

Single-Parent Households and Population Below the Poverty Level by U.S. County



GeoFRED®
APPLICATION EXERCISE

Lesson Author

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Standards and Benchmarks (see page 7)

Description

Students will search for data on single-parent households and population below the poverty level, mapping them and underscoring the opportunity costs of single parenting.

Students search for data and visualize them in GeoFRED®, the Federal Reserve Bank of St. Louis's online mapping tool. The goals are for students to (1) observe patterns in economic data and note differences across geographical areas, and (2) hypothesize the reasons for those patterns and differences.

The intended outcome of the activity is for students to use mapped data to identify the relationship between single parenting and income and provide potential explanations for this relationship.

Economic Concepts

Opportunity cost

Income

Objectives

Students will be able to

- define opportunity cost and income;
- observe patterns in economic data;
- note differences in economic data across geographical areas;
- hypothesize reasons for patterns in data and differences in data across geographical areas;
- identify the direct relationship between the frequency of single-parent households and the percentage of the population below the poverty level across U.S. counties; and
- evaluate potential reasons for the observed direct relationship between the frequency of single-parent households and the percentage of the population below the poverty level.

Grade Level

High School, College

Compelling Question

How does single parenthood impact poverty?

Time Required

30-40 minutes

Materials

- Visual 1, one copy for the teacher's reference
 - Handout 1, one copy for each student
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Preparation

- Make sure you are comfortable navigating around GeoFRED®, finding values for data series used in this lesson, and editing a map. A demonstration is located at <https://geofred.stlouisfed.org/tutorials/>.
 - Go to <https://www.econlowdown.org/resource-gallery/would-increasing-the-minimum-wage-reduce-poverty> to learn about the connection between minimum wage and poverty.
 - Go to <https://www.pewsocialtrends.org/2015/12/17/1-the-american-family-today/> to learn about family structures in the U.S.
 - Go to <https://fredblog.stlouisfed.org/2018/06/the-pitfalls-of-mapping-poverty/> to learn about the difficulty in measuring poverty across the country.
 - Follow the instructions in Handout 1 to use GeoFRED® to create the maps. URLs to final versions of the maps are provided.
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Procedure

1. Tell the students they are going to create two maps of the U.S.—one showing the proportion of single-parent households and one showing the percentage of the population below the poverty level.
 2. Explain that when we choose to do something over doing something else, the value of what we give up is called the **opportunity cost** of our choice. Because parenting and working outside the home compete for time during the week, single parenting has large opportunity costs. It is difficult for single parents to work long hours, advance professionally, or pursue an education.
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3. Explain that without a formal education or work experience to build skills, the jobs available to workers do not pay very much. **Income** is the payment people earn for the work they do. When income is so low that there is not enough money to pay for basic needs like food and shelter, people experience poverty.
4. Explain that you could simply admonish students to “avoid becoming a single parent.” Instead, you want them to look at some data about single parents and income, draw conclusions about the relationship, and perhaps develop their own cautionary note.
5. Divide the class into small groups of three or four for the remainder of the lesson. Groups with diverse skill sets are preferred. If short on time, randomly assign students to groups. Distribute a copy of *Handout 1: Group Instructions* to each student. Allow time for students to work.
6. Invite students from different groups to share their answers. Discuss the following:
 - On the first map, the dark green color indicates counties where more than 50 percent of households with children are single-parent households.
 - On the second map, the darker green colors indicate counties with a larger proportion of the population living below the poverty level. Don’t overlook Alaska!
 - Single parenting makes poverty more likely not because solo parents are unemployed and therefore not earning an income, but because single parenting limits the amount of time available to pursue a career or complete an education.
 - Frequently, single parents have low levels of educational attainment to begin with, and pursuing one’s education while raising and educating your own child is difficult. This makes for a poverty trap.
 - Educational attainment is positively linked to average income; that is, the more education you have the higher your average income is likely to be.
 - Educational attainment is also linked to the likelihood of being unemployed. In this case, the more education you have, the less likely you are to be unemployed. That relationship is not illustrated in this application exercise.
7. Ask a student from each group to identify and discuss the most important determining factor and then identify and discuss the least important determining factor. As the students discuss their choices, explain the following:
 - “Unemployed people are more likely to become single parents”: There is no evidence of such a relationship in the data presented in the maps.
 - “People with less education are more likely to become single parents”: There is no evidence of such a relationship in the data presented in the maps.
 - “Being a single parent makes it more difficult to attain higher education”: A college degree requires several years of intense study, and raising a child as a single parent does not leave much time to pursue such an education.

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- “Being a single parent makes it more difficult to hold a job”: Raising a child as a single parent makes keeping to the schedule of a steady job harder than does raising a child between two parents.

Closure

8. Conclude the exercise by asking the following questions:
 - What is opportunity cost? (*The value of what we give up when we choose to do something over doing something else.*)
 - What is income? (*The payment people earn for the work they do.*)
 - What differences or similarities do you see between single-parent households and poverty levels across geographical areas in the U.S.? (*The proportion of single-parent households and the percentage of people living below the poverty level tend to be concentrated in the same areas.*)
 - Why do you think these patterns exist? (*It is more difficult for single parents to work or to complete an education than it is for two-parent households to do the same.*)
 - What relationship do you see between these two variables? (*Both are high or low in value in the same areas.*)
 - Is this a direct or an inverse relationship? (*This is a direct relationship.*)
 - Why does this relationship exist? (*Raising children competes with time between working outside of the home and completing an education. Without skill-building, it is very difficult to escape poverty.*)

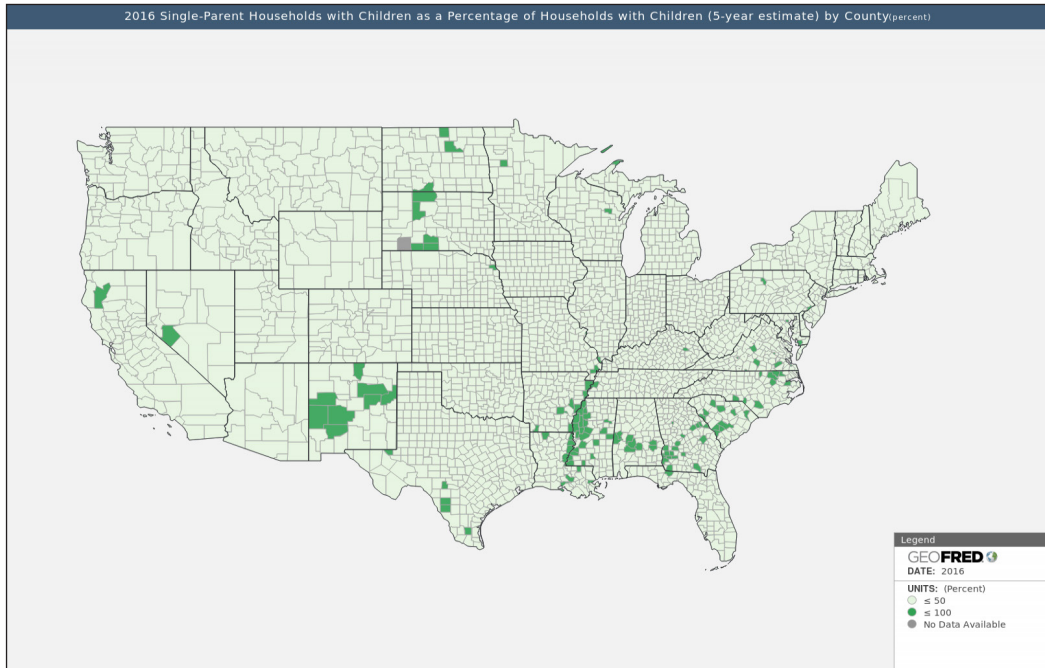
Assessment

9. The following essay prompt could be used as a follow-up to the exercise:
 - Single parenting and living below the poverty level are correlated. What economic argument(s) can explain this relationship? Explain your argument(s) carefully and use an example.

A sample answer could describe how people with few skills are more likely to hold low-paying jobs and be poor. Because single parenting makes it more difficult to pursue education, training, skill development, and careers, single parents are likely to live in poverty. An example illustrating the relationship between single parenting and income could be that raising a child alone makes it more difficult to attend classes and complete a formal education; jobs available to persons without a high school diploma or a college degree include servers and telemarketers, which do not pay very much.

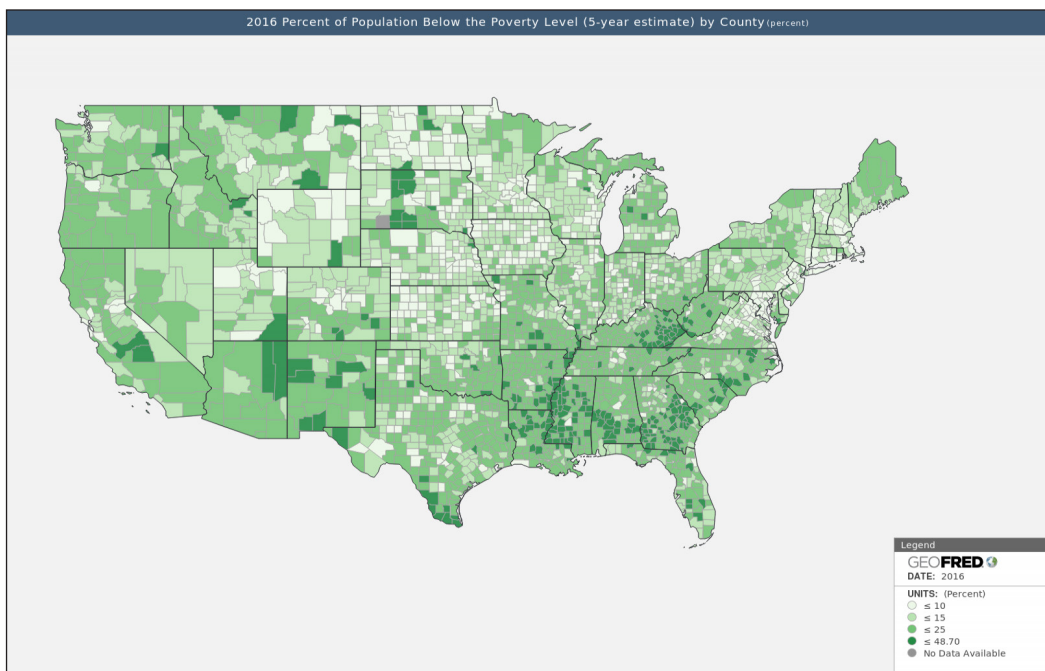
Visual 1: GeoFRED® Maps

Figure 1: 2016 Single-parent Households with Children as a Percentage of Households with Children by County (5-year estimate)



SOURCE: GeoFRED®, Federal Reserve Bank of St. Louis; <http://geof.red/m/hpy>.

Figure 2: 2016 Percent of Population Below the Poverty Level by County (5-year estimate)



SOURCE: GeoFRED®, Federal Reserve Bank of St. Louis; <http://geof.red/m/hpz>.

Handout 1: Group Instructions

1. On the GeoFRED® website, <https://geofred.stlouisfed.org/>, create a map by following the instructions below.
 - Click on “Build New Map.”
 - Click on “Tools.”
 - Click on “Choose Data” and select “Region Type: County.”
 - Select “Data: Single-parent Households with Children as a Percentage of Households with Children (5-year estimate).”
 - Select “Year: 2016.”
 - Click on “Edit Legend” and select “Number of Color Classes: 2.”
 - Enter “50” in the top value box and “100” in the bottom value box.
 - Click on “Choose Colors” and select “Single Hue: greens.”
2. Open a new browser tab, go to the GeoFRED® website, and create a second map by following the instructions below.
 - Click on “Build New Map.”
 - Click on “Tools.”
 - Click on “Choose Data” and select “Region Type: County.”
 - Select “Data: Percent of Population Below the Poverty Level (5-year estimate).”
 - Select “Year: 2016.”
 - Click on “Edit Legend” and select “Number of Color Classes: 4.”
 - Enter “10” in the top value box, “15” in the second value box from the top, “25” in the third value box from the top, and “49” in the bottom value box.
 - Click on “Choose Colors” and select “Single Hue: greens.”
3. Examine the maps and hypothesize the reasons for the observed relationship between the frequency of single-parent households and the percentage of the population below the poverty level. Rank the following in order from the factors most likely to influence the observed relationship to the factors least likely to influence the observed relationship.
 - A. Unemployed people are more likely to become single parents.
 - B. People with less education are more likely to become single parents.
 - C. Being a single parent makes it more difficult to attain higher education.
 - D. Being a single parent makes it more difficult to hold a job.

NOTE: Work in two phases: First, identify and discuss the most important factor; second, identify and discuss the least important factor.

Standards and Benchmarks

Voluntary National Content Standards in Economics

Standard 13: Income

- **Benchmarks: Grade 8**

5. Peoples' incomes, in part, reflect choices they have made about education, training, skill development, and careers. People with few skills are more likely to be poor.

- **Benchmarks: Grade 12**

3. The hope of achieving wealth can affect productivity by energizing people to work harder, while the hopelessness of escaping poverty can discourage people from trying.