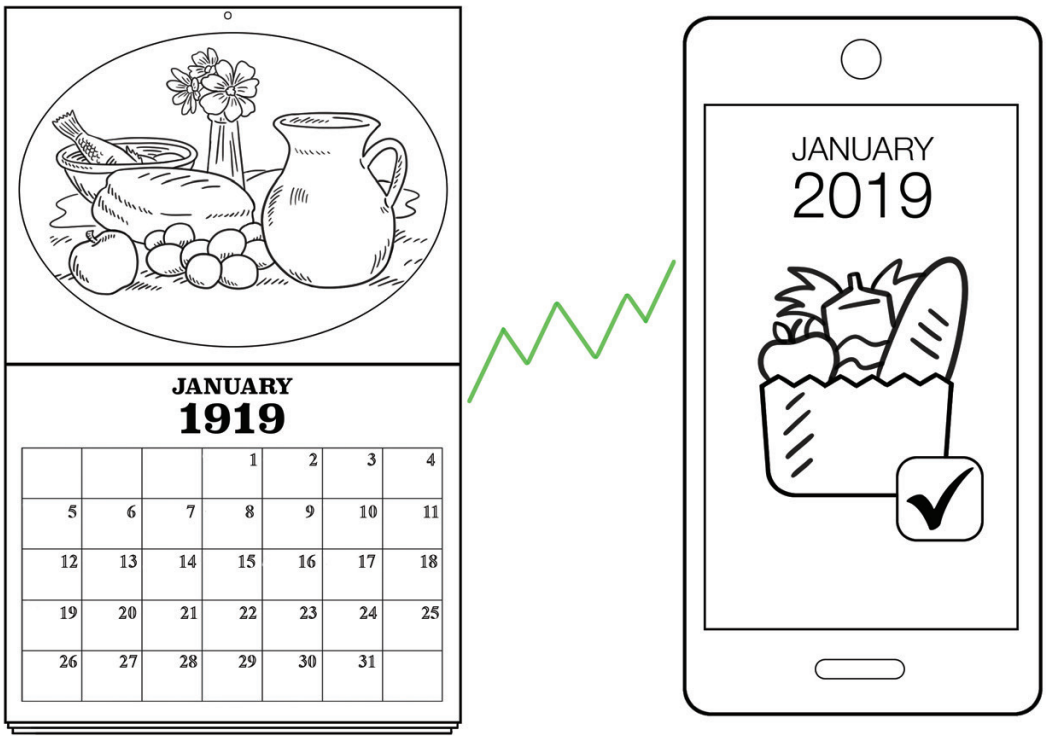
How Does the Cost of Living Change Over 100 Years?

A middle school lesson plan companion to **Economist Spotlight: Dr. Sadie T. M. Alexander**



Focus Question

- How does the cost of living from the early part of the Great Migration compare to the cost of living 100 years later?

Lesson Objective/Teaching Point

- Students will be able to compare the average costs of living from the early Great Migration period to today and determine how they have changed over time.

New York State Education Department Civic Participation Practices

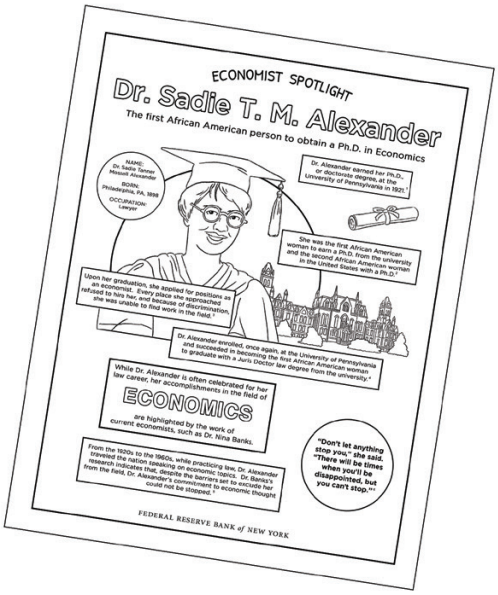
- Demonstrate respect for the rights of others in discussions and classroom debates; respectfully disagree with other viewpoints.
- Use techniques and strategies to be an active and engaged member of class discussions of fellow classmates' views and statements.
- Participate in activities that focus on a classroom, school, community, state, or national issue or problem.

Recommended Time: 90 minutes (or two full class periods)

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Resources/Materials*

- Handout 1: Cost of Living in 1919
- Handout 2: Cost of Living 100 Years Later
- Handout 3: Cost of Living Letter Template: 100 Years Later



- Economist Spotlight Series: Dr. Sadie T.M. Alexander
  https://www.newyorkfed.org/medialibrary/media/outreach-and-education/econEd/spotlight/frbny-econspot-alexander-20210224.pdf
- Living Wage Calculator from the Massachusetts Institute of Technology
  https://livingwage.mit.edu/counties/42101
- US Department of Health and Human Services data on poverty guidelines
  https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines
- US Census Bureau facts for Philadelphia
  https://www.census.gov/quickfacts/fact/table/philadelphiacountypennsylvania/AFN120217
- Cost of Living in Philadelphia, PA | PayScale
  https://www.payscale.com/cost-of-living-calculator/Pennsylvania-Philadelphia
- Economic Policy Institute | Family Budget Calculator (epi.org)
  https://www.epi.org/resources/budget/?gclid=EAIaIQobChMIhPHV64nn-AIViuGzCh09IAPXEAMYASAAEgIS-_D_BwE
- Economic Policy Institute | Family Budget Map Fact Sheet (epi.org)
  https://www.epi.org/resources/budget/budget-factsheets/#/2322
- The Economic Policy Institute's Family Budget Calculator: Technical Documentation | Economic Policy Institute (epi.org)
  https://www.epi.org/publication/family-budget-calculator-documentation/
- Consumer Expenditures for the Philadelphia Metropolitan Area: 2019-20 : Mid–Atlantic Information Office : U.S. Bureau of Labor Statistics (bls.gov)
  https://www.bls.gov/regions/mid-atlantic/news-release/2021/consumerexpenditures_philadelphia_20211015.htm

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Introduce the Lesson/Motivate Students

As a warm-up, ask students if they could move to any major city, where it would be and why. Ask them to share with the class.

Tell students that there was a period called the Great Migration (1910 - 1970) during which Black families moved from the southern United States to cities in the northern United States.[1] Explain to students that between 1916 to 1917,[2] there was an acceleration of Black families that moved, and that many of these families moved for economic opportunities and to get away from unfavorable conditions during that time.[3]

Tell students that one particular economist, Dr. Sadie TM Alexander, studied the migration of these Black families and analyzed their budgets to determine whether they were able to afford a fair standard of living in Philadelphia, Pennsylvania.

Define "cost of living" for students. Dictionary.com defines cost of living as the average cost of food, clothing, and other necessary or usual goods and services paid by a person, family, etc.

Explain to students that they will observe some data about costs of living and average incomes of the Black families that Dr. Alexander studied. Enthusiastically tell students that they will think like an economist, specifically, like Dr. Sadie Alexander by comparing the living costs and average income between 1919 to 2019, across a 100-year span. Tell students that they will ask questions, gather data to analyze, and at the end, answer their own questions.

Note: This lesson plan is complementary to the Economist Spotlight Series: Dr. Sadie T.M. Alexander[4]. Feel free to either use the Economist Spotlight as a precursor to the lesson plan or as an extended activity after the lesson plan.

Model/Teach

Present students with Handout 1 which contains a table and questions. Explain that this table shows the average income of the families that Dr. Alexander interviewed in 1919 and their average spending on key categories such as food, housing, transportation, and healthcare in a year.

Have students analyze the chart and answer the questions.

1. What is the highest spending category (food, housing, transportation, or healthcare) in the table?

2. What is the lowest spending category (food, housing, transportation, or healthcare) in the table?

3. How much money is left over after it is spent on food, housing, transportation, and healthcare?

4. What would you do with that leftover money?

5. Can you think of any other necessities that are not listed in the table?

Tell students that they will see how the prices from 1919 compare to 2019 prices. Direct students to work with a partner to use the U.S. Bureau of Labor Statistics (BLS) CPI Inflation Calculator[5] to fill in the table on Handout 2. Instruct students to put in the costs of each category from Table 1 (Average Income 1919, Food, Housing, Transportation, Healthcare, and Total Spent) into the CPI inflation calculator, and to put the updated 2019 prices from the CPI inflation calculator into Table 2.

NOTE: To simplify this activity, instruct students to set the CPI Inflation Calculator to the following months and years: *January 1919* and *January 2019.*

[1] The Great Migration, 1910 to 1970 (census.gov) - https://www.census.gov/dataviz/visualizations/020/
[2] The Federal Reserve Bank of St. Louis has additional teaching resources about the acceleration of the Great Migration: The Acceleration of the Great Migration Activity | Education | St. Louis Fed (stlouisfed.org) - https://www.stlouisfed.org/education/acceleration-of-great-migration
[3] Additional information can be found in "The Standard of Living among One Hundred Negro Migrant Families in Philadelphia" on JSTOR - https://www.jstor.org/stable/1015062?seq=1
[4] Economist Spotlight: Dr. Sadie T. M. Alexander - https://www.newyorkfed.org/medialibrary/media/outreach-and-education/econEd/spotlight/frbny-econ-spot-alexander-20210224.pdf
[5] CPI Inflation Calculator - https://www.bls.gov/data/inflation_calculator.htm

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Model/Teach (cont'd)

Ask students why they think the 2019 prices are different from the prices in 1919. Allow them to share their thoughts. After students share their ideas, explain that there is a difference in prices over time due to inflation. Explain that inflation means that there is an increase in the overall prices of goods and services in the economy, not just the price of one or two things. **Inflation is measured as a rate of change and here we are comparing how both income and prices changed during this time period.**

Now, tell students that they will analyze a chart from the Economic Policy Institute's Family Budget Map Fact Sheet[6] which measures the income a family needs to attain a modest yet adequate standard of living. Students will also compare the EPI chart to Table 2. Ask students to work with a partner to answer the questions associated with the EPI chart and Table 2:

1. Which costs in the EPI chart are not listed in Table 2?

2. Using Table 2 and the EPI chart, fill in Table 3 and find the cost differences by subtracting 1919 cost categories from the EPI chart categories. (The first column has already been done for you.)

3. Which category has the greatest difference? Which category has the smallest difference? Now, rank the categories with the smallest difference to the greatest difference in terms of cost.

4. Why do you think there are cost differences in 1919 and 2019? What could be some of the reasons for the increase in housing, healthcare, and transportation?

Go over the answers with the class. Guide students to think about the various cost differences. Allow them to share their curiosity about their findings. Then, inform students that they will use what they discovered from their tables to answer a big question regarding the cost of living.

Extended Activity: If time permitting, tell students that they will write a letter to either their relative, friend, or mayor, about the conclusions they've reached from the various cost differences in these categories. A letter template be found on Handout 3 for students.
After students have been given the opportunity to analyze the cost differences between 1919 and 2019, tell students that they will be placed in groups to answer this big question: **"Would families from 1919 be able to meet the standard of living 100 years later?"** [7]

NOTE: Explain to students that there are other factors, in addition to inflation, that contribute to the difference in cost of living as shown on the EPI chart. These factors could include supply and demand (especially with housing), advances in technology, and changes in what people want to buy (consumer preference). For example, there has been substantial increase in costs of prescription drugs (healthcare)[8] which have risen faster than incomes over the last several decades.[9] Transportation today is also vastly different from what it was in 1919. Modern transportation might include owning and using motor vehicles which would contribute to a higher cost of transportation today compared to one hundred years ago.

Inform students that in order to answer this big question, they will first have to think of small questions, and that as a group, they will write at least three small questions that would help answer the big question. Guide students to think about what data and information they will need to gather. Ask them, what information would they need to know to answer the big question?

Some examples of small questions can include: *How much of income is spent on housing? What is the average cost of a house in Philadelphia? How many people own their own cars in Philadelphia? What is the average income in Philadelphia? What other necessities might we need today that we did not need in 1919? (Internet, college funding, phones, technology.)*

[6] Economic Policy Institute's Family Budget Map Fact Sheet - https://www.epi.org/resources/budget/?gclid=EAIaIQobChMIhPHV64nn-AIViuGzCh09lAPX-EAMYASAAEgIS-_D_BwE
[7] Students should reach the conclusion that families from 1919 would not be able to meet the standard of living 100 years later due to the increase in costs.
[8] Medicine Markup | Richmond Fed - https://www.richmondfed.org/publications/research/econ_focus/2017/q4/cover_story
[9] Historical | CMS - https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/National-HealthAccountsHistorical

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Students will then research the answers to one or more of the small questions that they formulated, and ultimately, answer their big question.

Tell students that they can use resources such as the Living Wage Calculator from the Massachusetts Institute of Technology[10], US Department of Health and Human Services data on poverty guidelines[11], and the US Census Bureau facts for Philadelphia[12] to help find their answers to their small questions. Have students think about what they would want to find out from the data.

Remind students that as they study the data, they can use it and other information to come up with more or different types of small questions, to help answer the big question.

Gallery walk: After each group has come up with their three small questions, instruct them write it on either a poster board or chart paper, and stick their questions on the classroom wall for a gallery walk. If possible, provide students with three stickers (or post-its) for them to vote on their top three small questions from the gallery walk. Instruct students to select their top three small questions which they think will best help answer the big question. Instruct each group to share the small questions that they've chosen as their top three and allow students to discuss how those small questions help answer the big question.

As an assessment, have students show their conclusions about the big question via a slide presentation or poster and present in class.

Wrap-up

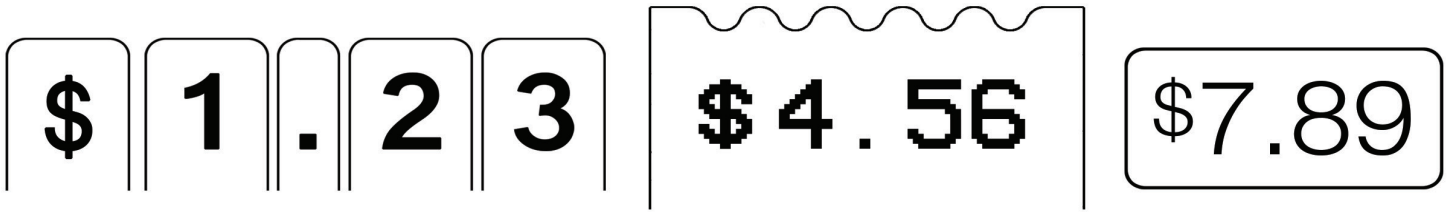
As a follow-up, ask students to think like an economist and do a Socratic seminar asking the following questions:

1. How do economic decisions affect the well-being of individuals, families, and society?

2. What factors affect prices over time?

3. What might be different approaches or solutions to economic issues that you think families might face today?

4. Should there be more government policies to help families meet a standard of living? Why or why not?



[10] Living Wage Calculator | MIT - https://livingwage.mit.edu/counties/42101
[11] HHS Poverty Guidelines - https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/prior-hhs-poverty-guidelines-federal-register-references/2019-poverty-guidelines
[12] U.S. Census Bureau - Philadelphia County, PA - https://www.census.gov/quickfacts/fact/table/philadelphiacountypennsylvania/AFN120217

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Table 1: Average Income and Spending Costs in 1919					
Average Income 1919	Food	Housing	Transportation	Healthcare	**Total Spent**
$1,819.30	$637.51	$200.15	$37.41	$29.02	**$940.09**

1. What is the highest spending category (food, housing, transportation, or healthcare) in the table?

2. What is the lowest spending category (food, housing, transportation, or healthcare) in the table?

3. How much money is left over after it is spent on food, housing, transportation, and healthcare?

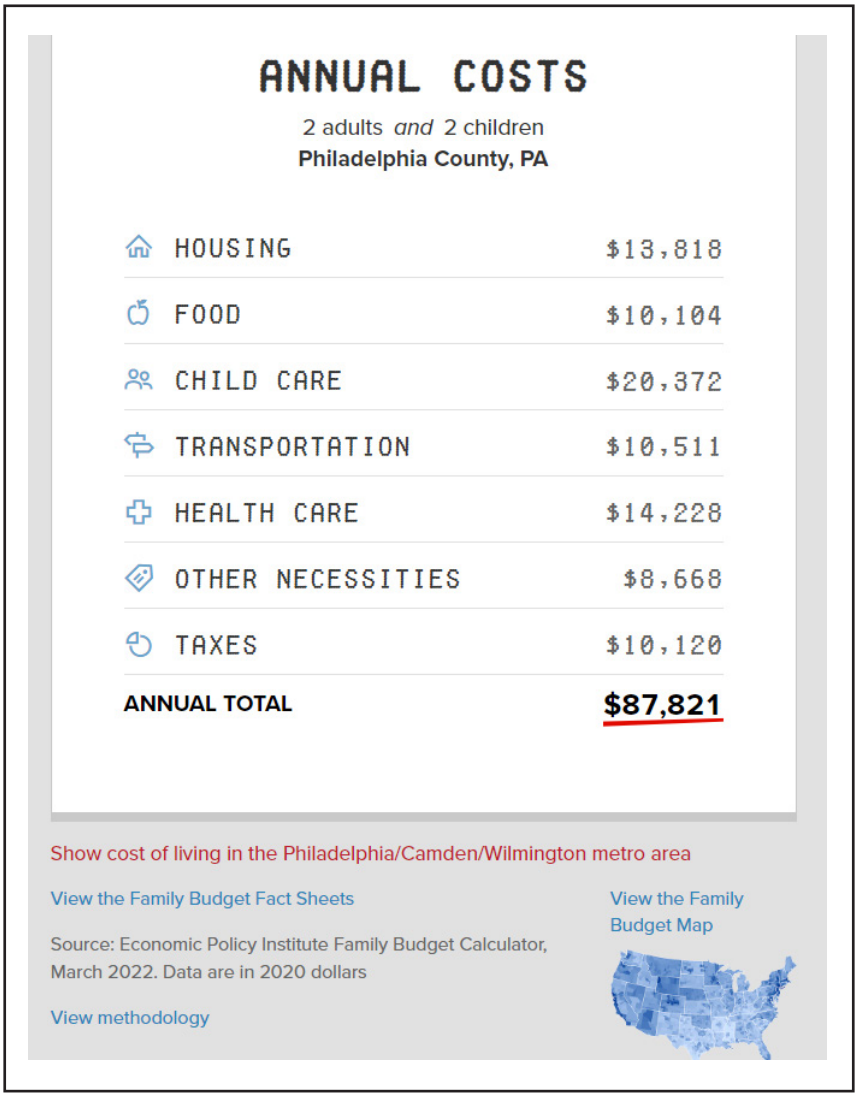
4. What would you do with that leftover money?

5. Can you think of any other necessities that are not listed in the table?

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Handout 2: Cost of Living 100 Years Later

Table 2: Average Annual Income and Spending Costs Using CPI Inflation Calculator					
Adjusted Average Income in 2019 Dollars	Food	Housing	Transportation	Healthcare	**Total Spent**



Economic Policy Institute's Family Budget Map Fact Sheet
https://www.epi.org/resources/budget/

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Table 3: Cost Difference in Food, Housing, Transportation, and Healthcare			
1919 Food (in 2019 prices) Cost:	1919 Housing (in 2019 prices) Cost:	1919 Transportation (in 2019 prices) Cost:	1919 Healthcare (in 2019 prices) Cost:
$10,476.12			
EPI Food Cost:	EPI Housing Cost:	EPI Transportation Cost:	EPI Healthcare Cost:
$10,104.00			
Cost Difference:	Cost Difference:	Cost Difference:	Cost Difference:
- $170.58			

1. Which costs in the EPI chart are not listed in Table 2?

2. Using Table 2 and the EPI chart, fill in Table 3 and find the cost differences by subtracting 1919 cost categories from the EPI chart categories. (The first column has already been done for you.)

3. Which category has the greatest difference? Which category has the smallest difference? Now, rank the categories with the smallest difference to the greatest difference in terms of cost.

4. Why do you think there are cost differences in 1919 and 2019? What could be some of the reasons for the increase in housing, healthcare, and transportation?

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Date: _____

Dear _____ ,

The cost of living in Philadelphia 100 years after 1919 went up a lot. Except for _____, costs in housing, transportation, and healthcare increased.

Housing in 2019 cost almost $10,000 more than it did in 1919. Transportation cost $_____ more. This may be because transportation changed over 100 years, and more folks in 2019 own cars.

Out of these three categories, _____ had the biggest cost difference, as it cost $_____ more in 2019 than it did in 1919.

Since the average income of families surveyed in 1919 was $27,753.92 (in 2019 dollars), they wouldn't be able to afford the cost of living for a family of four 100 years later.

(Insert additional conclusions or opinions here):

Signed,

_____

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Table 1: Average Income and Spending Costs in 1919					
Average Income 1919	Food	Housing	Transportation	Healthcare	**Total Spent**
$1,819.30	$637.51	$200.15	$37.41	$29.02	**$940.09**

1. What is the highest spending category (food, housing, transportation, or healthcare) in the table?

   Food.

2. What is the lowest spending category (food, housing, transportation, or healthcare) in the table?

   Healthcare.

3. How much money is left over after it is spent on food, housing, transportation, and healthcare?

   $879.21

4. What would you do with that leftover money?

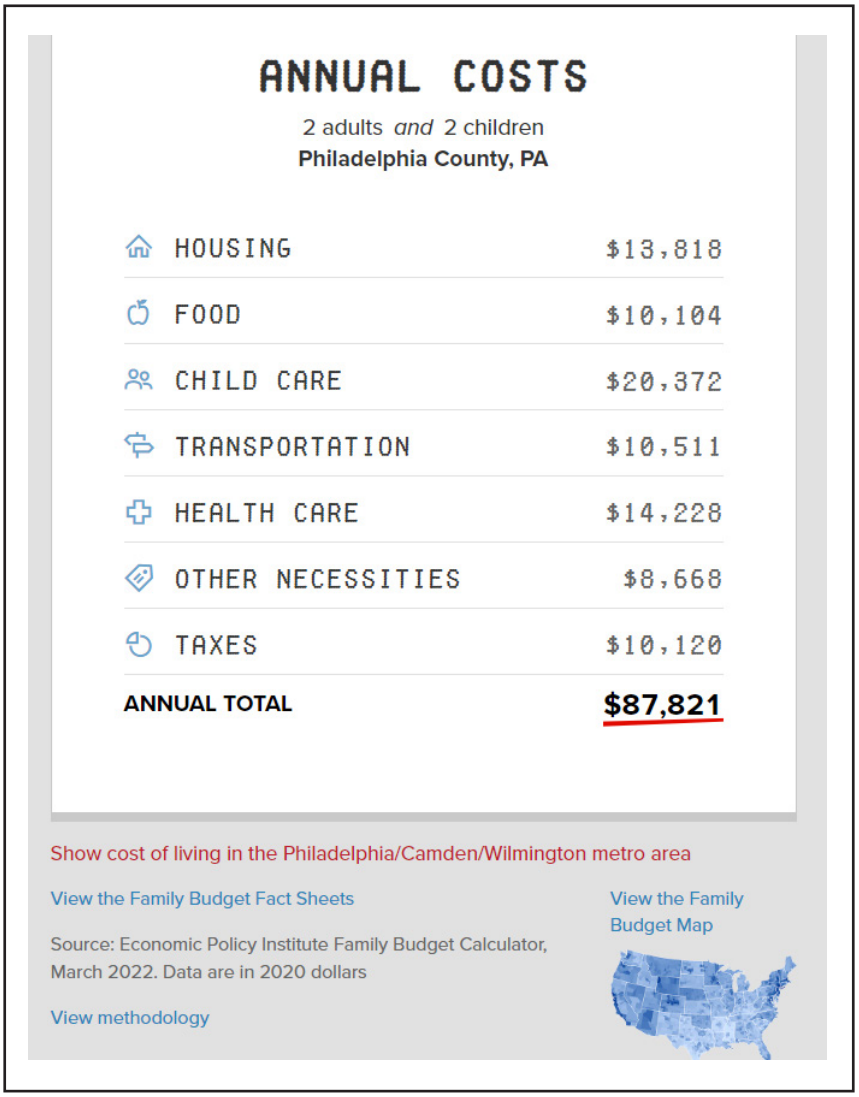
   Answers will vary.

5. Can you think of any other necessities that are not listed in the table?

   Answers will vary.

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Table 2: Average Annual Income and Spending Costs Using CPI Inflation Calculator					
Adjusted Average Income in 2019 Dollars	Food	Housing	Transportation	Healthcare	**Total Spent**
$27,753.92	$10,274.58	$3,053.34	$570.70	$442.71	**$14,341.33**



Economic Policy Institute's Family Budget Map Fact Sheet
https://www.epi.org/resources/budget/

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Table 3: Cost Difference in Food, Housing, Transportation, and Healthcare			
1919 Food (in 2019 prices) Cost:	1919 Housing (in 2019 prices) Cost:	1919 Transportation (in 2019 prices) Cost:	1919 Healthcare (in 2019 prices) Cost:
$10,476.12	$3,053.34	$570.70	$442.71
EPI Food Cost:	EPI Housing Cost:	EPI Transportation Cost:	EPI Healthcare Cost:
$10,104.00	$13,818.00	$10,511.00	$14,228.00
Cost Difference:	Cost Difference:	Cost Difference:	Cost Difference:
- $170.58	- $10,764.66	- $9,940.30	- $13,785.29

1. Which costs in the EPI chart are not listed in Table 2?

   Child care, taxes, other necessities.

2. Using Table 2 and the EPI chart, fill in Table 3 and find the cost differences by subtracting 1919 cost categories from the EPI chart categories. (The first column has already been done for you.)

3. Which category has the greatest difference? **Healthcare.** Which category has the smallest difference? **Food.** Now, rank the categories with the smallest difference to the greatest difference in terms of cost.

   Food, Transportation, Housing, Healthcare.

4. Why do you think there are cost differences in 1919 and 2019? What could be some of the reasons for the increase in housing, healthcare, and transportation?

Answers will vary. May include: Advances in technology, more demand for housing, increased costs in healthcare services such as prescription drugs, and people driving and owning more cars, are some reasons why there are cost differences in 1919 and 2019.

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Date: _____

Dear _____ ,

The cost of living in Philadelphia 100 years after 1919 went up a lot. Except for ____**food**___, costs in housing, transportation, and healthcare increased.

Housing in 2019 cost almost $10,000 more than it did in 1919. Transportation cost $_**9,940.30**_ more. This may be because transportation changed over 100 years, and more folks in 2019 own cars.

Out of these three categories, ___**healthcare**___ had the biggest cost difference, as it cost $__**13,785.29**__ more in 2019 than it did in 1919.

Since the average income of families surveyed in 1919 was $27,753.92 (in 2019 dollars), they wouldn't be able to afford the cost of living for a family of four 100 years later.

(Insert additional conclusions or opinions here):

Signed,

_____

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

ANSWER KEY Socratic Seminar Questions

1. How do economic decisions affect the well-being of individuals, families, and society?

Answers will vary. Student responses can include: Individuals, families, and society have to consider the trade-offs they face when making a choice.

2. What factors affect prices over time?

Inflation, increased demand, limited supply of goods and services, events such as war or natural disasters.

3. What might be different approaches or solutions to economic issues that you think families might face today?

Answers will vary.

4. Should there be more government policies to help families meet a standard of living? Why or why not?

Answers will vary.

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed

Key Learning Standards

New York

Grade 7 Social Studies Standards and Practices

- E1. Explain how economic decisions affect the well-being of individuals, businesses, and society; evaluate alternative approaches or solutions to economic issues in terms of benefits and costs for different groups of people.
- E3. Describe the role that competition has in the determination of prices and wages; identify other factors that help to determine prices.
- E5. Examine data on the state of employment, unemployment, inflation, total production, income, and economic growth in the economy.

Grade 8 Social Studies Standards and Practices

- E1. Explain how economic decisions affect the well-being of individuals, businesses, and society; evaluate alternative approaches or solutions to economic issues in terms of benefits and costs for different groups of people.
- E5. Use appropriate data to evaluate the state of employment, unemployment, inflation, total production, income, and economic growth in the economy.
- E6. Explain how government policies affect the economy

New Jersey

Grades 6 – 8 Social Studies Student Learning Standards

- 6.1.8.EconET.3.a: Identify the effect of inflation and debt on the American people and evaluate the policies of state and national governments during this time.
- 6.3.8.EconET.1: Using quantitative data, evaluate the opportunity cost of a proposed economic action, and take a position and support it (e.g., healthcare, education, transportation).
- 6.3.8.EconET.2: Assess the impact of government incentives and disincentives on the economy (e.g., patents, protection of private property, taxes)

Connecticut

Grades 6 – 8 Social Studies Frameworks

- ECO 6–7.1 Explain how economic decisions affect the well-being of individuals, businesses, and society.
- ECO 6–7.2 Evaluate alternative approaches or solutions to current economic issues in terms of benefits and costs for different groups and society as a whole
- ECO 8.1 Explain how economic decisions affect the well-being of individuals, businesses, and society
- ECO 8.4 Explain how inflation, deflation, and unemployment affect different groups.
- ECO 8.5 Explain why standards of living increase as productivity improves.

C3 Framework

- D2.Eco.1.6-8. Explain how economic decisions affect the well-being of individuals, businesses, and society.

This lesson plan is accessible at the Federal Reserve Bank of New York public website without charge for use by educators and may not be reproduced for sale. Permission is granted to reprint or photocopy this lesson in its entirety for educational purposes, provided the user credits the Federal Reserve Bank of New York, nyfed.org/econ-ed