



Lesson Plan 1: Data and Statistics

Subject: Mathematics

Grade Level: 3-5

Objectives/Outcomes:

- Collect numerical data, generate a line plot, and compare data sets.
- Find the mean, median and range of data sets.
- Communicate virtually with students as they are practicing their problem solving skills by finding the probabilities of simple events with likely and non-likely outcomes.

Curriculum Framework Standards:

- Data, Statistics and Probability

Procedure:

1. “Frontloading” (Before)

- a. Preparation and Planning
 - i. Students need to be familiar with the mathematical terminology:
 1. Data
 2. Line plot
 3. Mean
 4. Median
 5. Range

2. Assistance and Associations (During)

- a. Begin by discussing line plots - what they are and how you will use them to interpret data. Explain to the students that the line chart is a simple graph that follows data over time and it will be used for analyzing certain trends. Define the words mean, median, and range before proceeding.
- b. Ask the children who the New England Patriots are. Have a brief discussion about the Patriots.
- c. Share the New England Patriots regular season record from 1978-2019 with each student. Those are below or at the link here:
<https://patriots.1rmg.com/season/2019/media-guide/>. Tell them that the data represents the Patriots total annual regular season wins over the past thirty-seven years.
- d. Ask the class how they should label the line plot. Have them label their line plot at this time.
- e. Tell each student to create their own line plot based on the data you have provided. An x should be used to represent the number of wins for each year.
- f. Call on volunteers to describe any similarities and differences they see.
- g. Once each student is done tell them they now need to find the mean, median, and range based on their data. Ask students to report their statistics they calculated. Also ask what year had the most wins and the least? Are there any years that had the same number of wins?





- h. More questions to extend the lesson:
- Suppose the Patriots had ____ wins in _____. How would that change our line plot?
 - Suppose the Patriots only had ____ wins in _____. How would that change our graph?

3. Reflection & Readiness for Application (After)

- Get data on touchdown passes that Tom Brady threw while the starting quarterback from 2001-2019 at www.patriots.com.
- Create a line plot using this data and have each student calculate the mean, median, and range.

Assessment:

Use the following rubric to assess the students:

3 points The student actively participated in virtual class discussions and demonstrated a thorough understanding of the concept. The student correctly collected and displayed the data on the line plot and the answers for the mean, median and range are all correct.

2 points The student participated in most of the virtual class discussion and demonstrated a partial understanding of the concept. The student correctly collected and displayed the data on the line plot most of the time and the answers for the mean, median and range are mostly correct.

1 point The student did not participate in virtual class discussion and demonstrated only a limited understanding of the concept. The student correctly collected and displayed the data on the line plot some of the time and the answers for the mean, median and range may contain a correct answer but required work is not provided.

0 point The student did not participate in virtual class discussion and the line plot is inaccurate or incomplete.

Materials/Resources:

- Statistics of the New England Patriots Regular Season Record over the last 25 years
- Line Plot Paper
- Pencils
- Calculators





New England Patriots Regular Season Record 1978-2019

Year	Record (wins/losses)
2019	12-4
2018	11-5
2017	13-3
2016	14-2
2015	12-4
2014	12-4
2013	12-4
2012	12-4
2011	13-3
2010	14-2
2009	10-6
2008	11-5
2007	16-0
2006	12-4
2005	10-6
2004	14-2
2003	14-2
2002	9-7
2001	11-5
2000	5-11
1999	8-8
1998	9-7
1997	10-6
1996	11-5
1995	6-10
1994	10-6
1993	5-11
1992	2-14
1991	6-10
1990	1-15
1989	5-11
1988	9-7
1987	8-7
1986	11-5
1985	11-5
1984	9-7
1983	8-8
1982	Players' strike-shortened season
1981	2-14
1980	10-6
1979	9-7
1978	11-5

