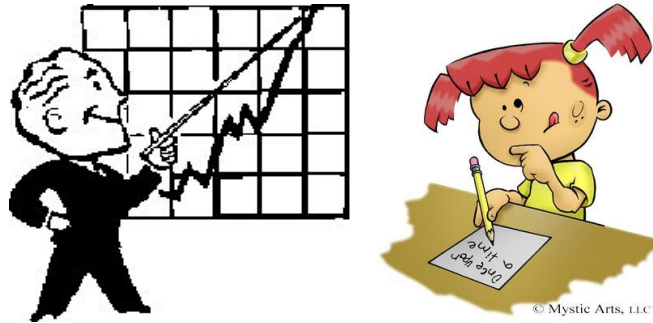


Numbers Never Lie!



Introduction

Here's the rundown, 6th grade is one of the fundamental years of your education. Believe it or not, 7th grade will be here before you know it. But, before you start thinking ahead, you have an opportunity to conduct, analyze, and apply your mathematical intuition to help complete your very first statistics project at HTMNC!

Project Overview

After studying graphs, analyzing, and measuring data, you will apply your knowledge to conduct your very own research study. In groups of two, you will decide on a question to conduct your study at High Tech Middle North County. You will record your data and use graphs to represent your findings to the school.

Essential Questions

- Why is it important to analyze and interpret graphs and tables?
- Why is sample size/population important to consider when conducting a study?
- What are errors? What are possible errors you may come across in your study?
- What are variables or factors in your study that might affect your findings?
- What conclusions can you make about your findings?

Learning Objectives

- Students will distinguish between a statistical question (numerical/categorical) with variability and non-statistical questions.
- Learn about different types of graphs and tables used in statistical analysis. See below:
 - Frequency Table
 - Dot Plots
 - Histograms
 - Box-and-Whisker Plots
- Find mean, median, mode, range, quartiles, and mean absolute deviation
- Learn about distribution of data
- Apply the principles of design to compose beautiful, professional, thoughtful work
- Learn how to interpret graphs
- Learn about sample size/population

Project Objectives

1. Conduct a study in groups of two. (Question must be approved)
2. You will create the following professional mathematical graphs:
 - 1 Frequency Table
 - 1 Dot Plot
 - 1 Histogram
 - 1 Box-and-Whisker Plot(will find mean, median, mode, quartiles, and mean absolute deviation)
3. You will create a professional photographic representation of your findings that will be displayed on our North County campus. Yes, that means that everyone who visits our campus will get to see your beautiful work!
4. Present your findings to an audience.

Timeline (may subject to change due to learners' needs)

Date	Focus
Sept. 5 -7	<ul style="list-style-type: none">• Analyzing and creating a statistical question• Distinguishing categorical data vs. numerical data
Sept. 10 - 14	<ul style="list-style-type: none">• Analyzing various forms of graphing data & data distribution• Create group statistical question• Begin investigating dot plots• Survey
Sept. 17 - 21	<ul style="list-style-type: none">• Investigation of histograms• Explore measures of center: mean, median, and mode• Analysis of data and create dot plots
Sept. 24 - 28	<ul style="list-style-type: none">• Investigations of Box Plots• Measures of variability (IQR, range, M.A.D.)• Continue work on group graphs
Oct. 1 - 5	<ul style="list-style-type: none">• Final Graphs• Celebration of Learning "Statistics"

Exhibition

Students will exhibit their work to their peers, parents, and the school. Graphs will be exhibited around the middle school's campus.

Assessment

- Process Folder
- Published Graphs (graded on a rubric scale)
- Unit Test

For students infographics

They will need to include the following:

- Statistical question
- One of their selected graphs
- 3 conclusions which will include:
 - The center of data calculated either by median or mean
 - The variability of their data either by range or IQR
 - Anything else they found interesting to share (must have a percentage)
 - For example, We noticed that 4/20 or 20% liked ice cream

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 2				Sept. 15th -Survey results returned -Analyze results (gain approval) - Begin rough draft of dot plot	Sept. 16th - Intro to histograms - Continue working on rough draft of dot plot
Week 3	Sept. 19th - Continue learning about histograms (distribution) Walls open during 2nd for project time	Sept. 20th -Median -Rough draft of histogram Dot Plots Due!	Sept. 21st Field Trip to Mission	Sept. 22nd - Mean - Continue working on histogram - Switch preps with Tracy	Sept. 23rd - circle - Mean - Histogram Due!

Week 4	<p>Sept. 26th -Intro to Box Plots -Begin Box Plots -Reflections</p> <p>New: Take MAP test/Continue working on box plots/reflections</p>	<p>Sept. 27th Continue learning about Box Plots - Need to talk about shape/IQR</p>	<p>Sept. 28th Box Plots are Due! Learn about Mean as a measure of center</p>	<p>Sept. 29th Learn about MAD as a measure of variability - Begin working on Infographic</p>	<p>Sept. 30th Circle Center vs. Variability Group work activity Continue working on infographic</p>
Week 4.5	<p>Oct. 3rd Continue working on infographic Begin Review</p>	<p>Oct. 4th Continue Review Infographics Due!</p>	<p>Oct.5th Celebration of Learning!</p>	<p>Oct. 6th All Day Science to launch Here Now, Gone Tomorrow</p>	<p>Oct. 7th All Day Science to launch Here Now, Gone Tomorrow</p>