

# Kids Count: Using Fractions and Percentages to Understand the Impact of Gun Violence in Chicago

**Note:** Students should be familiar with reading and interpreting bar graphs before using this lesson plan. The **Guns in Our World** Lesson Plans are an excellent research for introducing bar and line graphs. It will also help if students have a basic understanding of fractions, decimals, and percentages.

## PURPOSE

To interpret graphs and represent data in percentages and fractions in order to visualize the impact of gun violence in Chicago

## GRADE LEVELS

Late Elementary  
Middle School

## CONTENT AREAS

Math  
Science

## TIME

1 class period, plus homework time

## STUDENT OBJECTIVES

- Students will define mathematical terms
- Students will calculate percentages and convert them to fractions.
- Students will correctly read and interpret data in a bar graph.
- Students will use critical thinking skills to consider a problem in mathematical terms.

## STANDARDS AND BENCHMARKS

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

## LEARNING STYLES

Visual/Spatial  
Logical/Mathematical

## MATERIALS

Simple Bar Graph  
Fractions and Percentages Terms  
Homicide Tracker PowerPoint  
Homicide Tracker Calculation Steps Worksheet  
Homicide Tracker Calculation Steps Teacher Guide  
Homicide Tracker Percentages and Fractions Homework  
Homicide Tracker Percentages and Fractions Homework Key

## VOCABULARY

Integer  
Base 10  
Decimal  
Fraction  
Percentage

## ASSESSMENT

Homicide Tracker Percentages and Fractions Homework

## ACTIVITIES

### Anticipatory Set

- Present students with the picture of the **Simple Bar Graph** and ask the following questions:
  - What type of graph is this? (Bar graph)
  - What does this graph tell you? (the color of hair for a group of 22 students)
  - What is measured by the x axis? (number of students)
  - What is measured by the y axis? (hair color)
  - What are the most and least common hair colors? (black, red)

### Lesson:

- Define the following terms (use the **Fractions and Percentages Terms** teacher guide):
  - **Integer**
  - **Base 10**
  - **Decimal**
  - **Fraction**
  - **Percentage**
- Refer back to the **Simple Bar Graph** and point out to students that all of the numbers are *integers* because they include no decimals. Review that the total number of students—22—reveals (according to Base 10) 2 in the one's place, and 2 in the ten's place.
- Remind students that fractions and percentages are a handy way to put data from charts into understandable terms and that today's activity will be practicing calculating percentages and converting to fractions as a way to understand the problem of gun violence in Chicago.
- Put up the **Homicide Tracker Powerpoint** presentation and go through it as a class. You may also wish to print and copy the presentation for students. The presentation includes a notes section for teachers to provide supplemental information. To print this, select Notes view on the print menu of the Powerpoint. Each slide will print with the teacher notes underneath.
  - It is important to make sure students understand what the term *homicide* means and that these numbers refer only to the first 6 months of 2010. It is also important to spend time discussing each slide and asking student's questions to help them interpret the data. Suggestions for questions to use also appear in the notes section of the **Powerpoint** presentation.
  - After discussing each slide, tell students you will be revisiting each graph to calculate percentages and fractions and that when class is over, they will be asked to complete an assignment on their own for homework.
- Using a *gradual release model* (see resource section for an explanation of this model) and the **Homicide Tracker Calculation Steps Teacher Guide**, help students to answer the following questions for the graphs in the presentation. You may wish to have students take notes, or you can distribute the **Homicide Tracker Calculation Worksheet** for students to use.
  - For the first slide, *Cause of Death*, demonstrate only. Students should take notes as you work through the steps to solving the problem on the board.
  - For the next slide, *Age of Victims*, work as a class soliciting input from students, being sure students also work through the steps in their own notes.
  - For *Homicide Victims by Race*, complete the process the same way as the last slide, as a whole class with student input towards solving the problem.
  - Tell students that they will solve the next problem, *Homicide Victims by Gender* in a similar way to the last one but that they will working in small groups to do so this time. Allow students time to work while moving around the room offering guidance and making corrections.
  - Discuss the solution and steps for the group work problem together as a class and clarify or correct any misunderstandings.

### Debrief/Assessment:

Show the last slide and tell students that they will be completing this problem independently for homework and distribute the **Homicide Tracker Percentages and Fractions Homework**. Remind them of the

importance for showing all their work. Ask students to summarize what they learned about solving these equations, the steps they must take, and the value of representing data in fractions and percentages.

## **RESOURCES:**

### **What Is Gradual Release?**

The **Gradual Release of Learning Responsibility** is an instruction model in which the responsibility for task completion shifts gradually from the teacher to the student, through guided practice of comprehension lessons

A general format for gradual release:

1. teacher modeling or demonstrating for whole class
2. whole class work with student input
3. small group work with teacher moving around room to help, correct and reinstruct when necessary
4. independent work without assistance

Some teachers choose to explain this process to students using this simple and memorable tool:

**I do. You watch.-----I do. You help.-----You do. I help.-----You do. I watch.**

### **Suggestions for Extension Activities:**

1. Follow with a lesson plan on gun safety using **Don't Become A Statistic**.
2. Obtain copies of the RedEye with Homicide Tracker reports or access the Homicide Tracker website and have students use this information for continued practice.
3. Collaborate with an art teacher and have students find ways (ie: posters) to creatively and visually represent these fractions and percentages as a way to increase awareness of the issue.