State Income Tax

Name: _____

Complete the problems below. Show your work. Display answers using the correct notations (%, $).

1. Linda Raabe earns $15,900 annually. She is single with no dependants. What are her personal exemptions?

2. Roger Hoblet earns $79,500 annually. He is married with 3 dependants. The state tax rate is 4%. What are his personal exemptions?

   What is withheld for state tax?

3. Henry Alman earns $24,200 annually as a traffic analyst. He is married and supports 2 children. The state tax rate is 2% of taxable income. What amount is withheld yearly for state income tax?

4. Kristi Maher earns $34,940 per year. Her personal exemptions include herself and her husband. The state tax rate in her state is 4.5% of taxable income. What amount is withheld yearly for state income tax?

5. Heidi Harse is a registered nurse. She earns $29,830 a year and is single. The state income tax rate is 5% of taxable income. What is withheld yearly for state income tax?

6. What is 120% of 160?

7. What is 8% of 122?

8. What is 2 ½% of 500?

9. What is 14.6% of 200?

10. 53 is what percent of 1503?

Supply and Demand Worksheet

NAME: _____

1. Create a demand graph using the following table of values:

PRICE	QUANTITY
10	500
20	450
30	400
40	350
50	300
60	250
70	200

2. Create a supply graph using the following table of values:

PRICE	QUANTITY
10	200
20	250
30	300
40	350
50	400
60	450
70	500

3. Using the graphs above, what would be the quantity demanded at a price of $80? _____
What would be the quantity supplied at 800? _____

4. Calculate the elasticity (slope) of the following prices and quantities:

a. $P_1 = \$5$ $P_2 = \$7$ $Q_1 = 20$ $Q_2 = 10$ Slope =_____

b. $P_1 = \$2$ $P_2 = \$3$ $Q_1 = 35$ $Q_2 = 33$ Slope =_____

c. $P_1 = \$10$ $P_2 = \$20$ $Q_1 = 50$ $Q_2 = 40$ Slope =_____

d. $P_1 = \$35$ $P_2 = \$48$ $Q_1 = 15$ $Q_2 = 10$ Slope =_____

e. $P_1 = \$18$ $P_2 = \$19$ $Q_1 = 30$ $Q_2 = 15$ Slope =_____

5. Find the missing price or quantity, using the slope:

a. P_1 = \$21 P_2 =\$___ Q_1 = 85 Q_2 = 82 Slope $= -\frac{2}{3} \approx$ -0.6667

b. P_1 = \$4.50 P_2 =\$5.50 Q_1 = ___ Q_2 = 7 Slope $= -\frac{1}{3} \approx$ -0.3333

c. P_1 = \$12 P_2 =\$13 Q_1 = 20 Q_2 = ____ Slope = -1

d. P_1 = \$3.75 P_2 =\$___ Q_1 = 30 Q_2 = 22 Slope $= -\frac{9}{32} =$ -0.28125

e. P_1 = \$25 P_2 =\$30 Q_1 = ___ Q_2 = 38 Slope = -2.5

Math-in-CTE Lesson Plan

Technical Mathematics: Math-in-CTE

Lesson Title: Animate Your Class Notes **Writers:** John Barber & Suzanne Haberkorn, Joliet Township HS–West **Math Teachers:** Mr. Peterson, Edna Bazik, Kim O'Malley	Lesson #1 Vocabulary: shapes (square, circle, triangle, cube, sphere, cylinder) keys/frames tools axis degrees 2D and 3D Hertz distance time cycles

Technical Area: STEM & BMIS Academy
CTE Concept(s): 2D & 3D Animating
Math Concept(s): Frequency, Cycles, Time, Distance, Arc, Literal Equation
CCSS Math Practices & Standards: **CCSS.9-12.N.CN.1** (Perform arithmetic operations with complex numbers) **CCSS.9-12.A.REI.4** (Solve equations and inequalities in one variable) Workplace, CCSS ELA, and/or NGSS Standards:

Lesson Objective:	Take notes in a core class of student's choice and brings them to the Computer Animation lab. Class notes are animated using **3DSMax or Adobe Flash**.
Supplies Needed:	Computer with internet access 3DS Max software or Adobe Flash software Core classroom notes

THE "7 ELEMENTS"	TEACHER NOTES (Answer Key)
1. Introduce the CTE lesson. QUESTION: Did you ever think that you would actually take notes and use them? Have you ever thought about having your core class notes come to life?	1. Show students a finished project example. 2. Review the rubric guidelines. 3. Introduce the Windows Movie Maker tool that students will use to create their animation and video. 4. Demonstrate the sound recording software students use to narrate/voiceover their project. 5. Students begin working on their animation.
2. Assess students' math awareness as it relates to the CTE lesson. a. Define two dimensional (2D) and give an example. b. Define three dimensional (3D) and give an example. c. What is one drawing followed by another in a slightly different pose called? d. What is the difference between 2D and 3D Animation? e. Are flipbooks 2D or 3D? f. Is stop motion 2D or 3D? **3. Work through the math example *embedded* in the CTE lesson.** Calculate the frequency of a pendulum spinning 3 times in 7 seconds. Teacher and students will have open discussion about solving frequency and how it relates to cycles and time.	a. 2D is a flat surface with no depth. Examples: squares, circles, triangles. b. 3D is an object that has depth. Examples: A cube, cylinder, sphere. c. ANSWER: Animation d. The difference between 2D and 3D animations is: 2D animations follow the previous image with a slightly different movement, whereas 3D animations look more realistic. e. 2D f. 3D 3 full cycles / 7 seconds = **0.429 Hz** HINT: Frequency = Cycles/Time

4. **Work through *related, contextual* Math-in-CTE examples.**	http://screencast.com/t/XaAiUuHcTKoN
If the initial angle is 45 degrees, how many degrees does it take to get to 170 degrees?	170 – 45 = 125 degrees
What is the initial angle of a stable equilibrium?	0 degrees
5. **Work through the traditional math examples.**	
How many degrees make up a complete circle?	360 degrees
What is half of that circle?	180 degrees
When would you need to know degrees?	Compass & protractor measurements
6. **Students demonstrate their understanding.**	
Students present their designs to the class. Audience provides feedback for each presenter.	Share performance assessment projects. **Students create a pendulum in 2D and 3D and then animate it.** This will be produced from their notes taken in physics class.
7. **Formal assessment**.	Select sample release and retired test items to include with an animation-specific assessment.
Source of Formal Assessment Items: Sample release and retired items from ACT, ACT COMPASS, SAT,) ACT WorkKeys, Illustrative Mathematics, NAEP, PARCC), Trends in International Mathematics and Science Study (TIMSS), and teacher-constructed test items.	

Math-in-CTE Lesson Plan

Lesson Title: State Income Taxes	Lesson Number: BU09

Occupational Area: Business and Marketing
CTE Concept(s): Income Tax
Math Concepts: Percentages, proportions

Lesson Objective:	After completion of this lesson, the students should be able to compute state income tax based on a percent basis.
Supplies Needed:	Chalkboard/Whiteboard Overhead (optional) State Income Tax Worksheet
Link to Accompanying Materials:	Business/Marketing BU09 Downloads

THE "7 ELEMENTS"	**TEACHER NOTES (and answer key)**
1. Introduce the CTE lesson. Students have been working towards an understanding of "Gross and Net Income" Have students review, as a warm-up, the following definitions: gross income, net income, and taxable wages. Ask the student how many have jobs. Discuss pay versus earnings. (hopefully students will discuss tax, if not, bring it up as a difference between pay and earnings) Ask why states collect taxes (ex: education, highways, police protection, etc) Most states require employers to withhold a certain amount of pay for state taxes. In some states, the tax withheld is a percent of taxable wages.	Gross Income: The total amount of money earned within a pay period or annually. Net Income: The actual money received after all deductions (taxes, insurance, etc) have been taken out of the gross income. Taxable Wages: The amount of wages to be taxed after exemptions have been deducted. Annual Gross Pay - Exemptions = Taxable Wages
2. Assess students' math awareness as it relates to the CTE lesson. What is the definition of a percent? Give one way to find 10% of 100?	Percent: part of a whole (%) Answers vary: Multiply .10(100)=10 Use the method described below: $\frac{x}{100}=\frac{10}{100}=10$

3. Work through the math example *embedded* in the CTE lesson.

Problem: Bob's gross pay is $18,900. He is Single and claiming 1 dependant. His state has an income tax rate of 4%. How much will be withheld from his paycheck?

STEP1: Find the taxable wages. (Annual Gross pay - Exemptions)

$18,900 - $2,200 = $16,700

STEP2: Calculate the State Income Tax.

How much is withheld of $16,700 at 4%?

$$\frac{x}{\$16{,}700} = \frac{4}{100}$$

STEP3: Cross multiply to solve for x

$100 \cdot x = 4 \cdot \$16{,}700$

$100x = \$66{,}800$

$$\frac{100x}{100} = \frac{\$68{,}800}{100}$$

x = $668.

Bob will have $668 withheld this year in state taxes.

You may wish to create an overhead with the following table (it will be used in this problem and the next):

Personal Exemptions	
Single	**$1,500**
Married	**$3.000**
Each Dependant	**$700**

One way to calculate percentages is using the ratio:

$$\frac{IS}{OF} = \frac{\%}{100}$$

This will take a statement like "How much is withheld of $16,700 at 4%" and easily translate it into a proportion to solve.

IS=x (we don't know "is")

OF=$16,700

% = 4

4. Work through *related, contextual* math-in-CTE examples.

Suzie earns a gross pay of $34,000. She is married to Steve with 3 dependants. Her state income rate is 5%. How much will she have withheld in state income taxes this year?

Answer: $1,445

5. Work through *traditional math* examples.

1. What is 20% of 50?
2. 12 is what % of 32?

Answers:

1. 10
2. 37.5%

3. Where else are percentages used?	3. Examples will vary, some given: Percentage of sales (at a retail store), Percentage of ethanol in gasoline, Percentage of daily value (calories, fat, protein)
6. Students demonstrate their understanding. State Income Tax Worksheet	Answers: 1. $1500 2. $5100;$2976.00 3. $392 4. $1437.30 5. $1416.50 6. 192 7. 9.76 8. 12.50 9. 29.20 10. 3.5%
7. Formal assessment. Unit Test Question: Melvia Hoskins earns $18,000 a year as a librarian. The state income tax rate is 3.6% of taxable income. Her personal exemptions total $3,700. How much is withheld from her taxable wages for state income tax each year?	Answer: $514.80

Math-in-CTE Lesson Plan

Lesson Title: Supply and Demand	Lesson Number: BU05

Occupational Area: Business and Marketing
CTE Concept(s): Supply and Demand
Math Concepts: Slope, graphing

Lesson Objective:	After completion of this lesson, the student should be able to: Define: Supply and Demand; Create: Demand and Supply graphs; Calculate: Elasticity of demand, given a table of values of price and quantity.
Supplies Needed:	Supply and Demand Worksheet
Link to Accompanying Materials:	Business/Marketing BU05 Downloads

THE "7 ELEMENTS"	**TEACHER NOTES (and answer key)**
1. Introduce the CTE lesson. Economists and consumers in a free enterprise or market economy must decide how resources should be allocated toward their best use. In our Free Enterprise system consumers are free to choose, meaning that they can choose what they want to buy from a variety of items. One factor that has an influence on what they choose is price. Generally, the lower the price of an item, the more willing the consumer is to purchase that item. When selling an item, the opposite is true: the higher the price, the more you're willing to sell because you make more profit on each sale. Demand is defined as the amount of an item that consumers are willing and able to purchase at various prices. For example, if I had a case of your favorite type of soda here in the classroom. How many of you would be willing to purchase a can for: $.10? $.25? $.50? $.75? $1.00?	Introduce the concept of how free enterprise systems determine the price consumers are willing to pay for products. Write the price and quantity amounts on the board, as a table of values (known as a "demand schedule" in the business world): one column for price, another column for quantity of students willing to pay the price. Explain to the students that you are making a table of values. Save this information on the board for use in a moment. PRICE | QUANTITY $0.10 | etc. |

2. Assess students' math awareness as it relates to the CTE lesson.

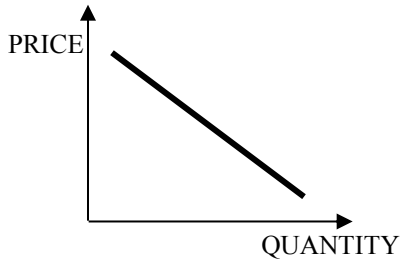
One of the important parts of demand is the elasticity of a product. This is the same as slope.

1. What is slope?

2. How do you calculate slope?

3. Given two points (ordered pairs), calculate the slope. (1, 3) (4, 7)

4. Explain in words, what this graph shows?



ANSWERS:

1. Slope (m): steepness of a line

2. m = $\frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1}$

3. $m = \frac{7-3}{4-1} = \frac{4}{3}$

4. As the quantity increases, the price decreases.

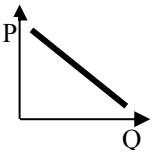
3. Work through the math example *embedded* in the CTE lesson.

Let's go back to the soda example and look at the table of values we made. Let's plot these points on a graph. Let the price be on the vertical or y-axis and the quantity on the horizontal or x-axis.

As you can see from the graph, there is an **inverse relationship** between price and quantity. Meaning as one quantity goes up, the other goes down. Will the slope of this line be negative or positive?

DEMAND GRAPH

Draw a graph on the board. The graph will hopefully look similar to this one:



Slope will be negative.

Make a table of values again.

How many cans do you predict I would sell if I raised the price to $1.50 per can?

Supply is defined as the amount of an item that suppliers or business are willing to provide or sell at various prices. Let's use our soda example again. This time, however, you're selling the soda rather than buying. Your cost per can is $.25. How man of you would be willing to sell a can of soda for: $.10? $.25? $.50? $.75? $1.00?

Let's plot these points. Use the Price on the vertical or y-axis and the quantity on horizontal or x-axis.

As you can see from the graph, there is a direct relationship between price and quantity, meaning that the higher the price, the greater the quantity you would be willing to provide or sell. Will the slope of this line be negative or positive?

According to the Law of Supply and Demand, the supply of a good will increase when demand is great and fall when demand is low.

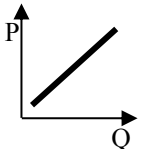
There are numerous factors that affect the demand for an item. Each factor will help to determine the ELASTICIY of demand for an item, which is the level of responsiveness of a change in quantity demanded to a change in price. The formula for elasticity of demand is $\frac{P_2 - P_1}{Q_2 - Q_1}$.

The demand of an item is considered INELASTIC if the slope is close to zero. If a given change in price causes a **smaller** proportionate

SUPPLY GRAPH

The graph should look something like this one:

Slope is positive.



Discuss how this is similar to slope. Since price is on the y-axis and quantity on the x-axis, we can look at this as rise over run.

elasticity of demand:

$$\frac{12-10}{25-35} = -\frac{2}{10} = -.20$$

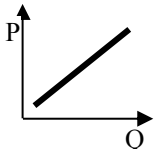
Inelastic

Elastic: Beanie Babies

Inelastic: Gas, Milk

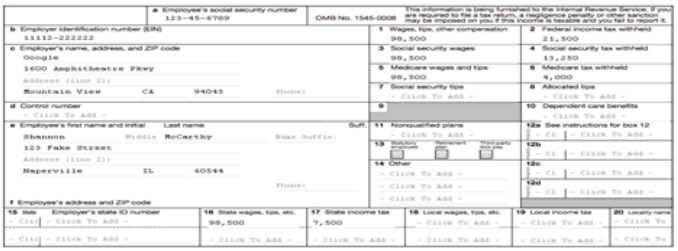
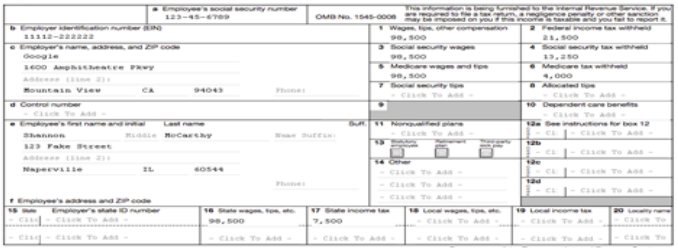
change in quantity demanded, then the demand for the good or service is said to be **inelastic**. The demand of an item is considered ELASTIC if the slope is less than negative one (-1). If a given change in price causes a **larger** proportionate change in quantity demanded, then the demand for the good or service is said to be **elastic**. EX: Let's say your favorite place to buy CDs used to charge $10, but now charge $12 for a CD. They used to sell 35 CDs a week when the price was $10, now they sell 25 CDs a week. Is this an example of elastic or inelastic demand? What are some examples of products that you would stop buying if the price increased by 25%? (Elastic demand) What are some examples of products that you would continue to buy if the price increased by 25% (Inelastic demand) Discuss the factors that affect Demand and Elasticity of Demand (Consumer preferences, consumer buying power, availability of substitute products, price of substitute item	
4. Work through *related, contextual* math-in-CTE examples. Find the elasticity of demand. Is it elastic or inelastic? 1. The price of your favorite type of shirt from Gap was $22, and the Gap sold 28 per week. Now the price is $25 for the shirt, and the Gap is selling 16 per week. 2. Last year your mom bought orange juice for $5 a gallon, and	1. $\frac{25-22}{16-28} = -\frac{3}{12} = -.25$ inelastic 2. $\frac{6-5}{43-45} = -\frac{1}{2} = -.5$ inelastic

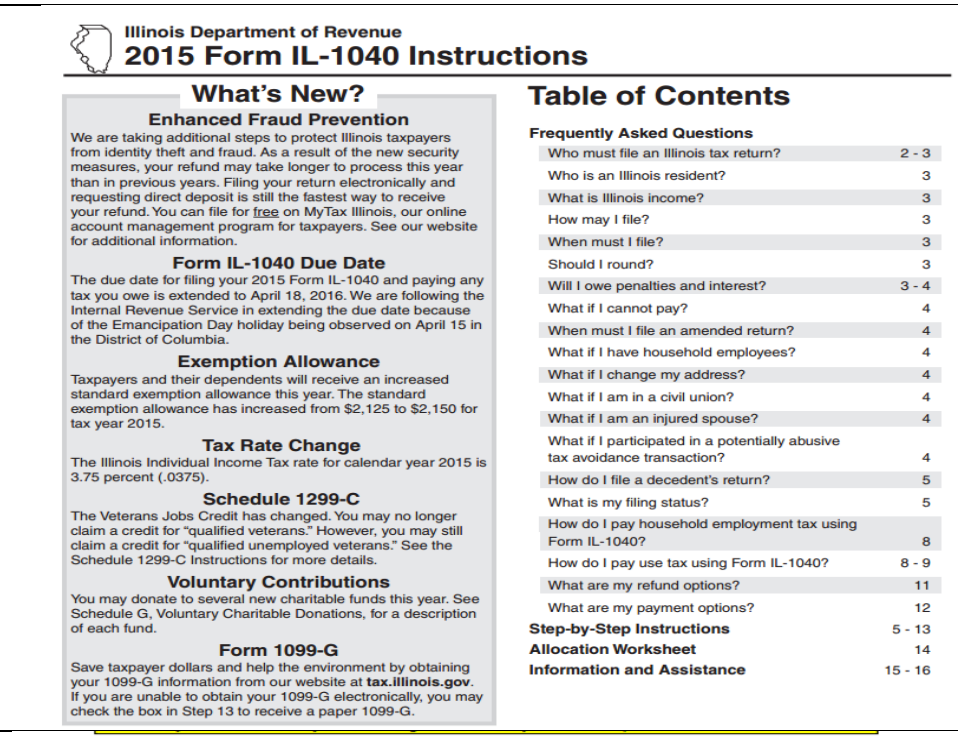
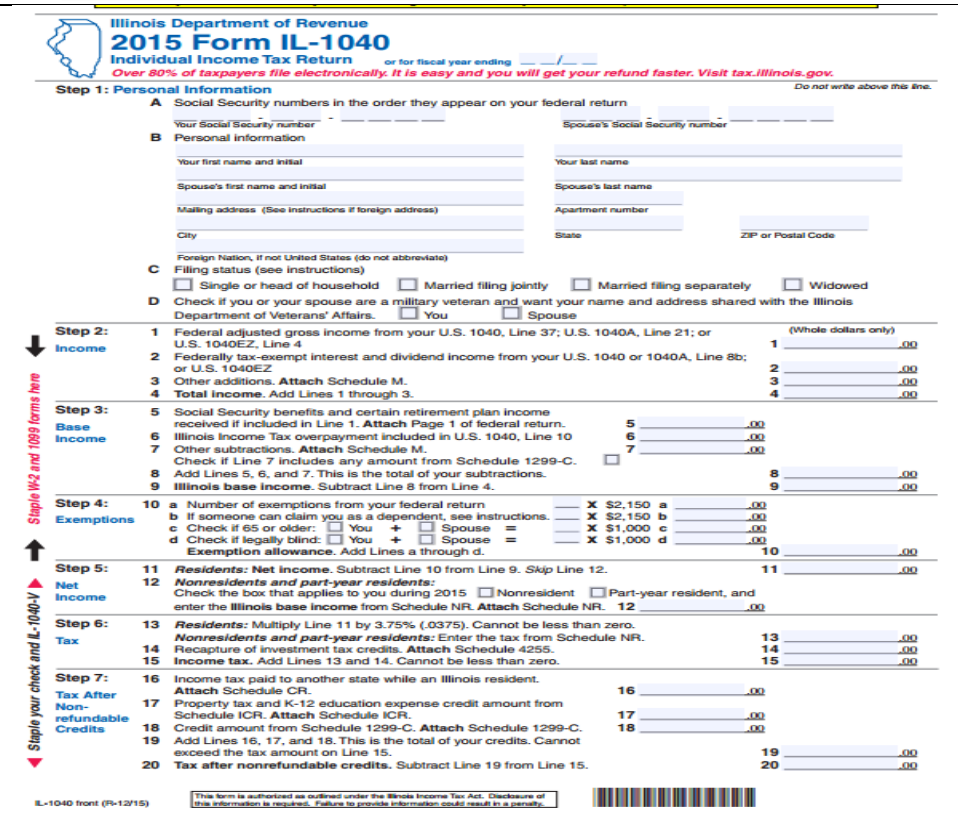
bought 45 gallons for the year. This year the price is $6 a gallon for the same type of orange juice, and she only bought 43 gallons. 3. P_1 = \$31 Q_1 = 15; P_2 = \$42, Q_2 = 12 You can also manipulate the elasticity formula, if you're given the elasticity or slope amount, to find a missing price or quantity amount. For example, if P1=\$31, Q1=65, Q2=62, and the elasticity or slope amount equals -0.667, what is P1? Plug the values into the formula and solve for the missing item.	3. $\frac{42-31}{12-15} = -\frac{11}{3} \approx -3.67$ elastic $\frac{P_2 - 31}{62-65} = -.667$ $\frac{P_2 - 31}{-3} = -.667$ Multiply both sides by -3 $P_2 - 31 = 2$ Add 31 to both sides P_2 = 33
5. Work through *traditional math* examples. Find the slope for the line passing through the following two points. 1. (8, 2) and (16, 5) 2. (25, 5) and (23, 6) 3. (45, 50) and (30, 60)	1. $\frac{5-2}{16-8} = \frac{3}{8} = .375$ 2. $\frac{6-5}{23-25} = -\frac{1}{2} = -.5$ 3. $\frac{60-50}{30-45} = -\frac{10}{15} \approx -.667$
6. Students demonstrate their understanding. See Attached Worksheet	ANSWERS: #4 5 7 20 10 -0.2 2 3 35 33 -0.5 10 20 50 40 -1 35 48 15 10 -2.6 18 19 30 15 -0.06667 #5 21 23 85 82 -0.66667 4.5 5.5 10 7 -0.33333

	12 13 20 19 -1 3.75 6 30 22 -0.28125 25 30 40 38 -2.5
7. Formal assessment. Unit Test Questions: 1. Explain in words what is happening to the graph: 2. Is the graph an example of supply or demand? 3. Your favorite pair of jeans used to cost $35, the store isn't sure how many pairs they would sell per day at this rate. The store has raised the price to $38, and now sells 27 pairs of jeans per day. If you know that the elasticity of demand (slope) is -1.5, how many pairs of jeans did the store sell at the lower price? 4. 4. Is this an example of elastic or inelastic demand?	1. As the quantity increases, the price increases. 2. Supply graph.  3. $\frac{38-35}{27-Q_1}=-1.5$ $\frac{3}{27-Q_1}=-1.5$ $3=-1.5(27-Q_1)$ $3=-40.5+1.5Q_1$ Distributive Property $43.5 = 1.5Q_1$ $\frac{43.5}{1.5}=\frac{1.5Q_1}{1.5}$ $29 = Q_1$ 4. Elastic

Math-in-CTE Lesson Plan
TAXES – Illinois State 1040 EZ Form

Lesson Title: Completing an Illinois 1040 EZ Tax Form for Janet Jackson **Writers:** Shannon McCarthy, Adam Brown, Aaron Brown, Edna Bazik, and *Donna Oneil*	**Lesson #1** **Vocabulary:** Computation, equation, integer, precision, problem-solving, percentage, ratio, decimal, financial literacy, reasoning, thinking critically, allowance, exemption, deduction
Technical Area: Business/ Cooperative Work Training	
CTE Concept(s): Reading a tax form and instructions, reading a W2 form, reading tax tables, computing the Illinois State income tax percentage (3.75%; .0375) completing a 1040 Illinois State Tax Form, using tax terms and forms (i.e., W-2, W-4, 1040 EZ, 1040 EZ tax instructions), sending completed forms to appropriate location	
Math Concept(s): Balance numbers and equations, calculate percentages, read a tax table, use order of operations, use decimals	
Math Practices: CC.K-12.MP.1 (**Problem Solve**), CC.K-12.MP.2 (**Reason Abstractly**), CC.K-12.MP.3 (**Critique Reasoning of Others**), CC.K-12.MP.4 (**Model**) **Common Core Standards:** CC.6.NS.1 (**Interpret and compute quotients of fractions**) CC.6.NS.3 (**Fluently add, subtract, multiply and divide multi-digit decimals using the standard algorithm for each operation**) CC.6.EE.1 (**Write and evaluate numerical expressions involving whole-number exponents**) CC.7.RP.3 CC.9-12.N.Q.1 (**Reason Quantitatively and use units to solve multi-step problems**, CC.9-12.S.MD.5 (**Use Probability to evaluate outcomes of decisions**), CC.9-12.S.MD.1-2 (**Calculate expected values and use them to solve problems**) **NGSS Standards:** K-2-ETS1-3. (**Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs**.), 3-5-ETS1-2. (**Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem**.), HS-ETS1-3. (**Evaluate a solution to a complex real-world problem**.)	
Lesson Objectives:	**At the Conclusion of this lesson, students will be able to:** 1. Apply elementary mathematics, (i.e., skills such as factoring; order of operations; calculations with fractions, decimals, and percentages; measurement and capacity conversion; and pre-algebra) 2. Compute the standard deduction. 3. Read their W2, and select the numbers needed to complete IL 1040 Illinois EZ Form. 4. Interpret each line on the IL 1040 EZ Form. 5. Describe how each line impacts the part of the math tax problem. 6. Determine whether they will receive a refund or owe money to the State of Illinois.

Supplies Needed:	1. IL 1040 EZ Form 2. W-2 Form 3. Calculator 4. IRS.Gov Website
	TEACHER NOTES
1. Introduce the CTE Lesson.	Define the following: The main concepts from Chapter 23: ■ W-2 Form, W-4 Form, deduction, exemption, tax table, IL-1040EZ form and other main concepts
2. Assess to what degree students understand the impact of the W-2 Form.	1040 TAX **MATERIALS: YOUR W-2s ARE BELOW. ALONG WITH IT YOU HAVE A 1040 EZ FORM, A 1040 IL TAX FORM, AND THE 1040EZ TAX INSTRUCTIONS. YOUR ASSIGNMENT IS TO USE THE W-2 TO COMPLETE THE TAX FORMS BEFORE YOU SEND THEM INTO THEIR RESPECTIVE GOVERNMENT AGENCY. MAKE SURE TO USE THE CORRECT ADDRESS WHEN SENDING YOUR TAX FORMS.** Directions: 1. THE W-2 BELOW IS YOUR **FEDERAL W-2 FORM**. USE THE **1040 EZ** TO COMPLETE YOUR FEDERAL TAXES. SEND IT TO THE IRS. MAKE SURE YOU ADDRESS THE ENVELOPE CORRECTLY AND INCLUDE THE W-2 IN THE ENVELOPE WITH YOUR 1040 EZ FORM. LINE 5 EXEMPTION - $10,300  2. THE W-2 BELOW IS YOUR **STATE W-2 FORM**. USE THE IL 1040 FORM TO COMPLETE YOUR STATE TAXES. SEND IT TO THE IRS. MAKE SURE YOU ADDRESS THE ENVELOPE CORRECTLY AND INCLUDE THIS W -2 IN THE ENVELOPE WITH YOUR IL 1040 FORM. LINE 5 EXEMPTION - $2,150 

3. Review the CTE math applications. (Understanding the 1040 EZ Instructions)	
4. Work through the related, contextual MCTE examples. (Using the IL 1040 Tax Form to compute taxes owed or refunded.)	
5. Work through the traditional math examples. (i.e., Interpret instructions to complete each line of the tax form—use math equations to complete the tax form.)	Step 1 – Include your personal information Step 2 – Find your income from your W-2 Form Step 3 – Include any additional income and add your income together Step 4 – Multiply and add up your exemptions Step 5 – Subtract your income from your exemption amount Step 6 – Multiple your net income by the state tax percentage (3.75%) Step 7 – Subtract your actual taxes from Line 17 on your W-2 Step 8 – If your W-2 amount is greater than your actual tax amount you will receive

Illinois Department of Revenue

2015 Form IL-1040 Instructions

What's New?

Enhanced Fraud Prevention

We are taking additional steps to protect Illinois taxpayers from identity theft and fraud. As a result of the new security measures, your refund may take longer to process this year than in previous years. Filing your return electronically and requesting direct deposit is still the fastest way to receive your refund. You can file for free on MyTax Illinois, our online account management program for taxpayers. See our website for additional information.

Form IL-1040 Due Date

The due date for filing your 2015 Form IL-1040 and paying any tax you owe is extended to April 18, 2016. We are following the Internal Revenue Service in extending the due date because of the Emancipation Day holiday being observed on April 15 in the District of Columbia.

Exemption Allowance

Taxpayers and their dependents will receive an increased standard exemption allowance this year. The standard exemption allowance has increased from $2,125 to $2,150 for tax year 2015.

Tax Rate Change

The Illinois Individual Income Tax rate for calendar year 2015 is 3.75 percent (.0375).

Schedule 1299-C

The Veterans Jobs Credit has changed. You may no longer claim a credit for "qualified veterans." However, you may still claim a credit for "qualified unemployed veterans." See the Schedule 1299-C Instructions for more details.

Voluntary Contributions

You may donate to several new charitable funds this year. See Schedule G, Voluntary Charitable Donations, for a description of each fund.

Form 1099-G

Save taxpayer dollars and help the environment by obtaining your 1099-G information from our website at **tax.illinois.gov**. If you are unable to obtain your 1099-G electronically, you may check the box in Step 13 to receive a paper 1099-G.

Table of Contents

Illinois Department of Revenue

2015 Form IL-1040

Individual Income Tax Return or for fiscal year ending __ __/__ __

Over 80% of taxpayers file electronically. It is easy and you will get your refund faster. Visit tax.illinois.gov.

Do not write above this line.

Step 1: Personal Information

A Social Security numbers in the order they appear on your federal return
Your Social Security number — Spouse's Social Security number

B Personal information
Your first name and initial — Your last name
Spouse's first name and initial — Spouse's last name
Mailing address (See instructions if foreign address) — Apartment number
City — State — ZIP or Postal Code
Foreign Nation, if not United States (do not abbreviate)

C Filing status (see instructions)
☐ Single or head of household ☐ Married filing jointly ☐ Married filing separately ☐ Widowed

D Check if you or your spouse are a military veteran and want your name and address shared with the Illinois Department of Veterans' Affairs. ☐ You ☐ Spouse

Staple W-2 and 1099 forms here

Staple your check and IL-1040-V

			(Whole dollars only)
Step 2: Income	1	Federal adjusted gross income from your U.S. 1040, Line 37; U.S. 1040A, Line 21; or U.S. 1040EZ, Line 4	1 .00
	2	Federally tax-exempt interest and dividend income from your U.S. 1040 or 1040A, Line 8b; or U.S. 1040EZ	2 .00
	3	Other additions. **Attach** Schedule M.	3 .00
	4	**Total income.** Add Lines 1 through 3.	4 .00
Step 3: Base Income	5	Social Security benefits and certain retirement plan income received if included in Line 1. **Attach** Page 1 of federal return.	5 .00
	6	Illinois Income Tax overpayment included in U.S. 1040, Line 10	6 .00
	7	Other subtractions. **Attach** Schedule M. Check if Line 7 includes any amount from Schedule 1299-C. ☐	7 .00
	8	Add Lines 5, 6, and 7. This is the total of your subtractions.	8 .00
	9	**Illinois base income.** Subtract Line 8 from Line 4.	9 .00
Step 4: Exemptions	10	a Number of exemptions from your federal return ___ X $2,150 a .00 b If someone can claim you as a dependent, see instructions. ___ X $2,150 b .00 c Check if 65 or older: ☐ You + ☐ Spouse = ___ X $1,000 c .00 d Check if legally blind: ☐ You + ☐ Spouse = ___ X $1,000 d .00 **Exemption allowance.** Add Lines a through d.	10 .00
Step 5: Net Income	11	***Residents:*** **Net income.** Subtract Line 10 from Line 9. *Skip* Line 12.	11 .00
	12	***Nonresidents and part-year residents:*** Check the box that applies to you during 2015 ☐ Nonresident ☐ Part-year resident, and enter the **Illinois base income** from Schedule NR. **Attach** Schedule NR.	12 .00
Step 6: Tax	13	***Residents:*** Multiply Line 11 by 3.75% (.0375). Cannot be less than zero. ***Nonresidents and part-year residents:*** Enter the tax from Schedule NR.	13 .00
	14	Recapture of investment tax credits. **Attach** Schedule 4255.	14 .00
	15	**Income tax.** Add Lines 13 and 14. Cannot be less than zero.	15 .00
Step 7: Tax After Non-refundable Credits	16	Income tax paid to another state while an Illinois resident. **Attach** Schedule CR.	16 .00
	17	Property tax and K-12 education expense credit amount from Schedule ICR. **Attach** Schedule ICR.	17 .00
	18	Credit amount from Schedule 1299-C. **Attach** Schedule 1299-C.	18 .00
	19	Add Lines 16, 17, and 18. This is the total of your credits. Cannot exceed the tax amount on Line 15.	19 .00
	20	**Tax after nonrefundable credits.** Subtract Line 19 from Line 15.	20 .00

IL-1040 front (R-12/15)

This form is authorized as outlined under the Illinois Income Tax Act. Disclosure of this information is required. Failure to provide information could result in a penalty.

	a refund. Step 9 - If your W-2 amount is less than your actual tax amount you will owe the government.

6. Students demonstrate their understanding.

a. Control number		OMB No. 1545-0008	**Safe, accurate, FAST! Use E -FILE**	Visit IRS website at www.irs.gov/efile.
b. Employer identification number (EIN) **10-0034589**			1 Wages, tips, other compensation **$10,180.00**	2 Federal income tax withheld **$126.40**
c. Employer's name, address, and ZIP code **Jewel Food Stores** **126 E. Boughton Road** **Bolingbrook, IL 60440**			3 Social security wages **$7,182.00**	4 Social security tax withheld **$445.28**
			5 Medicare wages and tips **$7,182.00**	6 Medicare tax withheld **$104.14**
			7 Social security tips	8 Allocated tips
d. Employee's social security number **987-43-2165**			9 Advance EIC payment	10 Dependent care benefits
e. Employee's first name and initial last name **Janet Jackson** **176 Annie Glidden Road** **Bolingbrook, IL 60440** f Employee's address and ZIP code			11 Nonqualified plans	12a See instructions for box 12
			13	12b
			14 Other	12c
				12d

15 State	Employer's state ID number	16 State wages, tips etc	17 State income tax	18 Local wages, tips	19 Local income	20 Locality
IL	**10-0034589**	**$7,182.00**	**$215.46**			

a Control number		OMB No. 1545-0008	**Safe, accurate, FAST! Use E-FILE**	Visit IRS website at www.irs.gov/efile.
b Employer identification number (EIN) **10-0067543**			1 Wages, tips, other compensation **$3,815.00**	2 Federal income tax withheld **$88.90**
c Employer's name, address, and ZIP code **710 Book Store** **710 Illinois Avenue** **Carbondale, IL 62901**			3 Social security wages **$3,185.00**	4 Social security tax withheld **$112.16**
			5 Medicare wages and tips **$3,185.00**	6 Medicare tax withheld **$26.23**
			7 Social security tips	8 Allocated tips
d Employee's social security number **987-43-2165**			9 Advance EIC payment	10 Dependent care benefits
e Employee's first name and initial last name **Janet Jackson** **176 Annie Glidden Road** **Bolingbrook, IL 60440** f Employee's address and ZIP code			11 Nonqualified plans	12a See instructions for box 12
			13	12b
			14 Other	12c
				12d

15 State	Employer's state ID number	16 State wages, tips etc	17 State income tax	18 Local wages, tips	19 Local income	20 Locality
IL	**10-0067543**	**$1,809.00**	**$54.27**			

PAYER'S name, street address, city, ZIP code, and telephone number **First State Bank** **300 Burnham Ave** **Calumet City, IL 60409**	Payer's RTN (Optional)	OMB No. 1545-0112 2015 Form **1099-INT**	**Interest Income**
PAYER'S Federal identification number **10-0000518**	Recipient's identification number **987-43-2165**	1 Interest income not included in box 3 **$62.00**	**Copy B** **For Recipient** This is important tax information and is being furnished to the Internal Revenue Service. If you are required to file a return, a negligence penalty or other sanction may be imposed on you if this income is taxable and the IRS determines that it has not been reported.
RECIPIENT'S name **Janet Jackson** Street address (including apt. no) **176 Annie Glidden Road** City, state, and ZIP code **Bolingbrook, IL 60440**	2 Early withdrawal penalty $	3 Interest on U.S. Savings Bonds and Treas. obligations $	
	4 Federal income tax withheld $	5 Investment expenses $	
	6 Foreign tax paid $	7 Foreign country or U.S. possession	
Account number (see instructions)			

Scenario for Janet Jackson:

1. Janet is single.
2. She works part-time, graduated from Bolingbrook High School in June of 2014 and recently graduated from Southern Illinois University, Carbondale
3. She lives on her own and cannot be claimed as a dependent.
4. She is 23 years old.
5. She has no unemployment compensation, no EIC, and no Alaska Permanent Fund to claim.
6. She cannot itemize and is eligible to use a form 1040EZ.

7. Formal Assessment- Performance Based Preparation of an IL 1040EZ income tax form and create a formative assessment.	Complete a performance-based assessment utilizing a skills assessment using real world skills. Also finalize a formal summative assessment. (Paper and Pencil assessment) Which amount of your gross pay is deducted from your paycheck for FICA tax? a. 15.30% b. 7.65% c. 6.20% d. 1.45% How many "quarters" does an employee have to work in order to qualify to collect full social security during retirement? a. 10 b. 20 c. 30 d. 40 Which amount of your gross pay is deducted from your paycheck for FICA tax? a. 15.30% b. 7.65% c. 6.20% d. 1.45% ***Source of Formal Assessment Items:*** *BHS professional Math teacher. ACT WorkKeys, Career Cruising, Partnership for Assessment of Readiness for College and Careers (PARCC), etc. [NOTE: Any users of the online tool "Test Prep Review" would select the "ACT" citation as their source.]*

Math-in-CTE Lesson Plan

Technical Mathematics

Lesson Title:	Aligning Objects on a Graphical User Interface (GUI)	Lesson #1
Writers:	Susan Palis and Ryan Visser, Lockport Township High School	

Technical Area:	Business
CTE Concept:	Creating an Effective Graphical User Interface
Math Concepts:	Modeling and Symmetry

CCSS Math Practices and Standards:

CC.K-12.MP.4 Model with mathematics

CC,K-12.MP.5 Use appropriate tools strategically

Lockport Township High School College and Career Application's Department Student Goal and Standard:

Goal: Apply problem-solving techniques.

Standard: Apply math and reading principles to problem-solving.

Lesson Objective:	**Demonstrate how to align objects** (labels, picture boxes, and buttons) **on a Visual Basic form.**
Supplies Needed:	**Visual Studio 2013** **Hotel Room Selection Walkthrough – Part 1**

THE "7 ELEMENTS"	**TEACHER NOTES** (Plus Answer Key)
1. Introduce the CTE lesson. a. Properly creating the user interface is important because it is what the user sees. Today we are going to be aligning the objects on the interface we created for the Hotel Room Selection program. b. Make sure your **form** is showing on the workspace. Now look at the **Format** menu. c. At this point, you will notice that none of the commands can be selected since they are used to format specific objects.	a. Quick review of the **key points to a successful user interface**. b. After locating the **Format** menu, notice the commands are displayed in submenus (i.e., Align, Make Same Size, and Center in Form). c. Now, select the Align submenu and point to each command starting with the first one. i. What is the first one? **Align lefts** ii. And the second? **Align centers** iii. Continue – **Rights, Tops, Middles, Bottoms, To Grid** d. Now, let's move to the second submenu, Make Same Size: **Width, Height, Both, Size to Grid** e. Let's go to the Center in Form submenu: **Horizontally** and **Vertically** f. Notice with Visual Studio, there is not a default alignment.

2. Assess students' *math awareness* as it relates to the CTE lesson. a. What do you know about alignment? b. Why is it important to properly align objects on a Visual Basic form? c. How might the alignment in Visual Basic be similar to what you have seen in programs, such as Microsoft Word? d. How might the alignment in Visual Basic be different from what you have seen in programs, such as Microsoft Word?	Alignment tells us that something is arranged in a straight line or in a relative position. Think of one object, such as a picture, can be even on the **left**, a second one can be even in the **center**, and a third one can be even on the **right**. Equal distance from a border is the term **symmetry** (balance) in math.
3. **Work through the math example *embedded* in the CTE lesson.** **Note:** The following steps are completed after students add several objects to the user interface, as stated previously in the Hotel Room Selection Walkthrough–Part 1. Make two objects the same size. a. After adding the second picture box from the previous step(s) in the walkthrough, notice that the picture boxes are different sizes. b. Click the first picture box, picStandardRoom, hold down the Ctrl key, and click on the second picture box, picDeluxeRoom. c. Go to Format → Make Same Size → Both	Walk around to make sure the students are selecting the correct objects and give feedback, as needed.
4. **Work through *related, contextual* math-in-CTE examples.** You will now make the five buttons the same size. a. Show the screenshot on the screen, and read and follow the directions as given in the walkthrough.	Provide a screenshot showing what the finished form should look like: • Click the button with the most text (Standard Room) • Expand the button so all of the text fits • While holding down the Ctrl key, select the other four buttons • Go to Format → Make Same Size → Both

5. **Work through the *traditional math* examples.** The Hotel Room Selection program should still be open. a. Click on the heading label and center the label **horizontally** on the form. b. Click on the instructions label and center the label **horizontally** on the form. c. Click on the confirmation label and center the label **horizontally** on the form. d. Click on the Exit Window button and center the button **horizontally** on the form. e. The students will be continuing with the walkthrough.	Walk around to make sure the students are selecting the correct objects and give feedback, as needed.
6. **Students *demonstrate* their understanding.** Students complete three of six programs from the Case Programming Assignments. a. Read and follow the given directions carefully.	Provide screen shots on the class Haiku page showing what two of the programs might look like.
7. **Formal assessment**. Due to the nature of this class, the formal assessment of creating an effective user interface takes place when the students complete the programming portion of the test. Source of Formal Assessment Items: Sample release and retired items from ACT, ACT COMPASS (including Joliet Junior College (JJC) Sample Release Items), ACT Explore, ACT WorkKeys, Illustrative Mathematics, Career Cruising, National Assessment of Educational Progress (NAEP), Partnership for Assessment of Readiness for College and Careers (PARCC), Trends in International Mathematics and Science Study (TIMSS), and teacher-constructed test items.	NOTE: Odd computers complete a program that allows the user to choose his/her favorite Chicago landmark from a list. Even computers complete a program that allows the user to choose his/her favorite Chicago sports team. Points within the rubric determine whether or not the students used symmetry to create an effective graphical user interface.

Math-in-CTE Lesson Plan

Technical Mathematics

Lesson Title:	A Quick Review of Reality Store	Lesson #3
Writers:	Susan Palis and Ryan Visser, Lockport Township High School	

Technical Area:	Business
CTE Concept:	Maintain a Monthly Budget
Math Concepts:	Addition, Subtraction, Multiplication and Division Operations

CCSS Math Practices and Standards:

CC.K-12.MP.4	Model with mathematics
CC.K-12.MP.5	Use appropriate tools strategically
CC.3.OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
CC.7.EE	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
CC.5.NBT	Perform operations with multi-digit whole numbers and with decimals to hundredths.

Lockport Township High School College and Career Application's Department Student Goal and Standard:

Goal: Apply problem-solving techniques.

Standard: Apply math and reading principles to problem-solving.

Lesson Objective:	**Demonstrate what life might be like at the age of 25.**
Supplies Needed:	**Reality Store Card** **Reality Store Cups** (married v. unmarried; spouse's occupation; number of children—based on marital status) **Calculator**

THE "7 ELEMENTS"	**TEACHER NOTES** (Plus Answer Key)
1. **Introduce the CTE lesson.** a. Today we are going to review the front side of the **Reality Store card**, (which is what the freshmen complete prior to entering the Reality Store event). b. Make sure you have a career choice in mind. c. After receiving the **yellow Reality Store card**, write down your name and career choice; however, do not proceed until further instructions are given.	a. Quick review of the importance of **maintaining a monthly budget**.

2. Assess students' *math awareness* as it relates to the CTE lesson. a. What might life be like at the age of 25? b. What factors might affect one's budget? c. What might a 25-year-old have to budget for? d. At your age, what do you have to budget for?	As these are open-ended questions, the answers will vary.
3. **Work through the math example *embedded* in the CTE lesson.** Students record the **gross yearly income** from Career Cruising. a. After recording the gross yearly income, they **calculate** the **gross monthly income**. (NOTE: Round to the nearest dollar.) b. **Calculate** the **monthly withholdings** by **multiplying** the gross monthly income by 33%. c. **Calculate** the **net income.** (gross income – monthly withholdings) d. Then, students choose from a cup as to whether or not they are married or single and if they have kids. (NOTE: Both "married" and "single" students can have zero, one, or two children.)	Walk around to make sure the students writing the correct code and give feedback, as needed.
4. **Work through *related, contextual* math-in-CTE examples.** Married students pull their spouse's occupation and gross monthly income from a cup. From there, the student **calculates** his/her spouse's **monthly withholdings** and **net income**. *(Note:* Some students may pull a blank occupation piece, which means his/her spouse is unemployed.)	After a few minutes, go over an example calculation for net income to ensure the students have the right answer.
5. **Work through the *traditional math* examples.** Students **calculate** the **income** for Reality Store, which is the amount used for the monthly budget. a. **Add** the student's net income and the spouse's net income. The total is the **combined** net income. b. **Multiply** the **combined net income** by 5%, which will be automatically put into savings. c. **Calculate** the income for Reality Store by **subtracting** savings from the combined net income.	Walk around to make sure the students are following the directions and give feedback, as needed. Afterwards, go through an example calculation for the Reality Store income.

6. **Students demonstrate their understanding.** Students create a program that allow a freshman to go through Reality Store. a. Read and follow the given directions carefully.	Provide an example of what the program might to look like. Additionally, walk around to make sure students are working and help them, as needed.
7. **Formal assessment**. The formal assessment takes place once the students are finished with the program through the use of a **rubric**. (Note: The program is the final project for the class.) Source of Formal Assessment Items: Sample release and retired items from ACT, ACT COMPASS (including Joliet Junior College (JJC) Sample Release Items), ACT Explore, ACT WorkKeys, Illustrative Mathematics, JJC CAD Dual Credit proprietary test items, Career Cruising, National Automotive Technicians Education Foundation (NATEF), National Assessment of Educational Progress (NAEP), Partnership for Assessment of Readiness for College and Careers (PARCC), Trends in International Mathematics and Science Study (TIMSS), and teacher-constructed test items.	Notes: Students upload the program to their folder on the Google drive for periodic feedback. Points within the rubric determine whether or not the students used the correct math techniques throughout the program.

Math-in-CTE Lesson Plan

Technical Mathematics

Lesson Title:	Setting Constants within Visual Basic Code	Lesson #2
Writers:	Susan Palis and Ryan Visser, Lockport Township High School	

Technical Area:	Business
CTE Concept:	Using Constants in Code
Math Concept:	Fixed Values

CCSS Math Practices and Standards:

CC.K-12.MP.4 Model with mathematics

CC.K-12.MP.5 Use appropriate tools strategically

CC.9-12.NQ.1 Use units as a way to understand problems and to guide the solution of multi-step problems.

Lockport Township High School College and Career Application's Department Student Goal and Standard:

Goal: Apply problem-solving techniques.

Standard: Apply math and reading principles to problem-solving.

Lesson Objective:	**Demonstrate how constant variables can be used within a program's code.**
Supplies Needed:	**Visual Studio 2013** **Wood Cabinet Estimate Walkthrough – Part 2**

THE "7 ELEMENTS"	**TEACHER NOTES** (Plus Answer Key)
1. **Introduce the CTE lesson.** a. Today we are going to be declaring constant variables within the code for the Wood Cabinet Estimate program. b. Make sure your **code** is showing on the workspace. c. After typing the introductory comments, notice that it is indicated how much each type of wood costs. These prices will become constant variables within our code, which means they will not change regardless of what the user enters in the interface.	a. Quick review of the importance of **putting comments within the code**. b. Review the location of the **(General) list box** and the **(Declarations) list box**.

2. Assess students' *math awareness* as it relates to the CTE lesson. a. What do you know about constants? b. Why is it important to use constants within programming code? c. What other programs have we done in which constants have been used?	When the value in a program will remain the same throughout the program's execution, a constant variable should be used. Constants are important because the user cannot change the value of specific variables, such as the cost of each type of wood in this program. A constant was used in the Digital Downloads program, where the cost per download was $0.99.
3. **Work through the math example *embedded* in the CTE lesson.** Declare variables and constants within a program. a. Position the insertion point inside the Click event handler by clicking between Private Sub btnCalculateCost_Click… and End Sub. b. Write the event handler comment, as indicated in the walkthrough. c. Press Enter twice after the comment to leave a blank space between the comment and the first line of code. d. Declare the following variables: i. Dim decFeet As Decimal ii. Dim decCostPerFoot As Decimal iii. Dim decCostEstimate As Decimal **Note:** These are variables because the value can change	Walk around to make sure the students are writing the correct code and give feedback, as needed.
4. **Work through *related, contextual* Math-in-CTE examples.** Declare the following constants using the assigned values given in Step 14 of the walkthrough. a. decPineCost b. decOakCost c. decCherryCost	After a few minutes, go over what the code should look like: • Dim decPineCost As Decimal = 150D • Dim decOakCost As Decimal = 200D • Dim decCherryCost As Decimal = 350D

5. Work through the ***traditional math*** examples. The Wood Cabinet Estimate program should still be open. **Note:** The following steps will be completed after a portion of the code is set up to determine if the user is entering a numeric value and if the value for feet is greater than zero. Additionally, these are given to the students in the walkthrough. a. Using the If…Then…ElseIf structure, write the statements to identify the checked radio button and place the appropriate cost in the decCostPerFoot variable by entering the following code: ' Determine the cost per foot of wood If radPine.Checked Then decCostPerFoot = decPineCost ElseIf radOak.Checked Then decCostPerFoot = decOakCost ElseIf radCherry.Checked Then decCostPerFoot = decCherryCost Note: There should be three End If statements after this block of code b. Press Enter twice after the first End If statement c. Write the statements to calculate and display the cost estimate in currency format by entering the following code: ' Calculate and display the cost estimate decCostEstimate = decFeet * decCostPerFoot lblCostEstimate.Text = decCostEstimate.ToString() d. The students will be continuing with the walkthrough.	Walk around to make sure the students are following the directions and give feedback, as needed.
6. Students **demonstrate** their understanding. Students will be completing Cow's Coffee Supply program. a. Read and follow the given directions carefully.	Provide a screen shot within the directions of what the program is to look like. Additionally, walk around to make sure students are working and help them, as needed.

7. **Formal assessment**. A(n) _____ represents a location in computer memory that can change values as the code executes. a. expression b. argument c. constant d. variable A(n) _____ represents a location in computer memory, but its value cannot change during execution. a. expression b. argument c. constant d. variable Additional formal assessments of using constants and variables will take place with the following programs: Kim's Candies, Maggie and Lucie's Dog Clinic, and the Case Programming Assignments – Unit 2, Part 2. Source of Formal Assessment Items: Sample release and retired items from ACT, ACT COMPASS (including Joliet Junior College (JJC) Sample Release Items), ACT Explore, ACT WorkKeys, Illustrative Mathematics, Career Cruising, National Assessment of Educational Progress (NAEP), Partnership for Assessment of Readiness for College and Careers (PARCC), Trends in International Mathematics and Science Study (TIMSS), and teacher-constructed test items.	**Answers:** **d. variable** **c. constant** Note: Specific points within the rubrics for the programs will determine whether or not the students have used variables and constants correctly within their code by testing the program with random data, as chosen by the teacher.