

# **Crunching the Numbers on Dating Violence**

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## **CDC's 2007 Science Ambassador Program**

Choose Respect is a national initiative developed by the U.S. Centers for Disease Control and Prevention (CDC) to help school-age children learn how to develop healthy dating relationships. This initiative is based on years of research and has been adopted by a number of middle schools throughout the country. The focus of this lesson is an analysis of data related to teen dating violence. Dating violence can be a sensitive topic that is often difficult to address. Teachers should note that this lesson touches on only a small portion of this issue and does not encompass all aspects of dating violence.

Presentation and discussion of the data in this lesson should be done carefully. Learning more about the numbers behind this problem will open a dialogue with students and create an opportunity to teach key scientific skills. This lesson plan gives middle-school students the opportunity to examine dating violence data, provide them with a chance to challenge preconceived notions, develop analytical skills using the data and then, it is hoped that students are able to gain positive attitudes about forming their own positive dating relationships in the future. Students will need to be familiar with the scientific method and be able to identify the components of line and bar graphs prior to taking part in this lesson.

Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

# Crunching the Numbers on Dating Violence

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## Summary

Choose Respect is a national initiative developed by the U.S. Centers for Disease Control and Prevention (CDC) to help school-age children learn how to develop healthy dating relationships. This initiative is based on years of research and has been adopted by a number of middle schools throughout the country. The focus of this lesson is an analysis of data related to teen dating violence. Dating violence can be a sensitive topic that is often difficult to address. Learning more about the numbers behind this problem will open a dialogue with students and create an opportunity to teach key scientific skills.

This lesson plan gives middle-school students the opportunity to examine dating violence data, provide them with a chance to challenge preconceived notions, develop analytical skills using the data and then, it is hoped that students are able to gain positive attitudes about forming their own positive dating relationships in the future. Students will need to be familiar with the scientific method and be able to identify the components of line and bar graphs prior to taking part in this lesson. This lesson discusses a sensitive topic.

## Learning Outcomes

- Students will be able to examine personal preconceived beliefs about dating violence and revisit these beliefs after having examined pertinent data and information.
- Students will be able to use graphs to increase their understanding of survey data.
- Students will be able to interpret data and draw conclusions from survey results.

## Materials

1. Computers with Internet access
2. Photocopies of the Dating Violence Data Chart handout – one per student
3. Photocopies of the Dating Violence Graph worksheet – one per student
4. Photocopy of the Dating Violence Data Chart Answer Key – one for teacher's reference
5. Photocopy of the Dating Violence Graph worksheet – one for teacher reference

## Total Duration

2 hours, 20 minutes

## Procedures

### Teacher Preparation

Dating violence is a sensitive topic. Teachers should be familiar with the general facts prior to conducting this lesson. CDC's Choose Respect website provides additional background on this topic for both students and parents. Teachers should become familiar with the information (particularly on the Get the Facts portion prior to the lesson). The website also contains materials that could be used to supplement this lesson.

Photocopies of the Dating Violence Data Charts and the Dating Violence Graph worksheet should be made for each student in the class. The teacher should also reserve time in the school's computer lab or media center so students will be able to explore the Choose Respect website in the introduction of this lesson. Students should work individually or in pairs.

### Web Resource

Title: Choose Respect

URL: <http://www.chooserespect.org>

Description: This CDC website provides information on the Choose Respect Initiative.

## Introduction

### Step 1 (Duration: 45 minutes)

#### Identifying Preconceived Notions

The teacher should have students become familiar with the Choose Respect website. The teacher should have students pay particular attention to the following areas of the website: Get the Facts; Get Involved; and Give It. Review the highlights and important aspects of this website. Encourage students to share their impressions of the website and the message being conveyed.

The teacher should have the students answer the following questions:

- Which gender do you think has reported a higher incidence of physical dating violence between females and males?
  - In facilitating the discussion, the teacher should be careful in recognizing that boys may report higher levels, but the context of abuse is not captured in these data, nor are the consequences (e.g., girls are injured more often than boys).
  - Also, physical dating violence is only one form of abuse and does not capture other forms such as verbal, emotional, or sexual abuse.
  - Differences in reported levels may also be due to how boys and girls report their experiences.
  
- Which racial and ethnic groups do you think would report the highest incidence of physical dating violence?
  - In facilitating discussion on this question, the teacher should be careful not to support racial or ethnic stereotypes. It is important for both teachers and students to realize that the data presented on the website and in this lesson are simply data points and do not provide explanations for why certain groups (e.g., African American and Latino youth) have higher rates of physical dating violence.
  - Differences (e.g. social or cultural) among racial groups can have large roles in explaining what we see in the data. Differences may also be due to how various groups report their experiences.
  
- How do you think the four high school grades 9-12 rank lowest to highest?

- How do you think females and males would compare in the four high school grades 9-12 rank lowest to highest?

The teacher should record the students' answers and set them aside to be used in the conclusion of the lesson.

#### Web Resources

Title: Choose Respect

URL: <http://www.chooserrespect.org/>

Description: This CDC website provides information on the Choose Respect initiative.

Title: Get the Facts: Dating Abuse Statistics

URL: <http://www.chooserrespect.org/scripts/teens/statistics.asp#1>

Description: This webpage provides statistics on teen dating violence.

### Step 2 (Duration: 20 minutes)

#### Looking at Data

The teacher will now guide the students to the data contained in the Dating Violence Data Charts handout. The teacher will provide each student with a copy of the handout and lead the class in examining the data in the chart. Students should understand how the total columns are devised and how to read the data from the chart. The teacher should also note that the data provided concerns only physical violence. Other behaviors including emotional and verbal ones are forms of abuse.

Students will use the information on the chart to complete the handout. Answers to the handout can be found in the Dating Violence Data Chart Answer Key handout.

#### Supplemental Document

Title: Dating Violence Data Charts

Description: This handout contains a data chart on the percentage of high school students who were victims of physical dating violence in 2007.

Title: Dating Violence Data Charts Answer Key

Description: This document contains the answers to the Dating Violence Data Chart.

### Step 3 (Duration: 45 minutes)

#### Graphing Data

The teacher will now provide students with the Data Violence Graphing worksheet. The teacher should direct the students to use their Dating Violence Data Chart to complete the five graphing exercises explained in the worksheet.

Students will need to determine and identify the following for each graph

- Dependent variable
- Independent variable
- Appropriate type of graph (line or bar)
- Numbers to be used on each axis

Answers are provided in the Data Violence Graphing Worksheet Answer Key.

#### Supplemental Document

Title: Data Violence Graphing Worksheet

Description: This document contains blank graphs for students to complete using the data found in the Data Violence Data Charts handout.

Title: Data Violence Graphing Worksheet Answer Key

Description: This document contains the answers to the Dating Violence Graphing worksheet.

## **Conclusion (Duration: 30 minutes)**

### **Making your OWN Conclusion**

Once the graphs are completed, the students will go back to their preconceived beliefs for graphs #2, #3, #4, and #5 and compare their earlier beliefs against the actual data they just graphed. *The teacher will have kept this information from the introduction portion of the lesson.*

Students should examine their prior beliefs to see how they compare to data displayed in the graphs pertaining to physical dating violence. Students should also recall data and information presented on the Choose Respect website pertaining to other forms of dating violence.

Students will use the Data Violence Data Charts handout and their completed Dating Violence Graphing worksheet to develop a conclusion statement about the data. Students will then write a paragraph explaining their conclusion and must cite the data from the Dating Violence Data Charts handout and their Dating Violence Graphing worksheet. Students should be able to identify how Choose Respect has either reinforced their thinking about dating, or what ideas might have changed due to their conclusions.

## **Assessment**

Students will be assessed both formally and informally. During the **Step 2** activity (Looking at the Data), students will self-assess their prior beliefs about physical dating violence based on data presented in the Dating Violence Data Charts.

In **Step 3** (Graphing Data), the teacher will use the Dating Violence Graphing worksheet as a formal assessment of the students' graphing knowledge and abilities. The teacher may also elect to use students' final analysis and written conclusion as a formal assessment. This will allow the teacher to determine how a student's beliefs about physical dating violence have changed due to the data graphing activity as compared to their perceived notions.

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## **Modifications**

### **Extension**

The material in this lesson plan can be modified in many ways to suit the specific research and graphing topics the teacher would like to cover. The students will use the grade-level information contained in the Dating Violence Data Charts handout to extrapolate information for grades in a particular grade level. The teacher will tell the class that extrapolation is a key research technique used in working with data. Extrapolation allows researchers to alter their original hypothesis based on perceived data trends.

Students could alter their graphs to represent what they anticipate the data for grades 6-8 would look like if the current trend in data held true.

In addition, students could make predictions about what might happen beyond high school. It may seem obvious that the data would have to plateau at some point, however, students can predict when that might happen and why.

## Education Standards

### National Science Education Standards

#### SCIENCE AS INQUIRY, CONTENT STANDARD A

As a result of activities in grades 5-8, all students should develop

- Abilities necessary to do scientific inquiry
- Understandings about scientific inquiry

#### LIFE SCIENCE, CONTENT STANDARD C

As a result of their activities in grades 5-8, all students should develop understanding of

- Structure and function in living systems
- Reproduction and heredity
- Regulation and behavior
- Populations and ecosystems
- Diversity and adaptations of organisms

## Dating Violence Data Charts

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Percentage of High School Students Who Experienced Dating Violence or Being Hit, Slapped, or Physically Hurt on Purpose by Their Boyfriend or Girlfriend  
Youth Risk Behavior Survey, 2007<sup>1</sup>

Race/Ethnicity	Female	Male
White	7.4	9.3
Black	13.2	15.2
Hispanic	10.1	12.0
Average		

*Use the data in the chart above to calculate the average percent of dating violence reported for each gender.*

Grade	Female	Male
9	6.3	10.5
10	8.8	9.1
11	10.2	10.8
12	10.1	14.1
Total	8.8	11.0

## Dating Violence Data Charts Answer Key

Crunching the Numbers on Dating Violence  
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Table 10: Percentage of High School Students Who Experienced Dating Violence or Being Hit, Slapped, or Physically Hurt on Purpose by Their Boyfriend or Girlfriend  
Youth Risk Behavior Survey, 2007<sup>1</sup>

Race/Ethnicity	Female	Male
White	8.5	8.0
Black	12.0	11.8
Hispanic	9.0	10.9
Average	$29.5/3 = 9.8$	$30.7/3 = 10.23$

*Use the data in the chart above to calculate the average percent of dating violence reported for each gender.*

Grade	Female	Male
9	6.3	10.5
10	8.8	9.1
11	10.2	10.8
12	10.1	14.1
Total	8.8	11.0

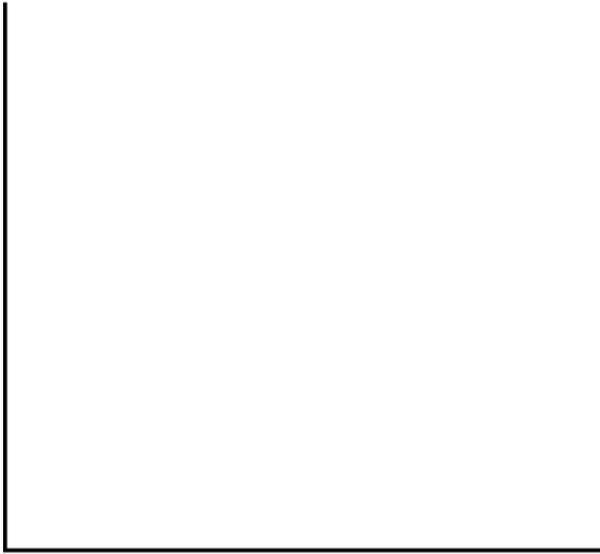
### Reference

Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance - United States, 2005. Surveillance Summaries, June 6, 2008. MMWR 2008; 57(No. SS-#04). Available from URL: <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5704a1.htm>

## Dating Violence Graphing Worksheet

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### Graph 1:



Using the graph above, construct a graph representing the percentage of dating violence by race/ethnicity that compares females and males.

### Graph 2:



Using the graph to the left, construct a graph representing the percentage totals of dating violence by race/ethnicity.

## Dating Violence Graphing Worksheet — Page 2

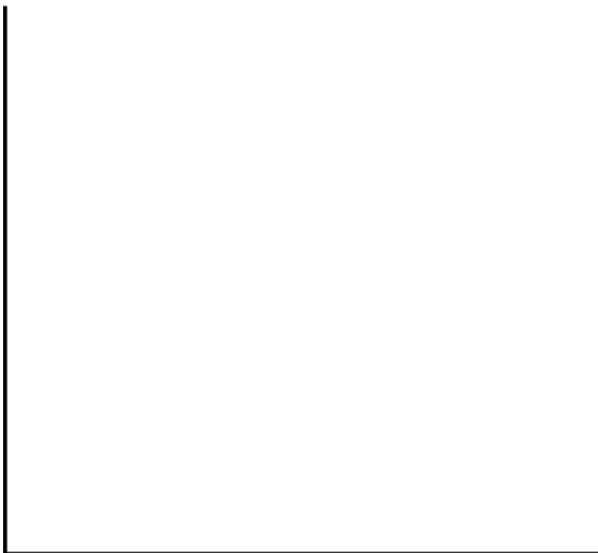
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### Graph 3:



Using the graph above, construct a graph representing the percentage totals of dating violence that compares females and males.

### Graph 4:

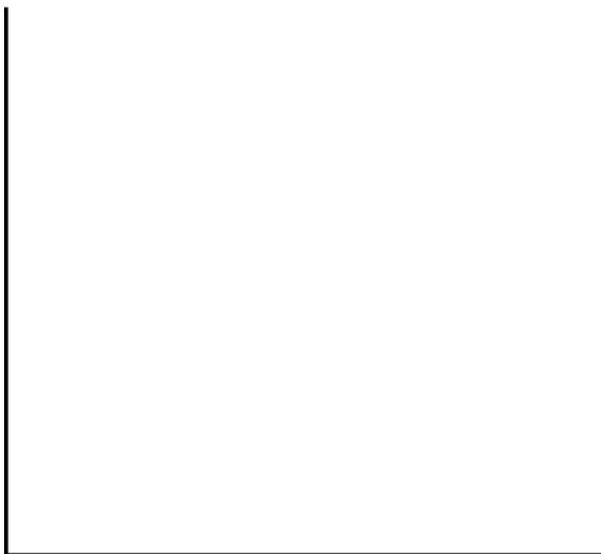


Using the graph above, construct a graph representing the percentage of dating violence by grades 9-12 that compares females and males.

## Dating Violence Graphing Worksheet — Page 3

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### Graph 5:

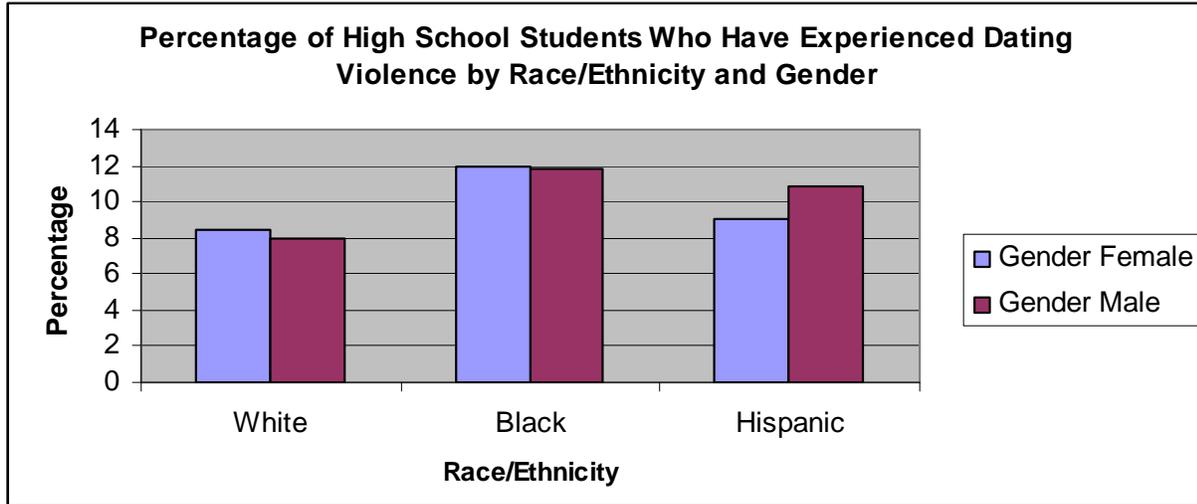


Using the graph above, construct a graph representing the percentage totals of dating violence by grades 9-12.

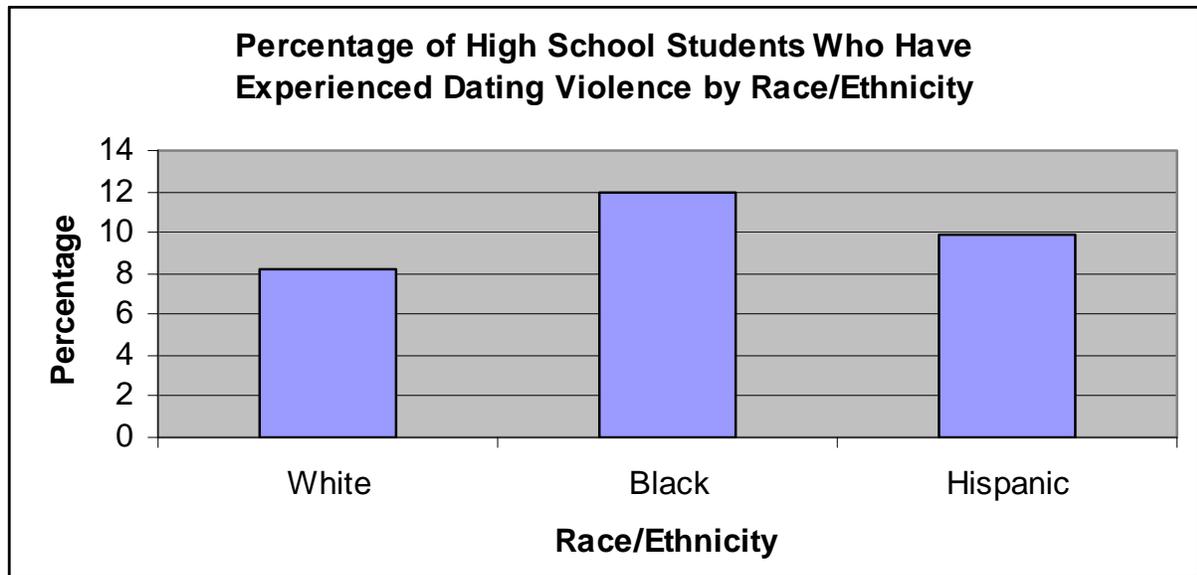
## Dating Violence Graphing Worksheet Answer Key

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Graph One:



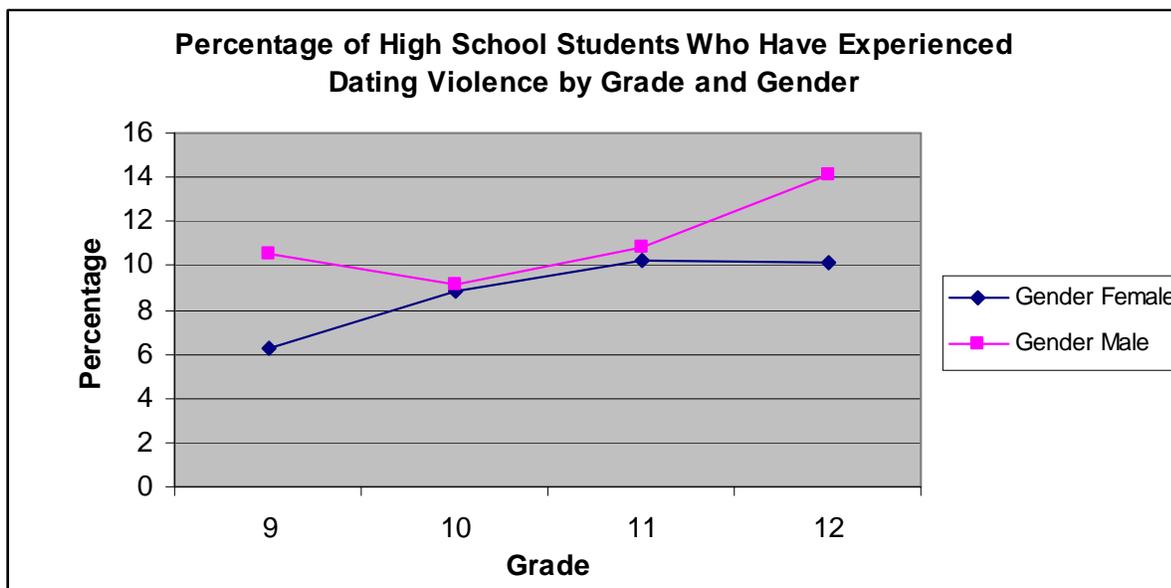
Graph Two:



Graph Three



Graph Four



Graph Five

