

## Unit 4

# Paying Taxes

### Lesson 4A:

## What Are Taxes For?

### Rule 4: Contribute your share.

The difference between gross income and net income is the money that must be paid in taxes to various levels of government. People have a say in how taxes are collected and spent primarily through the people they elect to run the government. These lessons look at what the government does with tax revenue—spends it on goods and services—and how taxes are structured and collected.

### Lesson Description

Students participate in an activity that demonstrates the difference between private and public goods to show why it is necessary for the government to provide some goods and services. They also participate in an activity to understand why the government redistributes some tax revenue as income to others.

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### Standards and Benchmarks (see page 84)

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### Grade Level

9-12

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### Concepts

- Income distribution
- Nonexcludability
- Nonrivalry
- Private goods
- Public goods
- Transfer payments

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### Making Personal Finance Decisions

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## Compelling Question

Why does the government provide public goods and transfer payments?

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## Objectives

Students will be able to

- describe the characteristics of a public good or service and provide examples,
  - explain why public goods are often provided by the government,
  - explain why the government may wish to redistribute income, and
  - explain that the government uses tax revenue to buy goods and services.
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## Time Required

45 minutes

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## Materials

- Visual 4A.1: Two Boxes
  - Handout 4A.1: Assessment, one copy for each student
  - Classroom \$10 bills, two for each student
  - One piece of blank paper for each student
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## Procedure

1. Display *Visual 4A.1: Two Boxes* and instruct the students to draw two similar boxes on a sheet of paper and label them “1” and “2.” Explain the following:
    - Imagine you each have 10 tokens that can be placed into these boxes and turned into treats. You get to decide how many of your 10 tokens you wish to place in each box.
    - For each token you place in Box 1, you will receive 1 treat. So, if you place 7 of your 10 tokens in Box 1, you will receive 7 treats.
    - The number of treats you will receive from Box 2 will depend on the total number of tokens placed in Box 2 by the entire class. For every \_\_\_\_ tokens (this number should be *half* the class size, rounded to the next whole number if there is an odd number) placed in Box 2 by the class, each student in the class will receive one treat—regardless of whether you placed any tokens in Box 2. For example, if the class has 24 students, then for every 12 tokens placed in Box 2, each student would receive 1 treat. If the sum of the tokens placed in Box 2 were 64, then each student would receive 5 treats ( $64/12 = 5.33$ , so 5 treats).
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2. To clarify student understanding, discuss the following:
- How many treats will you receive if you put all of your tokens in Box 1? (10)
  - How many treats will each of you receive if all of you put all of your tokens in Box 2? (*Total students* × 10) / *Half the class size* = *Treats per student*. For example, for a class of 24, the number of treats would be the following:  $[24 \times 10] / 12 = 20$ , or  $240 / 12 = 20$ .)
3. Explain that Box 2 potentially pays off twice as well as Box 1—20 treats versus 10 treats. Discuss the following:
- Is everyone placing all of his or her tokens in Box 2 the best choice for everyone in the class? (*Answers will vary.*)
  - Point out that if a student places all of her or his tokens in Box 1 while the rest of the class places all their tokens in Box 2, the student would get 10 treats from Box 1 plus likely more than 10 treats from Box 2. For one student in a class of 24, this scenario would be calculated as follows:  
 Box 1 = 10 Tokens  
 Box 2 =  $230 / 12 = 19.167$  (so, 19 tokens)  
 10 + 19 = 29 Tokens
4. Instruct the students to write how many of their 10 tokens they wish to allocate to each box—not allowing anyone to see their choices. Tell them to write their name at the top of the paper and then fold the paper in half and turn it in.
5. Go through the papers and total the number of tokens allocated to Box 2, and then calculate the number of treats Box 2 provides per student and announce it to the class:
- $$\frac{\text{Total tokens in Box 2}}{\text{Half the class size}} = \text{Total treats per student}$$
6. Determine the total number of treats for each student by adding the number of treats received from Box 2 to the number of treats received from Box 1. (Students who put most of their tokens in Box 1 will end up with the most treats. However, because many [likely] chose to put their tokens in Box 1, the total number of treats each student receives is usually less than what they could have been earned had everybody put their tokens in Box 2.)
7. Calculate the total treats earned by the class based on their allocations as follows: Determine the number of treats generated from Box 2 (The answer in Step 5 times the number of students in the class). Add this to the total number of tokens allocated to Box 1. To easily calculate the Box 1 total, determine the total number of tokens in

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the class (10 times the number of students in the class) and subtract the total number of tokens placed in Box 2 (which you determined in Step 5).

8. Compare the total treats generated by everyone in the class with what could have been generated (already determined in Step 2) had everyone put all their tokens in Box 2. (The number is generally less, sometimes significantly less.)
9. Explain that the class did not do a very good job of turning tokens into treats. They could have had more treats had everyone placed their tokens in Box 2. If they think of the tokens as “dollars” and the treats as “goods and services,” then what just happened was not a very good deal—they could have gotten a lot more for their money.
10. Explain that the two boxes represent two different types of goods as follows:
  - Box 1 represents **private goods**, while Box 2 represents **public goods**.
  - A public good has two characteristics that make it different from a private good:
    - i. **nonrivalry**, which means one person’s benefit from a good or service doesn’t reduce the benefit available to others from that good or service, and
    - ii. **nonexcludability**, which means it isn’t possible to keep those who don’t pay for a good or service (free riders) from obtaining the benefits from that good or service.
11. Provide examples of public goods, emphasizing the two characteristics above. Examples include national defense; public television; over-the-air radio/television broadcasts; natural environments (rainforests, parks, wildlife habitats, and wilderness areas); a fireworks display; the services of lighthouses and highways; mosquito control; and street lighting. (For example, if someone decides to spray mosquito nesting areas to reduce mosquitoes in an area, no one in that area can be excluded from receiving the benefits—even if they did not help pay for the service.)
12. Explain the following:
  - People often assume that other people will buy public goods so that they can spend their own money on private goods and end up with both public and private goods.
  - For example, a person may watch public television and enjoy the programs but never pledge money to support public television. Others do contribute. As a result, the non-supporter—the free rider—is able to benefit from the public television programming and spend what he or she might have contributed on other goods and services.

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- As the classroom activity demonstrated, we all have the same tendency. Because those who might provide public goods can't exclude those who don't pay for using them, few people are willing to provide public goods or services themselves.
  - The government typically provides public goods that are nonrival and nonexcludable along with selected other goods and services that society wants. The government pays for these goods and services by collecting taxes.
  - The government also makes **transfer payments**, which are payments made by the government to people who do not supply goods or services or labor in exchange for those payments.
13. Distribute two classroom \$10 bills to each student. Tell the students they are going to participate in an activity that will help them understand why the government transfers funds to other groups of people in society. Explain the following:
- Each of you is going to choose two pizzas to buy—pepperoni and/or vegetarian.
  - The pizzas are \$10 each.
  - You may buy either kind with your \$20, but can afford only two pizzas each.
14. Ask each student what they would like to order and tally the orders by the two pizza types, noting the students' names with their orders. Each student may order two pepperoni pizzas, two vegetarian pizzas, or one of each. Collect the money—\$20 per student.
15. Report the results: \_\_\_\_ pepperoni; \_\_\_\_ vegetarian. (The sum should be equal to the number of \$10 bills distributed.)
16. Redistribute the \$10 bills. Give the students who chose the least-ordered pizza (likely vegetarian) four to six bills and give the remaining students none or one \$10 bill.
17. Again, ask each student how many of each kind of pizza they would like to buy, record a tally on the board, and collect the money. (Students with more dollars will be able to buy more pizzas—that is, a student with six \$10 bills can buy six pizzas in any combination, while a student with no bills can't buy any pizzas.)
18. Report the results: \_\_\_\_ pepperoni; \_\_\_\_ vegetarian. (Given that the vegetarian lovers had more money, more vegetarian pizzas will likely be ordered, although the total sum of pizzas should still be the same—equal to the number of \$10 bills.) Discuss the following:
- How did the mix of pizzas change between pepperoni and vegetarian? (*Most will say something about how those with the most money got more of what they wanted.*)

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- How do you feel about this change? (*Some might comment that the second distribution wasn't "fair" because some students got more money than others.*)
19. Explain that the activity shows how **income distribution**—the way income is distributed among individuals in a society—affects the mix of goods and services produced and consumed in an economy. Essentially, each dollar of income or wealth a person spends is like one vote on what gets produced and consumed. Discuss the following:
- Is this type of “voting” fair? (*Answers will vary. Some students will say “yes” because they believe those with more income or wealth earned it by working hard or making good choices. Other students will say “no” because they believe not everyone has the same opportunities to earn income or that each person’s desires should count equally.*)
20. Remind students that a person’s income or wealth is based on the quality and quantity of resources they have to sell—most notably their human resources (labor). Explain the following:
- For a variety of reasons, some people are not able to earn an income by using their human resources: They may be too young or old to work, disabled and unable to work, or willing and able to work but unemployed because they cannot find a job with the skills they have.
  - In each case, these people likely earn little to no income. As demonstrated in the pizza activity, they might be able to purchase only a few goods and services or possibly none at all.
  - The government often taxes those with more income and redistributes the money through transfer payments to those who have very little or no income.
  - Transfer programs include welfare programs for the poor, unemployment benefits for the unemployed, and Social Security benefits for the disabled and elderly.

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## Closure

21. Explain that the lesson has focused on two reasons the government collects taxes: (i) to provide public goods and (ii) to redistribute income to the disadvantaged to purchase private goods and services. In both cases, taxes end up being used to buy goods and services.

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## Assessment

22. Distribute a copy of *Handout 4A.1: Assessment* to each student and allow time for students to work (or assign as homework).

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## Making Personal Finance Decisions

**Handout 4A.1: Assessment—Answer Key**

Directions: Write at least one paragraph for each numbered item.

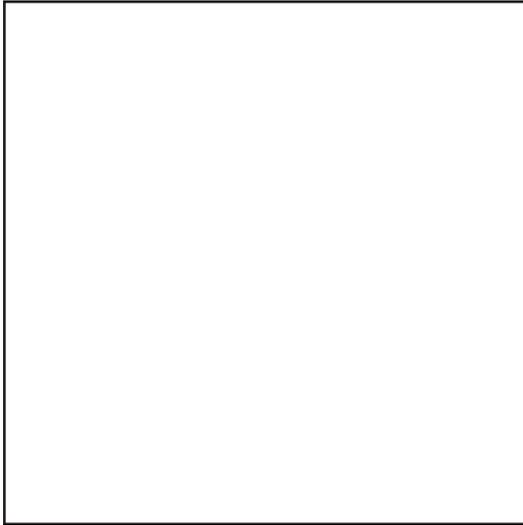
1. The government collects taxes to pay for public goods.
  - Summarize the characteristics of a public good. (*Public goods are nonexcludable and nonrival.*)
  - Explain how the government pays for public goods. (*The government collects taxes to pay for them.*)
  - Explain why the government is better suited to provide national defense than open a chain of fast-food restaurants. (*National defense is a public good. It is both nonexcludable and nonrival. As such, private firms will not produce national defense because they will not be able to earn a profit. Rather, private firms are well suited to produce private goods such as fast food, which is both excludable and rival.*)
  
2. The government also collects taxes to redistribute income.
  - Explain how the dollars spent by consumers act as votes for what producers decide to produce. (*Producers produce what consumers want to buy because they want to earn a profit. So spending on a specific good or service provides an incentive for producers to produce that good or service.*)
  - How do transfer payments change what gets produced? (*Transfer payments change the demand for what gets produced by reducing the “votes” of those with high incomes and wealth and increasing the votes of those with smaller incomes and wealth.*)
  - Explain how some people see transfer payments as making society fairer, while others see this redistribution as unfair. (*Some see income redistribution as a way to provide for those with little income and address income inequality in society. It gives those with little or no income a higher standard of living and more opportunity than they would have had otherwise. Some see redistribution as unfair because it takes income from people who worked to earn it and gives it to people who did not work to earn it.*)

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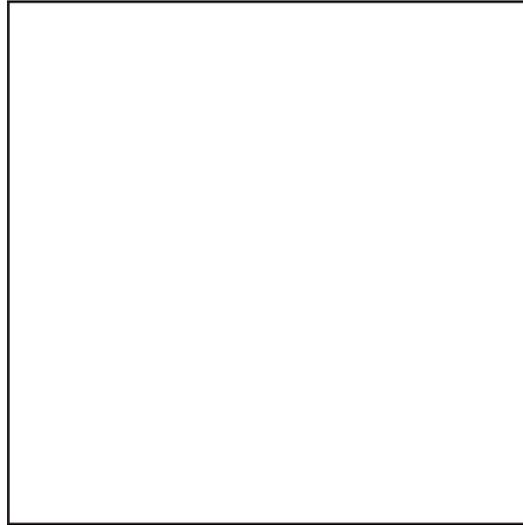
**Visual 4A.1: Two Boxes**

**1**



For each token you place in Box 1,  
you will receive **1 treat**.

**2**



For every \_\_\_\_ tokens  
placed in Box 2 by the class,  
each student in the class  
will receive **1 treat**.

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**Making Personal Finance Decisions**

**Handout 4A:1: Assessment**

Name: \_\_\_\_\_

Directions: Write at least one paragraph for each numbered item.

1. The government collects taxes to pay for public goods.
  - Summarize the characteristics of a public good.
  - Explain how the government pays for public goods.
  - Explain why government is better suited to provide national defense than open a chain of fast-food restaurants.
  
2. The government also collects taxes to redistribute income.
  - Explain how the dollars spent by consumers act as votes for what producers decide to produce.
  - How do transfer payments change what gets produced?
  - Explain how some people see transfer payments as making society fairer, while others see this redistribution as unfair.

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## Standards and Benchmarks

### Voluntary National Content Standards in Economics

**Standard 16: Role of Government and Market Failure.** There is an economic role for government in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also have direct or indirect effects on people's incomes.

- **Benchmarks: Grade 8**
  1. Public goods and services provide benefits to more than one person at a time, and their use cannot be restricted to only those people who have paid to use them.
  2. If a good or service cannot be withheld from those who do not pay for it, producers expect to be unable to sell it and, therefore, will not produce it. Governments provide some of these goods and services.
- **Benchmark: Grade 12**
  9. Governments often redistribute income directly when individuals or interest groups are not satisfied with the income distribution resulting from markets; governments also redistribute income indirectly as side-effects of other government actions that affect prices or output levels for various goods and services.

### National Standards for Financial Literacy

**Standard 1: Earning Income.** Income for most people is determined by the market value of their labor, paid as wages and salaries. People can increase their income and job opportunities by choosing to acquire more education, work experience, and job skills. The decision to undertake an activity that increases income or job opportunities is affected by the expected benefits and costs of such an activity. Income also is obtained from other sources such as interest, rents, capital gains, dividends, and profits.

- **Benchmarks: Grade 12**
  5. The wage or salary paid to workers in jobs is usually determined by the labor market. Businesses are generally willing to pay more productive workers higher wages or salaries than less productive workers.
  7. Taxes are paid to federal, state, and local governments to fund government goods and services and transfer payments from government to individuals. The major types of taxes are income taxes, payroll (Social Security) taxes, property taxes, and sales taxes.

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