

Aim:

Why did the organizers of the 1963 March on Washington demand jobs as well as freedom for African-Americans?

Instructional Objectives:

Students will be able to:

1. define and explain trend, scatter plot, lines of best fit and outliers;
2. organize data on a scatter plot to analyze trends and make appropriate generalizations;
3. make inferences and generalizations by comparing scatter plots, lines of best fit and equations from those lines;
4. organize data from the Bureau of Labor Statistics on unemployment rates in the United States, using scatter plots and lines of best fit;
5. using data from the Bureau of Labor Statistics on unemployment rates in the United States, make appropriate generalizations about African-American unemployment, from the end of World War II to the 1963 March in Washington;
6. using data from the Bureau of Labor Statistics on unemployment rates in the United States, compare and contrast the rate of African-American unemployment to the overall rate of unemployment, from 1998 to 2013;
7. using generalizations drawn from data on unemployment rates in the United States, explain why the organizers of the 1963 March on Washington demanded both jobs and freedom for African-Americans.

Grade Level: Secondary, especially Grade 8

Common Core Standards

Math: Statistics and Probability

[CCSS.Math.Content.8.SP.A.1](#) Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

[CCSS.Math.Content.8.SP.A.2](#) Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

[CCSS.Math.Content.8.SP.A.3](#) Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.

Overarching Understanding:

African-Americans have historically faced much greater rates of unemployment and economic deprivation than the American population as a whole. In order to be able to truly and fully exercise the freedom that A. Philip Randolph, Bayard Rustin, Martin Luther King and other March organizers sought for African-Americans, they must also have economic justice. The organization and plotting of statistical unemployment data can help us understand why the 1963 March on Washington organizers focused on jobs as a key demand.

Length:

This lesson will cover four 45 minutes periods; part one covers two periods and part two covers two periods.

Resource Materials:

Unemployment rates in America from 1946 – 1963: stats.bls.gov/cps/cpsaat01.pdf

Unemployment rates in America from 1998-2013: stats.bls.gov/cps/cpsaat01.pdf

Unemployment rates in America for African-Americans from 1998-2013: Table Provided at end of lesson.

Economic Policy Institute's "Unfinished March" web site, which illustrates the economic disparities between African-Americans and white Americans: www.unfinishedmarch.com/

About the Lesson:

Lesson is part of an Integrated Statistics Unit.

PART ONE

Opening Question:

If you were to make a prediction, who do you think would have a better chance of getting jobs out of college: your grandparents or you?

(Ideally, students will have different responses, ranging from "I do, because they faced more discrimination" to "They would, because they have been working all of their lives, but the economy is pretty bad for us today.")

Lesson Development:

Start with a conversation about data, and why looking at numbers isn't enough. Remind the students that they already have different ways of representing data, and after the previous unit (linear relationships, creating equations), they're now ready for another way of looking at data.

Discuss the idea of a scatter plot. Demonstrate the first scatter plot by looking at a (simple) sample set of data and plotting the points on the graph, labeling both the x and the y axes with their variables. Ask students about appropriate scales and quadrant to use to display the given data.

Once the data has been created, see whether there is a trend line that would best exemplify the sample data's trajectory, or call it a "line of best fit." Ask why a line of best fit is helpful.

Have students reconsider what they've usually done with points on a coordinate grid and what they're doing with this scatter plot.

Independent Practice:

Give students a few tables with different data and ask them to create scatter plots with random data and infer what it means for variables to have a positive, negative, or non-linear correlation. Ask them to explain what their line of best fit says about the variables involved, and if it makes sense.

For instance, have them research and or provide data for the average temperatures in your city or town from January to August. Once they've done so, have them create a line of best fit, and have them explain why it makes sense that there is a positive relationship between the months provided and the average temperature (i.e., as the months pass, the temperature goes higher).

If you want to focus on the theme of the lesson plan here, you can have students use economic data from the Economic Policy Institute's website *The Unfinished March*, www.unfinishedmarch.com.

Closing/Summary:

Give a few examples of where two variables are not correlated either negatively or positively, and how they know. Establish the term "outliers" here.

Why would you use a scatter plot instead of a bar graph or a pie graph for the type of data we have examined today?

PART TWO

Opening Question:

How do scatter plots help us predict future events?

(Example answers should include (but not limited to):

- They help us see trends and patterns.
- Scatter plots make it easier for us to organize our data.
- We can make a line of best fit that can help us see what the next step is if the pattern continues.)

Lesson Development:

Start with a conversation about data, and the importance of looking at data. Remind them (once again) that they already have different ways of representing ways of representing data, and with the previous unit (linear relationships, creating equations), they're now ready for another way of looking at data.

Give students a synopsis /scenario regarding Bayard Rustin and A. Phillip Randolph, organizers for the 1963 March on Washington for Jobs and Freedom. Ask them to consider the scenario facing the organizers of the march.

What economic factors would lead them to want to march to Washington DC?

For students, factors might include extreme local and national poverty, lack of job creation, lack of opportunity for small businesses in neighborhoods and discrimination in the workplace.

Independent Practice:

Prompt students to use math to make solid arguments about the conditions in which the organizers of the march worked. Have students research data sources supplied with this lesson for the specified time periods, to see if they can find any correlations between the years, the unemployment rate in general and the unemployment rate among African-Americans.

Closing:

Would current economic conditions merit a March on Washington? Why or why not?

How are graphs used to inform or misinform people about unemployment in the United States of America?

Homework:

Using data from the Bureau of Labor Statistics (<http://stats.bls.gov/cps/cpsaat01.pdf>), have students project what the next five years of unemployment might look like.

UNEMPLOYMENT RATE, BY RACE, 1963–2012									
Year	All	White	Black	Ratio of black to white unemployment rate	Year	All	White	Black	Ratio of black to white unemployment rate
1963	5.7%	5.0%	10.9%	2.2	1988	5.5%	4.4%	11.8%	2.7
1964	5.2%	4.6%	9.8%	2.1	1989	5.3%	4.2%	11.4%	2.7
1965	4.5%	4.0%	8.3%	2.1	1990	5.6%	4.5%	11.5%	2.6
1966	3.8%	3.3%	7.7%	2.3	1991	6.8%	5.7%	12.6%	2.2
1967	3.8%	3.4%	7.4%	2.2	1992	7.5%	6.1%	14.2%	2.3
1968	3.6%	3.2%	6.7%	2.1	1993	6.9%	5.5%	13.0%	2.3
1969	3.5%	3.1%	6.4%	2.1	1994	6.1%	4.8%	11.5%	2.4
1970	4.9%	4.5%	8.2%	1.8	1995	5.6%	4.5%	10.5%	2.4
1971	5.9%	5.4%	9.9%	1.8	1996	5.4%	4.2%	10.6%	2.5
1972	5.6%	5.1%	10.4%	2.0	1997	4.9%	3.8%	10.1%	2.7
1973	4.9%	4.3%	9.4%	2.2	1998	4.5%	3.4%	9.0%	2.6
1974	5.6%	5.0%	10.5%	2.1	1999	4.2%	3.3%	8.0%	2.4
1975	8.5%	7.8%	14.8%	1.9	2000	4.0%	3.1%	7.6%	2.4
1976	7.7%	7.0%	14.0%	2.0	2001	4.7%	3.8%	8.6%	2.3
1977	7.1%	6.2%	14.0%	2.3	2002	5.8%	4.7%	10.2%	2.2
1978	6.1%	5.2%	12.8%	2.5	2003	6.0%	4.8%	10.8%	2.2
1979	5.8%	4.9%	12.3%	2.5	2004	5.5%	4.5%	10.4%	2.3
1980	7.1%	6.2%	14.6%	2.4	2005	5.1%	4.1%	10.1%	2.4
1981	7.6%	6.5%	15.9%	2.5	2006	4.6%	3.8%	9.0%	2.3
1982	9.7%	8.3%	19.1%	2.3	2007	4.6%	3.9%	8.3%	2.2
1983	9.6%	8.0%	19.7%	2.4	2008	5.8%	4.7%	10.1%	2.1
1984	7.5%	6.2%	16.1%	2.6	2009	9.3%	7.8%	14.7%	1.9
1985	7.2%	5.8%	15.2%	2.6	2010	9.6%	8.0%	15.9%	2.0
1986	7.0%	5.7%	14.5%	2.6	2011	8.9%	7.2%	15.9%	2.2
1987	6.2%	5.0%	13.0%	2.6	2012	8.1%	6.6%	13.9%	2.1
Note: White and black data before 1979 include Hispanics.									

Source: Data from 1963 to 1966 come from the Statistical Abstract of the United States (U.S. Census Bureau 1968); “black” is “nonwhite” data. Data from 1967 to 1971 come from the Statistical Abstract of the United States (U.S. Census Bureau 1973); “black” is “Negro and other” data. Data from 1972 to 1978 come from the Bureau of Labor Statistics Current Population Survey public data series. Data after 1978 are based on the author's analysis of basic monthly Current Population Survey microdata.

Table Provided Courtesy of Algernon Austin and the Economic Policy Institute (www.epi.org). It was originally compiled by Austin for the Institute’s “Unfinished March” publication he wrote (<http://www.epi.org/files/2013/EPI-The-Unfinished-March-An-Overview.pdf>).

Unemployment rates for “White” and “Nonwhite” Americans, 1949-63		
Year	Nonwhite Unemployment Rate	White Unemployment Rate
1963	10.8	5
1962	10.9	4.9
1961	12.4	6
1960	10.2	4.9
1959	10.7	4.8
1958	12.6	6.1
1957	7.9	3.9
1956	8.3	3.6
1955	8.7	3.9
1954	9.9	5
1953	4.5	2.7
1952	5.4	2.8
1951	5.3	3.1
1950	9	4.9
1949	8.9	5.6

Source: United States. Bureau of the Census. 1967. “Social and Economic Conditions of Negroes in the United States” (See https://play.google.com/store/books/details?id=T_TFx_4ZCKkC&rdid=book-T_TFx_4ZCKkC&rdot=1)