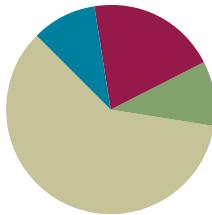


Lesson 22

Objective: Explain the difference between gross income and net income. Define income tax and payroll tax.

Suggested Learning Structure

Fluency Practice	(12 minutes)
Application Problem	(7 minutes)
Concept Development	(34 minutes)
Student Debrief	(7 minutes)
Total Time	(60 minutes)



Fluency Practice (12 minutes)

- Add and Subtract Decimals **5.3K** (4 minutes)
- Multiply a Decimal Fraction and a Whole Number **5.3D** (4 minutes)
- Round Decimal Numbers **5.2C** (4 minutes)

Add and Subtract Decimal Numbers (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity prepares students for today's lesson.

- T: (Project $10.53 - 3.48$.) Solve on your white board.
 T: What is the difference of 10.53 and 3.48 ?
 S: 7.05 .
 T: (Project $320.45 + 789.76$.) Solve on your white board.
 T: What is the sum of 320.45 and 789.76 ?
 S: $1,110.21$.

Repeat the process with $43.4 - 7.59$ and $89.79 + 541.34$.

Multiply a Decimal Fraction and a Whole Number (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity prepares students for this lesson. Keep each equation visible in order to encourage students to use place value patterns to find the products.

T: (Project 0.4×32 .) Find the product on your white board. What is 4 tenths of 32?

S: 12.8.

T: Explain why your product is reasonable. Talk to your partner.

S: 1 tenth of 32 is 3.2, and 12.8 is four copies of that. → 4 tenths is a little less than 5 tenths, which is the same as 1 half. $\frac{1}{2}$ of 32 is 16, and 12.8 is a little less than 16.

T: (Project 0.04×32 .) Find the product on your white board. What is 4 hundredths of 32?

S: 1.28.

T: Explain why your product is reasonable.

S: I know that 0.04 is $\frac{1}{10}$ of 0.4. So the product of 0.04 and 32 is $\frac{1}{10}$ as much as the product of 0.4×32 .

Continue with the following possible sequence: 0.04×320 ; $0.04 \times 32,000$; $0.4 \times 320,000$.

Round Decimal Numbers (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews students' understanding of rounding decimals to different place values and prepares them for today's lesson.

T: (Project 0.625.) Say the number.

S: 625 thousandths.

T: On your personal white board, round the number to the nearest tenth.

S: (Write $0.625 \approx 0.6$.)

T: On your personal white boards, round the number to the nearest hundredth.

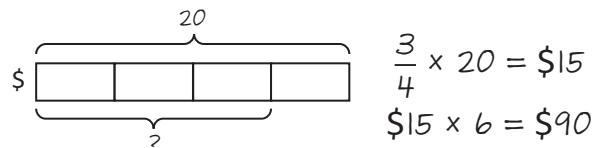
S: (Write $0.625 \approx 0.63$.)

Continue with the following possible sequence, rounding each number to the nearest tenth and hundredth: 0.763, 2.598, 31.496.



Application Problem (7 minutes)

Sofia wants to buy a bike that costs \$82. She mows lawns on the weekends. She earns \$20 each weekend. If she saves $\frac{3}{4}$ of her earnings, how many weeks will she have to work to have enough money? How much money will be left in her savings after paying for the bike?



Sofia will have to work 6 weeks to save enough money to buy the bike.

$$\begin{array}{r} \$8\ 10 \\ - \$82 \\ \hline 8 \end{array}$$

Sofia will have \$8 left of her savings.

Concept Development (34 minutes)

Materials: (S) Personal white board, Ben's Pay Stub (Lesson Template)

Note: This lesson introduces a lot of new vocabulary to students. Once the terms have been introduced, encourage students to use them correctly in their discussions.

T: We are going to talk more about Ben's finances today. Each month when Ben gets paid, he gets a pay stub that gives details about his income for that pay period. I am going to give you a copy of one of Ben's pay stubs. With your partner, discuss what you notice about the different amounts listed on the pay stub. (Distribute Ben's Pay Stub.)

TMI Software, Inc 123 Webster Ave Waco, TX 76706	Earnings Statement Period Ending: 9/15/20 Pay Date: 10/18/20
GROSS INCOME:	DEDUCTIONS
Annual: \$ 75,000	Income Tax \$ _____
This period: \$ 3,200	Payroll Tax \$ _____
TOTAL DEDUCTED: \$ _____	Health Insurance \$ _____
NET INCOME:	
Annual: \$ 60,120	
This period: \$ 2,500	

S: Ben's gross pay is a lot more than his net pay. → There's a place on the pay stub for deductions, but none are listed. What is a deduction? → It looks like income tax, payroll tax, and health insurance are subtracted from the gross income amount. The difference is the net pay.

T: (Point to the gross pay and net pay lines on Ben's pay stub.) Why might these two pay amounts be different?

S: The net pay is less than the gross pay. → The income tax, payroll tax and health insurance are subtracted from the gross pay.

T: (Draw a strip diagram to illustrate the relationships between the incomes and the taxes.) Ben's gross income is the total amount of pay that Ben receives from his employer. However, there are amounts that are subtracted from his pay for **taxes**. A **tax** is money people pay to support local, state, and federal governments. The amount of each tax represents a fraction of a person's gross pay. Taxes are one type of deduction because they are amounts subtracted from the gross pay.

Another type of deduction is health insurance. The cost of health insurance is also subtracted from the gross pay.

Gross pay

Net pay	Deductions
---------	------------

Ben's Gross pay

Ben's Net pay ?

T: What is the difference between the amount of Ben's gross income and the amount of his net income?

S: \$700.

T: \$2,500 is Ben's **net income**. Net pay, or net income, is the amount of money a person takes home after taxes and other deductions. This is the money that Ben has to spend or save. In Ben's case, he has **income tax**, **payroll tax**, and health insurance payments deducted from his gross income. **Income tax** is the money that the government collects based on a person's income. Federal income taxes pay for national programs such as national defense, veterans programs, social programs, community development, and foreign affairs. **Payroll tax** is also a fraction of a person's income. Payroll taxes are deducted to pay for programs that help people when they retire.

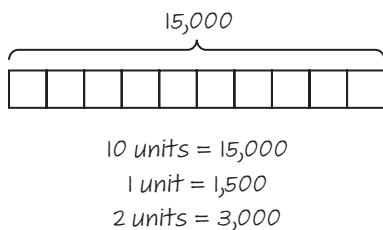
T: (Project income tax = $\frac{1}{10}$ of gross income.) Let's find out how much income tax is deducted from Ben's gross income. How could we solve for $\frac{1}{10}$ of \$3,200?

S: We could draw a strip diagram with 10 equal units and figure out what 1 unit is worth. → We could multiply $\frac{1}{10}$ by \$3,200. → We could multiply 0.1 by \$3,200.

T: On your white board, identify how much income tax is deducted from each paycheck. Be ready to share your equation.

S: $0.1 \times \$3,200 = \320 .

- T: (Project payroll taxes = $\frac{1}{10}$ of gross income.) How much payroll tax is deducted from each paycheck?
- S: \$320.
- T: The rest of the money deducted each month pays for Ben's health insurance. Work with your partner to identify the amount deducted from each of Ben's paychecks for health insurance. How do you know?
- S: \$60. The difference between the amount of taxes deducted and \$640 is \$60.
- T: Ben's father, Mr. Jones, earns \$15,000 each month. That is his monthly gross income.
- T: 2 tenths of Mr. Jones's monthly gross income is deducted for income tax. 8 hundredths of his monthly gross income is deducted for payroll tax. Work with your partner to identify the amount of total taxes deducted from Mr. Jones's paycheck each month.



- S: (Work to identify \$4,200.)
- T: If Mr. Jones has no other deductions, what is his net income each month?
- S: \$10,800.
- T: What is the purpose of each tax deducted from a person's gross income?
- S: Income tax is deducted from a person's income and supports our local, state and federal government.
→ Payroll taxes are also deducted from gross income to help pay for programs that help people when they retire.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.

Student Debrief (7 minutes)

Lesson Objective: Explain the difference between gross income and net income. Define income tax and payroll tax.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What is the difference between gross income and net income?
- Turn and talk to your partner about how you will remember the difference between gross income and net income.
- What are taxes?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

1. The taxes deducted from Jeri's monthly paycheck are \$581.00. Money is also deducted from her monthly gross income for her health insurance. If Jeri's gross income is \$8,300 and her net income is \$7,624, what is the amount deducted for her health insurance?

$$\begin{array}{r} \$ 8,300 \\ - \$ 7,624 \\ \hline \$ 676 \end{array}$$

gross income
net income
in deductions

$$\begin{array}{r} \$ 17 \\ - \$ 581 \\ \hline \$ 95 \end{array}$$

taxes
health
insurance

2. Fred's monthly gross income is \$5,000. The payroll tax deducted from Fred's monthly gross income is \$400. An additional 9 hundredths of his monthly gross income is deducted for income tax, and \$100 is deducted for health insurance. If Fred has no other deductions, what is his net income each month?

$$\begin{array}{r} 5,000 \\ \times 0.09 \\ \hline 450.00 \end{array}$$

Fred pays \$ 450 for income tax each month.

$$\begin{array}{r} 5,000 \\ \times 0.08 \\ \hline 400.00 \end{array}$$

Fred pays \$ 400 for payroll tax each month.

$$\begin{array}{r} \$ 450 \\ + \$ 400 \\ \hline \$ 850 \end{array}$$

Fred pays \$ 850 for income tax and payroll tax each month.

$$\begin{array}{r} \$ 850 \\ + \$ 100 \\ \hline \$ 950 \end{array}$$

Fred's income tax + payroll tax + health insurance each month.

$$\begin{array}{r} \$ 950 \\ - \$ 450 \\ \hline 4,050 \end{array}$$

Fred net income each month is \$ 4,050.

3. Explain the difference between gross income and net income.



Lesson 22: Explain the difference between gross income and net income. Define income tax and payroll tax.

Name _____

Date _____

1. The taxes deducted from Jeri's monthly paycheck are \$581.00. Money is also deducted from her monthly gross income for her health insurance. If Jeri's gross income is \$8,300 and her net income is \$7,624, what is the amount deducted for her health insurance?
2. Fred's monthly gross income is \$5,000. The payroll tax deducted from Fred's monthly gross income is \$400. An additional 9 hundredths of his monthly gross income is deducted for income tax, and \$100 is deducted for health insurance. If Fred has no other deductions, what is his net income each month?
3. Explain the difference between gross income and net income.

**Lesson 22:**

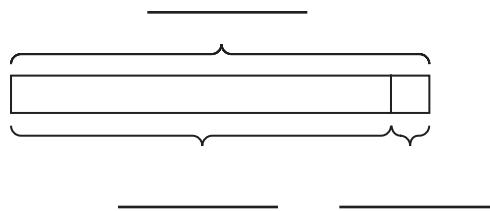
Explain the difference between gross income and net income. Define income tax and payroll tax.

Name _____

Date _____

1. The strip diagram represents John's pay.

- a. Label the whole and the parts with gross income, net income and taxes.



- b. What are the two types of taxes that are deducted from a person's gross income?
2. John's net income each month is \$5,500. Each month, \$448.20 is deducted for income tax, \$335.50 is deducted for payroll tax, and \$210.00 is deducted for health insurance. What is John's monthly gross income?



Lesson 22: Explain the difference between gross income and net income. Define income tax and payroll tax.

Name _____

Date _____

1. Kathleen's monthly gross income is \$6,250. Each month, \$437.50 is deducted for income taxes, \$375 is deducted for payroll taxes is deducted from her paycheck, and \$75.00 is deducted for health insurance. What is Kathleen's monthly net income?
 2. Claire's monthly gross income is \$6,000. The income tax deducted each month is 1 tenth of her monthly gross income. An additional 8 hundredths of her monthly gross income is deducted for payroll tax, and \$120 is deducted for health insurance. If Claire has no other deductions, what is her net income each month?

TMI Software, Inc
123 Webster Ave
Waco, TX 76706

Earnings Statement
Period Ending: 9/15/20
Pay Date: 10/18/20

Employee: Ben Jones
418 7th Avenue
Waco, TX 76706

GROSS INCOME:

Annual: \$ 75,000
This period: \$ 3,200

TOTAL DEDUCTED: \$ _____**NET INCOME:**

Annual: \$ 60,120
This period: \$ 2,500

DEDUCTIONS **AMOUNT**

Income Tax \$ _____

Payroll Tax \$ _____

Health Insurance \$ _____

Ben's Pay Stub



Lesson 22: Explain the difference between gross income and net income. Define income tax and payroll tax.