**Math-in-CTE Lesson Plan Template**

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| Lesson Title: Tipping/Gratuities | Lesson #10 |
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| Occupational Area: Foods II |
| CTE Concept(s): Tipping/Gratuities  |
| Math Concepts: Rounding, Estimation, Addition, Percentages |
| Lesson Objective: | To teach students the appropriate amount to tip a server in a restaurant and how to calculate that amount without the use of a tip calculator (mental math). |
| Supplies Needed: | calculators, practice worksheet, simulated restaurant |

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| **The "7 Elements"** | **Teacher Notes****(and answer key)** |
| 1. **Introduce the CTE lesson.**

Part of practicing proper dining etiquette involves being able to leave an appropriate tip/gratuity for your table’s server. The actual amount you choose to tip will depend upon your evaluation of the service you received, but there are customary percentages that you should use as a basis for your determination.Today, for good service, a tip of 18% (15% - 20%) of the pre-tax bill is customary. If you feel that you received excellent service, you may choose to pay 20%, or if your experience was less desirable you may choose to tip less.Barring truly horrific service, you should always leave a tip. If your experience was so poor that you feel the server has earned no tip, you should contact the establishment’s manager and discuss your displeasure with him/her. | 1. Students read Sun Times tipping article. |
| **2. Assess student’s math awareness as it relates to the CTE lesson.**1. In which situations/establishments do you leave a tip – at McDonald’s or at Olive Garden?
2. When do restaurants automatically include a gratuity on your bill?
3. How do you determine the level of service you received?
4. Is it really necessary to leave a tip? Have you heard of sub-minimum wage?
5. So, you’ve decided that you just had an excellent meal with service to match (plus you want to impress your date), how are you going to figure out how much to leave without pulling out your handy-dandy tip calculator (not at all sophisticated)?
6. What are tools (not physical tools) or tricks you can use to figure out the tip amount?
 | Answers:1. Leave a customary tip (15% - 20%) in a full-service restaurant and a lesser amount (5% - 10%) in establishments that are buffet-style but which provide beverage and fresh plate service. No tip is necessary in fast-food restaurants.
2. Many restaurants automatically charge 18% of the bill on parties of 8 or more. Others may charge different percentages on either smaller or larger groups.
3. See chart in packet.
4. Yes. In Utah (and many other states) servers in restaurants may earn only $2.13 per hour. Tips are an assumed/built-in portion of their earnings.
5. Do the math in your head (mental math).
6. Rounding, estimation, addition, and decimal placement.
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| **3. Work through the math example *embedded* in the CTE lesson.** Teach how to estimate percentages on a fixed value.1. You're finished eating, your server has presented you with your bill, and it is time to determine how much of a gratuity you will give. You have no pencil or paper; what do you do?

*Mental Math:* **Step I** – Round the amount of the pre-tax food/beverage bill. If an amount is ≥ $0.50 round it up to the next dollar amount (whole number).*ex. $14.72 becomes $15.00*If an amount is < $0.50 round it down to the next dollar amount (whole number).*ex. $14.48 becomes $14.00* **Step II** – Move the decimal point of your rounded dollar amount one space to the left.*ex. $15.00 becomes $1.50**ex. $14.00 becomes $1.40*These amounts ($1.50 and $1.40) equal approximately 10% of your pre-tax bill.**Step III** – If **10%** is the amount you want to tip (service was poor), leave the estimated amount as your tip.*ex. $1.50 or $1.40* If **20%** is the amount you want to tip (service was excellent), just double this amount.*ex. $1.50 + $1.50 = $3.00**ex. $1.40 + $1.40 = $2.80*If **15%** is the amount you want to tip (service was average/good), estimate half of your 10% amount and add it to the full 10% amount.*ex. 10% of $15.00 is $1.50, and half of that is $0.75,**therefore $1.50 + $0.75 = $2.25**ex. 10% of 14.00 is $1.40, and half of that is $0.70,**therefore $1.40 + $0.70 = $2.10*If **18%** is the amount you want to tip (service was good/excellent), mentally figure the 15% amount and the 20% amount and choose a dollar amount between the two.*ex. 15% of a $15.00 bill is approximately $2.25* *20% of a $15.00 bill is approximately $3.00* *the difference between $2.25 and $3.00 is $0.75* *half of this difference is approximately $0.40* *add the difference to the lower amount to arrive at $2.65**ex. 15% of a $14.00 bill is approximately $2.10* *20% of a $14.00 bill is approximately $2.80* *the difference between $2.10 and $2.80 is $0.70* *half of this difference is $0.35* *add the difference to the lower amount to arrive at $2.45* | 1. Validate student responses and move into *mental math.* |
| **4. Work through *related, contextual* math-in-CTE examples.**Assign worksheet which includes actual restaurant bills with an area for students to include their estimated tip and calculators to check their accuracy by determining the exact percentage. | Use tipping worksheet and sample restaurant receipts. |
| **5. Work through *traditional math* examples.**Round the following figures to the nearest whole dollar amount:$27.36$29.31$115.96Estimate the following problems:27+48+1289+12+5413+23+43 |  |
| **6. Students demonstrate their understanding.**Now that you know what to do, let’s practice doing it. Partner up into groups of 4 and choose a table. Make sure there are guys and girls represented at each table.  | Simulated restaurant is set up in class with a semi-formal cover for each student. Students will utilize their best dining etiquette while practicing the American and Continental method of eating a steak (glazed doughnut) and drinking a beverage (orange juice).Teacher acts as a server for all the groups (busy day at the restaurant), leaving a bill for each group.Teacher will provide different levels of service for each table (maybe even ignoring one of the tables) and leave bills of differing amounts for each table. Some bills will include discounts/coupons already figured into the bill.Students will work together to decide on an appropriate tip, taking into account the level of service received as well as the correct dollar amount to consider when figuring tip. |
| **7. Formal assessment.** | Written and practical test at end of etiquette unit. |