Math-in-CTE Lesson Plan
Technical Mathematics

Lesson Title: Consumer Math Writers: Katie Dykas	Lesson #1

Technical Area: Career Internship	
CTE Concept(s): Everyday Consumer Math	
Math Concept(s): Modeling	
CCSS Math Practices & Standards: CC.K-12.MP.4 Model with mathematics. CC.K-12.MP.8 Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. **Workplace, CCSS ELA, and/or NGSS Standards**: **CC.6.RP.3c –** Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole given a part and the percent **CC.7.EE.4 –** Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities	

Lesson Objective:	Students independently calculate:
	     > Layaway fees,
	     > Use of multiple coupons,
	     > Percentage rates to tip wait staff, and
	     > Pay credit card bills with various APR.

Supplies Needed:	Internet access to sales at certain stores, dinner receipts, an old Kohl's Cash coupon, white board, Elmo machine, and calculators.

THE "7 ELEMENTS"	TEACHER NOTES
1. Introduce the CTE lesson. • Ask: "Does anyone here like to shop?" • Next: Who likes to save $? • Then: Turn on Elmo projector and place either my credit card bills, ads from the Sunday paper, an app on my iPad, an email offer or something that shows different coupons on screen. (USE REAL WORLD EXAMPLES and use coupons that students can relate to and may have seen or used before.)	
2. Assess students' math awareness as it relates to the CTE lesson. a. Write "$30.00" on the board. b. Ask: What is 10% of $30.00? c. Why is it important to know this before you pay for items? d. Do registers always work correctly? Just because the register says that is the price, does that mean the *price is right*?	So 10% = $3.00 $30.00 Moving the decimal point 1 place to the left is the same as dividing by 100. Model ways to quickly know what you owe and whether the register is working correctly.

3. Work through the math example *embedded* in the CTE lesson. Payment Plans, Percentages, etc. (Work a few problems with students and then students calculate the remainder independently.)	**Quiz A** (See Attached: Select one section (e.g., Layaway, or Using a Coupon, etc.), to work through with the students. Then, use the entire quiz in Step 7.)
4. Work through *related, contextual* math-in-CTE examples. (Work a few problems with students and then students calculate the remainder independently.)	**Quiz B** (See Attached: Select one section (e.g., Tipping, or Using a Charge Account, etc.), to work through with the students. Then, use the entire quiz in Step 7.)
5. Work through the *traditional math* examples. Assess students using sample release norm-referenced test items.	Select sample release norm-referenced test items (e.g., SAT, ACT, etc.) to practice concepts in the embedded math problems in Quiz A, Quiz B. (SAT https://blog.prepscholar.com/printable-sat-practice-tests-4-free-official-tests or ACT https://www.act.org/content/act/en/products-and-services/the-act/test-preparation/math-practice-test-questions.html?page=0&chapter=0)
6. Students demonstrate their understanding. • Performs well on quiz items. • Shares real life examples of catching an error. • Shares a time when they were the one at the table that figured the total cost for dinner including tip.	1. Students share examples of ways they can save money in their everyday life. 2. Students summarize when and where they may use these skills in future.
7. Formal assessment. Students calculate all Quiz A and Quiz B examples (or original examples).	**Quiz A and Quiz B** (See attached.)