

VITAL INFORMATION

Subject(s):	Careers, Computer Fundamentals 1-2
Topic or Unit of Study:	Software Development
Grade/Level:	9-12
Objective:	<p>At the conclusion of this lesson students will be able to:</p> <ol style="list-style-type: none">1. Document constants by assigning them to an appropriately named variable.2. Assign a value to a variable upon definition.3. Use variables to store partial answers in a complicated calculation.4. Create variables which do not appear at all in the user interface.5. Explain what kinds of taxes will be withheld from their future paychecks.
Summary:	<p>Students modify their program that calculates gross pay based on number of hours worked and an hourly rate. The new program takes taxes into account (federal, state, and FICA) to calculate net pay. In writing it, students use significantly more variables and use them not just for practice, but in order to store intermediate values which are used further down the line.</p>

IMPLEMENTATION

Learning Context:	<p>Students have just finished the regular paycheck and are about to work on an overtime paycheck. The video for the overtime paycheck asks them to perform the same tax calculations as they had done previously, but there hadn't been any. This lesson fills in that gap. It also provides an opportunity to familiarize students with what their future paychecks might look like and what all those withholdings are spent on.</p>
Procedure:	<ol style="list-style-type: none">1. Display for students the class web page where there is a screen shot of the paycheck calculator, a list of equations they will need, examples of how to define and initialize a variable on a single line, and instructions to research taxes. A printout is attached. It should contain all the information that they need.2. When students are finished, test the program, inspect the source code, and read their answers to the tax question. Evaluate based on the rubric.

Differentiated Instruction:	Little variation is allowed. Students can refer to the web page as often as they wish.
Sample Student Products:	The result should look significantly like the screen shot on the web page except that the students will probably be much more creative.
Collaboration:	Students will work individually.
Time Allotment:	1 class period. 55 Min. per class.
Author's Comments & Reflections:	Reflections will follow in a diary entry.

MATERIALS AND RESOURCES

Instructional Materials: Web page for the activity, attached.

Attachments

1. Taxed Paycheck

Resources:

- Technology resources:
Visual Basic for programming, internet for tax research

STANDARDS & ASSESSMENT

Standards:

 **AZ- Career and Technical Education Programs**

- **Level :** Career Preparation (Grades 10 - 12)
- **Program :** Information Technology CIP No. 15.1200
- **Option :** Software Development - Option C
 - **Competency :** *3.0 DEVELOP APPROPRIATE WORK HABITS FOR SUCCESSFUL EMPLOYMENT IN INFORMATION TECHNOLOGY
 - **Indicator :** 3.3 Complete tasks accurately
 - **Indicator :** 3.4 Complete tasks with minimal supervision
 - **Competency :** *9.0 UTILIZE TECHNOLOGY REQUIRED IN AN INFORMATION TECHNOLOGY WORKPLACE
 - **Indicator :** 9.2 Demonstrate basic usage of computers such as input, storage, and output
 - **Competency :** 18.0 DEMONSTRATE WRITTEN COMMUNICATIONS SKILLS APPLICABLE TO AN INFORMATION TECHNOLOGY ENVIRONMENT
 - **Indicator :** 18.1 Conduct formal and informal research to collect appropriate topical information
 - **Competency :** 28.C USE SOFTWARE TO CREATE PROGRAMS
 - **Indicator :** 28.1c Enter and modify code using a program editor
 - **Indicator :** 28.2c Compile and execute programs
 - **Indicator :** 28.3c Correct syntax errors
 - **Indicator :** 28.5c Use recognized conventions for naming identifiers and formatting code
 - **Competency :** 30.C WRITE CODE TO PERFORM ARITHMETIC CALCULATIONS
 - **Indicator :** 30.2c Interpret and construct mathematical formulas
 - **Competency :** 34.C USE SIMPLE DATA TYPES AND STRINGS
 - **Indicator :** 34.1c Declare numeric, Boolean, character and string variables
 - **Indicator :** 34.3c Declare and use constants in a program
 - **Indicator :** 34.4c Write assignment statements for initializing and modifying

variables

- **Competency** : 36.C IDENTIFY WAYS TO INPUT AND OUTPUT INFORMATION

- **Indicator** : 36.1c Provide user with means to input data on a console and/or GUI

- **Indicator** : 36.2c Use input/output statements in a program

- **Indicator** : 36.3c Assign input to variables

Assessment/Rubrics:

Rubrics

1. Taxed Paycheck
