

MODULE

3

Visualizations!

Introduction

As the first module within the IMPACT curriculum, this module serves as an introduction to the course. The students will get a good idea of what's expected of them, as well as what they can expect of the class throughout the rest of the year.

Objectives

1. Students will be able to accurately represent data.
2. Students will be able to make basic visualizations on Google Sheets for the purpose of analyzing trends in data.
3. Students will learn how to interact with Plot.ly UI and create a "Simple" Plot.ly chart.

Agenda

1. Credible datasets
2. Making basic data visualizations
3. Understanding plotly
4. Crowdsourced Sophomore Survey
5. <https://www.searchenginejournal.com/what-is-data-visualization-why-important-seo/288127/>

Activities

Don't Know The Truth (15-20 minutes)

Purpose:

Students will understand what credible and accurately represented data sets look like.

Materials:

Computers

https://docs.google.com/presentation/d/1tL3ySrPi7HcO_Us5HiDcTjkXgT1KHVbxZcF1icxOazQ/edit?usp=sharing

Directions:

1. Split students into groups of 3-4
2. Facilitators will display a lot of different data sets and students must sort the visualizations into misleading and not misleading.
3. Have groups go into groups of 3-4 that aren't in their initial group and compare rankings, and have your new group come to a consensus on the rankings.
4. The groups share their rankings and the class makes a consensus on the data
5. Name the different ways to make a misleading graph.

Discussion:

1. How did you decide on how a data set was misleading?
2. What filter could you use to filter out these bad data sets?

Teaching Google Sheets Visualizations (10-15 minutes)

Purpose:

Teach students how to use Google Sheets to create graphs. Making simple graphs is a good way to quickly find and analyze trends in data.

Materials:

Computers

A cool data set (not currently linked)

Directions:

1. Connect your laptop to the projector and walk students through creating a simple bar graph and line chart on Google Sheets.
- 2.

Discussion:

1. How

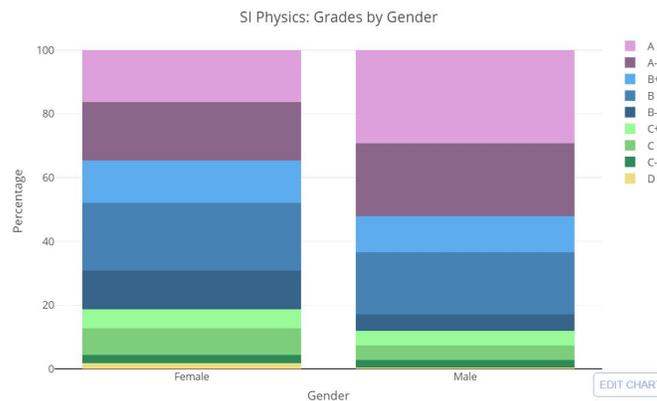
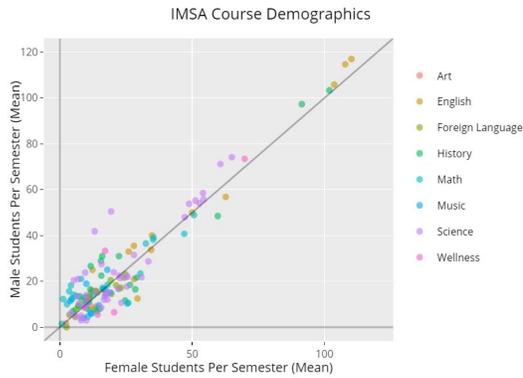
Something something Plot.ly UI (15-20 minutes)

Purpose:

Students will learn to create "Simple" graphs on Plot.ly as well as walking through the "Structure" tab on Plot.ly.

Materials:

Computers



Directions:

1. Show the DOPE visualizations Shubhi made.
2. Project your computer. Have everyone make an account with their IMSA email. Demonstrate how to use the spreadsheet function, traces, and choosing columns for traces. Have one facilitator walking around the room during each step to make sure that everyone is following along. Occasionally ask if people are following along or if they're having difficulties.
3. Give the class a data set and tell them that they need to create a line, pie, and bar graph. Let them do the graph making
4. Make it a race! Offer up some sort of prize. Examples: food, smelly pencil, bragging rights, etc.

Surveys

Project Interest Survey

<https://goo.gl/forms/ob3gTdeKAvjxgmuE2>

Crowd Sourced Sophs Survey

<https://goo.gl/forms/N6DFf7YH4ME8wKH62>

Sources

<https://www.statisticshowto.datasciencecentral.com/misleading-graphs/>
<https://venngage.com/blog/misleading-graphs/>