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| **Lesson Title:  Culminating Task - Restaurant problem** | **Date:** KD |
| **Overall Expectations:****Grade 7:**  demonstrate an understanding of proportional relationships using percent, ratio, and rateSpecific Expectations: * *solve problems that involve determining whole number percents using a variety of tools*
* *solve problems involving the calculation of unit rates*

**Grade 8:** solve problems by using proportional reasoning in a variety of meaningful contextsSpecific Expectations:* *Identify and describe real-life situations involving two quantities that are directly proportional*
* *Solve problems involving percent that arise from real-life contexts*
* *Solve problems involving rates*

**Learning Goals:*** learning to make informed decisions about restaurant choices and knowing how to apply money to bills received as well as tip appropriately

**Success Criteria:*** use knowledge gained throughout unit to pick an appropriate restaurant in order to use money provided
 | **Assessment for/as Learning Opportunities*** ticket out door
* consolidation conversations during congress
* problems throughout unit
* quizzes

**Assessment of Learning*** test problems

**Prior Knowledge/Readiness*** knowledge of fractions
* integer rules
* tax applied to prices

**Learning Skills**Responsibility, Organization, Independent Work, Collaboration, Self-regulation**Equipment:** * iPad
* restaurant menus
* coupons
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| **Lesson Plan** **Minds –On:**Tax is 15%Your bill is $12.00 how much will the total be with tax?Your bill is $15.00 with tax how much should you tip?You need to tip $4.00 on a bill after tax, how much was the bill with the tax?**Action/Problem:**You and your best friend are headed out for your birthday dinner.  Since it’s a special occasion your parents have given you $55, and you have $20 of your own money saved from babysitting. With this money you and your friend need to pick a restaurant where you can get your meals and still be able to tip at the end of the dinner.Using the iPad’s provided research the most affordable restaurant (a sit down dining establishment is required) for your evening out.  You need to order:* a beverage each
* an appetizer to share
* an entree each
* dessert is an option
* tea and coffee are an option

**Things to consider**:* Are there any hidden costs?
* Extra costs for sides?
* Remember there is tax added to all your meal choices, and you must tip at least 15% at the end.

**Extension One:** * What is the ratio that your parents are paying **TO** what you are paying for your meal?
* Write this ratio in lowest terms.
* If you and three friends went for dinner and your family was going to pay the same ratio as they previously did, what would the new ratio be?  How much money would they give you this time?

**Extension Two:** You liked the restaurant so much you’ve decided to head back with 10 of your friends to enjoy another meal and celebrate the end of the school year.  With that in mind how much money will each person need to contribute in order to split the bill evenly?  The restaurant has a policy that any tables over 10 people has an automatic gratuity of 15% added to the bill before taxes.  **Each person needs to order**:* a beverage
* either an appetizer or dessert
* an entree
* tea or coffee is an option

\*\*Remember that there is tax on each of the menu items and the gratuity will be added before the tax on your bill, you can decide whether you wish to tip your server more on top of the added gratuity.\*\*   **Extension Three:**  Now you are in a rush and you need to grab something quickly to eat.  You enjoyed the meal you had with your friends so much you’ve decided to have the EXACT same meal for take-out. Since you’re only buying food for one how much money will you need in order to eat.  **Extension Four:** Your friend went into this same restaurant last week their bill was $28.00.  They shared with you that they tipped 20% after tax.  What might they have ordered as their meal?  **Extension Five:** You’ve gotten a coupon in the mail for your favourite restaurant.  Since you love it so much you’ve decided you should head in again to eat.  Your coupon gets you 20% off your meal.  This coupon is applied before taxes. Make sure you remember to calculate the tax and make sure you apply the coupon to your meal. **Accommodations/Modifications**: * provide an already found restaurant menu with prices
* make the prices “friendly,” in order for easier calculations
* reduce the extension requirements
* allow for students to work with a partner

**Consolidation:*** students demonstrate their learned knowledge throughout proportional reasoning unit
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| **Resources:*** iPad’s
* restaurant menus
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| **Homework Assignment:     N/A**  | **Next Steps/Reminders:** |
| **Reflection:** * budget appropriately for dinners out and make sure to calculate and budget for tip
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**Math Problem Rubric**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Criteria** | **Level 1** | **Level 2** | **Level 3** | **Level 4** |
| **Knowledge and Understanding****(DO YOU KNOW YOUR MATH?)** | Demonstrates limited knowledge and understanding of math concepts (major computation errors or did not attempt the problem) | Demonstrates some knowledge and understanding of math concepts (some computation errors made and math words used incorrectly) | Demonstrates considerable knowledge and understanding of math concepts (may include a small mistake in use of math words and computations) | Demonstrates thorough knowledge and understanding of math concepts by obtaining the correct answer and using the correct math words |
| **Thinking****(CAN YOU USE A PLAN TO SOLVE THE PROBLEM?)** | It does not appear that steps were taken to solving the problem | Some steps to solving the problem are missing | Shows most steps involved in solving the problem | Shows all the steps involved in solving the problem and checked his/her answer with another strategy |
| **Communication****(CAN YOU COMMUNICATE WHAT YOU DID AND WHY YOU DID IT?)** | Provides no explanation or provides limited explanation of *what* strategy was used and *why* it was used to solved the problem | Provides some explanation of *what* strategy was used and *why* it was used to solved the problemUses some pictures, symbols and words to justify answer | Provides a clear explanation of *what* strategy was used and *why* it was used to solved the problemUses pictures, symbols and/or words to justify answer | Provides a clear and thorough explanation of *what* strategy was used and *why* it was used to solved the problemUses pictures, symbols and words to justify answer |
| **Application****(CAN YOU USE YOUR OVERALL KNOWLEDGE OF MATH TO SOLVE THE PROBLEM EFFECTIVELY & EFFICIENTLY)** | Transfers limited math knowledge to the problem in order to choose an efficient method to solve the problem | Transfers some math knowledge to the problem in order to choose an efficient method to solve the problem | Transfers most math knowledge to the problem in order to choose an efficient method to solve the problem | Transfers overall math knowledge to the problem by solving the problem using the most efficient method |