Title:	Restaurant Math
Grade(s):	4-5
Subject(s):	Math
Author:	ICAC Team
Overview:	This activity allows students to apply math to everyday situations. Students will act as servers and customers in a restaurant, make food orders from a menu, calculate the cost of the food, tax, and tip, and calculate making change.
	This lesson is adapted from an ALEX lesson developed by Rebecca Campbell. ALEX lesson plan ID 26240.
Content Standards:	MA(4) 6. Solve problems, including word problems, that involve addition and subtraction of four-digit numbers with and without regrouping.
	MA(4) 7. Solve problems, including word problems, involving the basic operations of multiplication and division on whole numbers through two-digit multipliers and one-digit divisors.
	MA(5) 3. Solve word problems that involve decimals, fractions, or money.
	TC(3-5) 2. Use various technology applications, including word processing and multimedia software.
Local/National Standards:	
Primary Learning Objectives:	The student will accurately use addition, subtraction, multiplication, division, and calculating percents in simulated real life situations.
Additional Learning Objectives:	
Approximate Duration of Lesson:	45 minutes
Materials and Equipment:	Menu and Guest Check handouts (See Attachments)
Technology Resources Needed:	**Calculator, Microsoft Word,** ELMO document camera, Promethean Board, or overhead projector
Background/ Preparation:	• Make transparency or paper copy to project of Guest Check.
	• Make copies of the Menu and Guest Check for each student.
Procedures/ Activities:	Step 1 Ask students:
	"How many of you have eaten in a restaurant and paid the bill yourself?"
	"How did you know how much to pay, including tax and tip?"

Lesson Plan format is adapted from the Alabama Learning Exchange (ALEX). Lessons developed by staff of the UAB NSF project
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Tell students they will be learning to calculate a restaurant bill including tax and tip.

Hand out copies of the menu to each student. Put the sample Guest Check on the overhead, Elmo projector, or Promethean Board.

Have a student volunteer place an order for food and drinks from the menu. Write his or her order on the overhead Guest Check.

Step 2   a. Have students open the **Calculator** by clicking on this icon:

OR click on *Start*, then *All Programs,* then *Accessories*, then *Calculator.*

Have students use the calculator to add the total cost for the food and drink as ordered on the overhead.

b. Ask the class how they might calculate the tax. Demonstrate calculating the tax by multiplying the total for the meal by 0.10. Write the tax amount on the sample overhead Guest Check.

Have the students calculate the total bill including tax. Write this total on the sample Guest Check.

c. Ask the class how they might calculate the amount of the tip if they want to give 15%. Demonstrate calculating the tip by multiplying the total bill by 0.15.

Write the total amount to pay (including tip) on the sample Guest Check.

d. Ask the class, "If you give the waiter $20.00, how much change should you get back?"
Calculate and write the amount of change on Guest Check.

Step 3   Tell the class that their group is going to a restaurant for lunch. Each group should choose one of the members to act as the server in the restaurant. Provide the server with enough Guest Checks for each student in the group.

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The servers are to:
- take food orders from each student,
- write the orders on Guest Checks,
- calculate the total for the meal including tax.

The server then gives each diner his or her totaled check.

Each student should check the server's math and then calculate the tip, the total amount to pay, and the change from $20.00.

Repeat this process so that each student has completed at least one Guest Check.

Collect the Guest Checks from each student.

Attachments: Restaurant Menu
Guest Check

Assessment Strategies: Use observation, completed Guest Checks, and attached rubric.

Extension: Have students use **Microsoft Word** to create a menu. To access **Microsoft Word**, click on this icon:

Remediation: Students who need extra help may work with a student who understands how to do the calculations. Provide a menu and guest checks for the students to use as they work through the activity together.

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Rubric: Restaurant Math

Score:	1	2	3	4
Participation	No participation in the activity.	Some participation, but did not work well with the group.	Participated throughout activity, contributed to the successful outcome.	Worked well with everyone in group, offered ideas, contributed to successful outcome.
Guest Check	Failed to complete Guest Check.	Created a Guest Check with more than one element missing and/or more than one math error.	Created a Guest Check with either an element missing or a math error.	Created a Guest Check with all elements included and correct math.

LUNCH MENU

Main Dishes	Price
Hamburger	3.00
Hot Dog	2.50
Pizza - cheese	2.50
Pizza – pepperoni	3.00
Fish Sandwich	3.50
BBQ Pork Sandwich	3.50
Side Items	
Chips	1.00
French Fries	1.50
Fruit Cup	1.50
Slaw	1.00
Desserts	
Chocolate Chip Cookie	0.75
Slice of Cake – Chocolate, Carrot	2.00
Pie – Apple, Pecan	2.50
Drinks	
Bottled Water	1.00
Soft Drinks – Coke, Sprite, Root Beer	1.50
Sweet Tea	1.25
Juice Punch	1.50

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GUEST CHECK

Food Item:	Amount:
Total Cost of Food:	
10% Tax:	
Total Bill (including tax):	
15% Tip:	
Total amount to pay:	
Change from $20.00:	