

Guns in Our World Part Two: Using Line Graphs to Understand Impact of Gun Violence on Youth

PURPOSE

To use line graphs to analyze data about the impact of gun violence on students and their peers.

GRADE LEVELS

Elementary
Early Middle School

CONTENT AREAS

Math
Science

TIME

1 30-40 minute period for lesson, plus
1 20 minute quiz session on a different day

STUDENT OBJECTIVES

- Students will define terms associated with graphing, including axes, points, line segment, data, and line graph.
- Students will self-reflect to numerically represent states of emotion (fear).
- Students will use a line graph to represent personal levels of emotion.
- Students will interpret data in a line graph correctly.

STANDARDS AND BENCHMARKS

Mathematics State Goal 6D, 10A
Science State Goal 11A

LEARNING STYLES

Visual/Spatial
Logical/Mathematical
Intrapersonal

MATERIALS

Line Graph How-To
Rate My Feelings Number Line Worksheet
Blank Line Graph
Line Graph Quiz
Line Graph Key

VOCABULARY

Axes, x and y
Data
Line Segment
Line Graph

ASSESSMENT

Line Graph Quiz

ACTIVITIES

Anticipatory Set

- Put up the overhead (or distribute copies) of the **Line Graph How-To** handout. Read through the handout as a class and ask students to interpret the graph by asking the following questions:
 - Which month had the most number of students out sick? [May]

- Were there more students ill in January or December? [January]
- How many students were ill in January? [Fifty]
- Which month had the least number of students out sick? [November]
- How many months had fewer than 30 students out sick? [Three]

Lesson:

- Define the following terms:
 - **x-axis:** horizontal line
 - **y-axis:** vertical line
 - **data:** a collection of information (facts, numbers, measurements)
 - **Line Segment:** a section of a line between two points
 - **Line graph:** uses lines to join points that represent the data, showing rise and fall
- Tell students that they will be creating a line graph to compare data about their own emotions in response to a variety of situations. A line graph shows changes (increases or decreases) over time or changing conditions.
- Pass out the **Rate My Feelings Number Line Worksheet** and have students complete independently. You may wish to read through the directions and model the first question before asking students to complete on their own.
- Pass out copies of the **blank Line Graph paper** and help students set up their graphs for the data on their tally charts.
 - **X-axis** should be labeled “Scenarios” and the **y-axis** should be “My Feelings Ratings”
 - The scale should go from 0 (at the intersection of the two axes) to 10 (the very top line)
 - The points along the x-axis will correspond to each of the questions from the number line worksheet. You may wish to have students write these in or jot down notes regarding each question so you and they will not need to refer back to the number line worksheet when they are finished with their graphs.
 - Tell students that they will begin graphing the data from their number lines and remind them to give their graph an appropriate title when they are finished.
- Allow students to work in pairs to complete their graphs (but using their own data!) and check to make corrections before dismissing students.

Debrief/Assessment:

- Debrief by asking students the following questions. They should use their graphs to answer, with their number lines put away (unless you elect to have students not write the questions on their graphs as suggested above). Be sure to refer to changes as increases and decreases.
 - Which was the scariest scenario for you?
 - Which scenario would make you the least afraid?
 - Why do some situations make you more afraid than others?
 - What makes a particular situation scary or not scary?
- Review the **Line Graph How-To** and tell students to study it for a quiz next class period. The quiz will cover the terms they learned during the lesson plan and graphing.
- Assess student understanding using in-class **Line Graph Quiz** and re-teach if necessary.

Suggestions for Extension Activities:

1. Follow with a lesson plan on gun safety using **Don't Become A Statistic**.
2. Precede this lesson plan with **Part 1** of this lesson plan using bar graphs.
3. Have students pair with other students and exchange their personal data from their number lines. Teach them how to do a double (or triple) line graph to compare their own data with that of their classmates (make sure they include a key). Identify similarities and differences and discuss experiences and viewpoints that influenced the differences.