

Product Marketing

Unit: Maker Project and Google Sheets

Engineering Grade 10-12 Mr Diodati

OVERVIEW & PURPOSE

For engineering, students are asked to create a unique product for their year long Maker Project. One requirement of this assignment is to gather opinion data and use that data to make modifications to their product. This lesson is to teach them how to collect and then graph data using Google Sheets.

CTE STANDARDS

Engineering and Architecture

11.0 Demonstration and Application

11.3 Demonstrate entrepreneurship skills and knowledge of self-employment options and innovative ventures.

11.4 Employ entrepreneurial practices and behaviors appropriate to Engineering and Architecture sector opportunities.

OBJECTIVES

1. Create an item with variable selections for a class survey.
2. Collect data throughout the room based on that item.
3. Input that data into Google Sheets, creating a graph to display the results.
4. Discuss the results of that data collection and how it might drive a final product.

MATERIALS NEEDED

1. Laptops or Chromebooks
2. Google Accounts

VERIFICATION

Steps to assess student learning:

1. Check that they have an item with selections.

2. Check that they have collected data from the class.
3. Check that they have a graph of the data
4. Class discussion of potential modifications

ACTIVITY

Based on 75 minute block period:

Introduction (5 minutes)

After taking roll and getting the class settled, spend some time discussing the project details and how data collection drives business and product manufacturing. Give examples about how companies use random sample tests, secret shoppers, surveys and polls to further refine and improve their product. This lesson is going to show how students can collect data and use Google Sheets to graph that data, and then discuss how to use those results to improve a product.

Group Discussion (8 minutes)

Task - Students (either individually or in pairs) are asked to create a sample item with at least ten selections to use as a poll around the class. Some examples include asking students about their favorite scent, favorite color, favorite flavor, or favorite sport. These selections need to be linked in some way to an item. An example would include creating a new design for a bar of soap, and asking about scents or designs. Another example would be to create a new style of pen, and asking about colors or textures or tip design.

*The product and selections only need to be aligned enough to get feedback, the main goal of this lesson is to use Google Sheets, not create a new product.

Whole Class Data Collection (7 minutes)

During this time the students are to multitask by roaming around the room and simultaneously collecting data on their own product and also answering questions about other products. The ultimate goal in this time period is to have everyone have as many responses on their survey as there are students in the class (they can include themselves). It will make your assessment easier if you know how many responses to look for.

Youtube Video Research (15 minutes)

Once finished collecting the data, the students are given time to look up and watch instructional videos on Youtube on how to create graphs in Google Sheets. Some example video links are included in the section below. During this portion of the activity, students will learn how to use Youtube for education and not just entertainment, so make sure they are on task and watching appropriate videos.

Google Sheets Graph Creation (25 minutes)

After learning how to use Google Sheets, students are now tasked with creating a graph of their

data collected this class period. They should be allowed to reference the videos previously watched if they become stuck or confused, but they should not be given explicit directions on how to accomplish this task. After about 15 minutes, if groups are completely unsure of how to proceed the teacher can give guiding suggestions to keep them on task and moving forward with the creation of the graph. Students are also encouraged to assist other groups if they find any tips or pitfalls of using Google Sheets.

*Teacher should check the graphs to make sure the correct graph is being used to visualize the data, and if not, offer suggestions about other graph styles to use.

Data Analysis (5 minutes)

Once the graph is created, the students are given a short amount of time to assess the information in the graph and decide how to use that information to either create, change, or improve their product. An example would be if the class overwhelmingly decided that a vanilla scent is their favorite, the group would create a vanilla candle or vanilla scented soap.

Group Discussion (10 minutes)

Call on a few groups to share out their graph, the results of the data, and how they would change their product based on that information. Wrap up the lesson by applying this information to their overall class project and how they should collect and graph data on their product in order to improve its quality and appeal to the public.

VIDEO LINKS

<https://www.youtube.com/watch?v=13tVl6RV3S4>

<https://www.youtube.com/watch?v=faVMbcmrZxw>

<https://www.youtube.com/watch?v=kvcxyXYBbeI>

<https://www.youtube.com/watch?v=713apMgym-w>

LINK TO INDUSTRY/JOB INFORMATION

The following sites have resources to help you input information on careers and job descriptions for all fields. It would be beneficial to note to the students that with the skills of data collection and product refinement, they can access jobs in marketing and research, and through the task of product creation they are using many skills found in the engineering sectors.

www.bls.gov/ooh

www.Onetonline.org