

Overview

The purpose of this project is to collect data and see if there exists a relationship between two variables. You will continue working with descriptive statistics as well as practice using Google Documents and Spreadsheet to write up your results.

Additionally, we will practice working with the 6 out of the 7 sections of the Internal Assessment.

Section A: Introduction

Produce a title, a clear statement of the task and a clear description of your project and plan. Here you will describe **what** you will do and **how** you will do it.

Also, include what your hypothesis: What did you expect to find?

Section B: Information/Measurement

Survey **20 students** of the same sex as you. Record their names, height and shoe size in a Google Spreadsheet. This is your **Raw Data**.

Section C: Mathematical Processes

In this section, you will work out and include the following. Be sure to show all your work for full credit.

1. Organize your data into frequency tables for both variables (height and shoe size).
2. Find the mean, standard deviation, and five number summary for both variables. Include box-and-whisker plots for your data.
3. Make a scatter-plot of the data. Draw in the **line of best fit**.
4. Find the correlation coefficient. Include the extended table when doing this.
5. Find the equation of the line-of-best fit. As with the correlation coefficient, derive it from the original formula.

Section D: Interpretation of Results

Based on the math from Section C, what can you conclude? Use the **Table of Critical Values for the Pearson Correlation Coefficient** at $\alpha = 0.05$ to determine the significance of your findings.

Discuss what the **coefficient of determination** or R^2 tells you about your results.

Use the **line of best fit** to predict your expected shoe size based on your actual height.

Section F: Structure and Communication

Good structure, good flow, easy to read.

Section G: Commitment

From the IB Rubric:

“To obtain the highest achievement level for this criterion the candidate should have excelled in several areas such as those listed below. This list is not exhaustive and teachers are encouraged to add their own expectations.”

The candidate:

- actively participated at all stages of the development of the project
- demonstrated a full understanding of the concepts associated with his / her project
- participated in class activities on project work
- demonstrated initiative
- demonstrated perseverance
- showed insight
- prepared well to meet deadlines set by the teacher