is the implication of each nutrient to our health?
* What conclusion can you draw from your data?
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**Example: Data Display (Google Sheets):**

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| --- | --- | --- | --- |
| **SHS Burgers**  | **Total Fat** | **Carbohydrates** | **Protein** |
| Bacon Burger | 57 | 48 | 48 |
| Hamburger | 13 | 28 | 10 |
| Cheeseburger | 16 | 28 | 14 |
| Fries (large) | 5 | 72 | 22 |
| Coca Cola | 0 | 51 | 0 |
| Chicken Burger | 22 | 42 | 25 |
| Grilled Chicken Salad | 36 | 16 | 14 |
| Ice Cream Sundae | 5 | 52 | 6 |
| Caramel Ice Frappe | 4 | 72 | 22 |
| Ham, Egg and Cheese Biscuit | 16 | 33 | 22 |

**Steps:**

* + - 1. **Enter data**
			2. **Highlight data**
			3. **Insert – Chart**
			4. **Chart Editor – create final scatter plot graphs**
			5. **Play around with different graph views ( Stacked Column Chart )**

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| **Model/Line of Best Fit (use calculator):**  | **Interpretation of the Line of Best Fit**  |
|
| **Two Student-Produced Questions about the model and answers:** 1. Question # 1 (Ex. What item had the highest amount of carbs? )
	1. Answer #1
2. Question #2
	1. Answer # 2
 | **Correlation Coefficient (find r value):**  |
| **An analysis of the relationship (causation) between the two nutritional information items you selected. (2 points)** |
| **Is your model an appropriate representation of the data? Why or why not? What other model would be a more appropriate representation (explore other graphs). (4 points)** |

Google Slide 20 pts

* Cover/Title Page (2 slides)
* How we started/what we did
* Table- 1 slide
* Charts - 3 slides
* Conclusion (4 slides)
* Carbohydrate: (high/low)
* Protein:(high/low)
* Fat: (high/low)
* My conclusion

 (**Total Slide: 12 or more)**

Grade

* Google Slide 20 pts
* Google Sheet 14 pts
* Worksheet and analysis 25 pts
* Presentation 20 pts