WAMC Lab Template

Math Concept(s): Calculating weekly, bi-weekly, semi-weekly paychecks 6-2

Source / Text: Financial algebra

Developed by:Marcos Ahumada E-Mail: marcos.ahumada@wvsd.org Date: Summer In-service 2014

Attach the following documents:

Lab Instructions Students will use the given paystub to calculate the following percentages of their hourly wage. Income tax, social security, dental, retirement, and association/union dues

Student Handout(s) Monthly paystub

Rubric and/or Assessment Tool points total from calculations

Short Description (Be sure to include where in your instruction this lab takes place):

Lab Plan

Lab Title: What do I take home after Uncle Sam gets his????

Prerequisite skills: percentage computation, computer research for housing, tax brackets, understanding of bi-weekly, semi-monthly, and monthly calcuations

Lab objective: Students will learn how to calculate their take home pay after taxes and how many hours would need to be worked in order to purchase a car, either new or used.

Standards:

CCSS-M:

- Understanding and using equations
- Calculating percentage increase, decrease
- Building a function that models a relationship between the two quantities

Standards for Mathematical Practice:

- Attend to precision
- Use tools appropriately
- Make sense of problems and preserve to solve them

State Standards addressed (2008 Washington State Mathematics Standards):

-

Reading:

-

Writing:

-

Leadership/21st Century Skills:

21st Century Interdisciplinary themes (Check those that apply to the above activity.)

☐ Global Awareness ☐ Financial/Economic/Business/Entrepreneurial Literacy ☐ Civic Literacy
☐ Health/Safety Literacy ☐ Environmental Literacy

21st Century Skills (Check those that students will demonstrate in the above activity.)

LEARNING AND INNOVATION
Creativity and Innovation
☐ Think Creatively
☐ Work Creatively with Others
☐ Implement Innovations
Critical Thinking and Problem Solving
x Reason Effectively
☐ Use Systems Thinking
x Make Judgments and Decisions
x Solve Problems
Communication and Collaboration
x Communicate Clearly
☐ Collaborate with Others

INFORMATION, MEDIA & TECHNOLOGY SKILLS
Information Literacy
☐ Access and Evaluate Information
☐ Use and manage Information
Media Literacy
x Analyze Media
☐ Create Media Products
Information, Communications and Technology (ICT Literacy)
x Apply Technology Effectively

LIFE & CAREER SKILLS
Flexibility and Adaptability
x Adapt to Change
☐ Be Flexible
Initiative and Self-Direction
x Manage Goals and Time
X Work Independently
☐ Be Self-Directed Learners
Social and Cross-Cultural
x Interact Effectively with Others
☐ Work Effectively in Diverse Teams

Productivity and Accountability
☐ Manage Projects
☐ Produce Results
Leadership and Responsibility
☐ Guide and Lead Others
☐ Be Responsible to Others

Teacher Preparation: (What materials and set-up are required for this lab?)

Materials

- Caclulator
- Monthly paystub
- Computer access for car ads, or car advertisement

Set-Up Required:

- Everybody pays taxes, but how much do you actual get from every hour you work?

Lab Organization Strategies:

Grouping/Leadership/Presentation Opportunities:

- Include research for other careers and complete similar calculations in order to see actual pay increase of career change.

Cooperative Learning:

- Using their payments to confer with students about their calculations about transportation.

Expectations:

- Students will produce the correct percentage of their hourly wage which is taken in the form of taxes from their gross pay to account for their total net pay.

Timeline:

- One class period, approximately 50 minutes

Post Lab Follow-Up/conclusions:

Discuss real world application of learning from lab

- Helping to create monthly/weekly budget depending on pay period and schedule

Career Applications

-

Optional or Extension Activities

- Include additional monthly expenditures, rent, utilities, phone, kids etc.

WAMC Lesson Plan

Name(s): Marcos Ahumada
Lesson Title: 6-2 How do you want to be paid
Date: 6/24/14
Text:Financial Algebra Lesson Length: 50 mins

Domain: Creating equations	
Big Idea (Cluster): Finding employment	
Common Core State Standards Creating equations and describe the relationships	
Mathematical Practice(s): Attending to precision, using mathematical tools appropriately	
Content Objectives: : Computing weekly, semimonthly, and biweekly earnings from an annual salary	Language Objectives: Math terminology
Vocabulary: Weekly, Bi-Weekly, Semimonthly, monthly, direct deposit, hourly rate, regular hours, overtime hours, overtime hourly rate, time-and-a-half, double-time, gross pay, minimum wage	Connections Prior to Learning How often does someone have to get paid. How to determine overtime hours and regular hours.
Questions to Develop Mathematical Thinking: • Why would you choose a different payment schedule than the traditional pay schedule of every two weeks.	Common Misconceptions: • All overtime hours are the same pay, • All overtime hours are after 40 weekly hours. • Bi-weekly and semi-monthly are the same.

Assessment (Formative and Summative):

- Exit slip questions for students. Example problems will be given from the textbook examples.

Materials:

- Financial algebra textbook, calculator,

Instruction Plan:

Launch: As students enter class giving students a post it note with an amount from an annual salary. Each slip will have a different amount as semi-monthly, bi weekly, monthly, and weekly.

- Students will create posters highlighting how they determined the solution to their paycheck and provide possible scenarios where they would like to be paid in this manner.
- Class would complete a gallery walk where they would observe and make notes upon each other groups posters and reasons.
- Class would come together for direct instruction concerning the correct terminology and calculations for their paychecks
- Students will complete sample exercises from the text which deal with calculations of regular hours, overtime hours, and double time hours.

Explore: Students will get into groups of common amounts and determine how these were calculated only given the annual salary.

When I observe students: I will listen to conversations about some possible language terminology. Possible discussions regarding calculations.

Questions to Develop Mathematical Thinking as you observe: So this was divided from an

annual salary, what did you get for the number of paychecks? How could this apply to a pay schedule?
Answers: Students should calculate the answers to be bi-weekly, monthly, weekly, and possibly semi-monthly.
Summarize: Students will be able to calculate the paychecks for Bi-weekly, semi-monthly, and monthly pay periods. They will correctly calculate the payment for regular and overtime pay periods with the given pay rate.

Career Application(s):

- Salary calculations, overtime calculation, business payment plans, finance management, budgeting, personal budgeting skills.

21st Century Skills and Interdisciplinary Themes:

21st Century Interdisciplinary themes (Check those that apply to the above activity.)

☐ Global Awareness x Financial/Economic/Business/Entrepreneurial Literacy ☐ Civic Literacy
☐ Health/Safety Literacy ☐ Environmental Literacy

21st Century Skills (Check those that students will demonstrate in the above activity.)

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Name_____

Quiz 6-2 Pay periods and Hourly rate

(For calculations please round your answer to the nearest cent.)

1. Bi-Weekly and Semi-monthly pay periods
    a. Compare and contrast the two pay periods listed above.

    b. You are starting your first job, and the employer is allowing you to decide how often you would like to be paid. What would your salary check be from your job which pays $53,500 annually, on both of the above list pay schedules?

    c. What would the total pay for a monthly pay schedule?

2. You calculated the number of hours you worked last week as 47 hours. You get paid time and half for hours in excess of 40 hours in a week. How much did you make last week, with and hourly pay rate of $10.50 per hour?

Name____KEY_____

Quiz 6-2 Pay periods and Hourly rate

(For calculations you complete, please round your answer to the nearest cent.)

1. Bi-Weekly and Semi-monthly pay periods
    a. Compare and contrast the two pay periods listed above.
    Both are paid twice during the period. However, during the Bi-Weekly period you would receive 26 paychecks during the year. Semi-monthly period checks would calculate to be a total of 24 checks throughout the year.

    b. You are starting your first job, and the employer is allowing you to decide how often you would like to be paid. What would your salary check be from your job which pays $53,500 annually, on both of the above list pay schedules?

    Bi-Weekly: 53,500/26= $2063.46

    Semi-Monthly: 53,500/24 = $2235.42

    c. What would the total pay for a monthly pay schedule?

    Monthly: 53,500/12 = $ 4470.83

2. You calculated the number of hours you worked last week as 47 hours. You get paid time and half for hours in excess of 40 hours in a week. How much did you make last week, with and hourly pay rate of $10.50 per hour?

    40(10.50) + 7(15.75)= $530.25