Data and Graphs Lesson (8.11) Measurement and Data

Essence Statement: Determine the association between graphed data.

Prerequisite Skills:
Higher Group - Summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals.

Lower Group - Organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more.

Monday:

Engage - Present project to students. Explain how students are going to collect, organize, and present data using different graphs. Review graph types and elements of a graph. Show example of finished product.

Task: Students will independently create a questionnaire using google docs.

Requirements -

Title

Directions

List of five or four book series.

Ending Question - How do surveys benefit businesses?

Tuesday:

Explore - Provide examples of how students are able to organize data using a frequency table. Review how to organize data using tally marks. Review how to create a frequency table.

Task: Students will organize data collected from Favorite Book Series Survey into a frequency table. Students will independently create their own Frequency Tables.

Ending Question - Why do we organize data? What are the benefits?
- To help us analyze and interpret better. Easier to read than going through all the data sheets.

Wednesday:
Explain - Students will continue creating graphs. Review key components of graphs. **Title, Key, Categories/Labels, & Scale.**
Low and High group will create a pictograph. Explain the purpose of a pictograph and discuss how to create. Model how to create. Students will independently create their own pictograph depicting the data collected.

Ending Question - What are the advantages of a pictograph?
- Express a large amount of information or data in a simple form.
- Since they make the use of symbols, pictographs attract attention i,e, it is an attractive way to represent data.
- Pictographs are easy to read since all the information is available at one glance.

Thursday:

Explain - Review key components of graphs. **Title, Key, Categories/Labels, & Scale.**
Model how to create a bar graph using Google Sheets. Students will independently create a bar graph in Google Sheets. Students will need to input data in sheets. Then review the different types of graphs available in Google Sheets. Create a bar graph with the required graph components.

Ending Question - Why would creating a graph in Google Sheets be more beneficial (easier) than creating a graph by hand?

High Group: Watch Khan Academy Video on How to Create a Dot Plot. Students will independently create a dot plot.

Friday:

Elaborate - Students will create their posterboard. Students will discuss and answer the following questions:

Determine if the frequency table, dot plot, pictograph, and bar graph represent the same data. Explain your reasoning.

Sample Response - The frequency table, dot plot, pictograph, and bar graph represent the same data, because the same data is represented in each graph and the corresponding categories have the same values.

How do graphs help businesses analyze data?

What conclusions can you draw from the data?