

Menu Math

3rd–5th Grade Objectives

CCSS Math: Operations & Algebraic Thinking

- 3.OA.D.8: Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- 4.OA.A.3: Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.



Materials Needed

- Restaurant menus (take-out menus or menus printed from restaurant websites)
- Chart paper or chalkboard
- Dave's Diner Menu
- Dave's Diner Receipt
- Dave's Diner Activity Card and Answers
- Create-A-Menu reproducible
- Pencils

Preparation

Photocopy the Dave's Diner Receipt, Activity Card, Menu and Create-A-Menu reproducible for each student. (An answer card reproducible is also available.)

Introduction

Hold up the restaurant menus, and ask students to think about the math skills needed at a restaurant. Invite students to brainstorm these math skills (e.g., adding and subtracting food prices, calculating percentages for the tip, etc.). Record their answers on chart paper or a chalkboard.

Procedure

1. Provide each student with a copy of the Dave's Diner Receipt, Menu and Activity Card. Tell students that they are going to use a restaurant menu and receipt to solve math problems.
2. Explain how you can substitute a letter for information you don't know in a problem. For example, if you want to know the total cost of two items on the menu, such as a milkshake and an order of fries, you can use the letter "a" to represent the total cost. In this example, $a = \text{cost of the milkshake} + \text{cost of the fries}$.
3. Next, invite students to read through each question on the activity card and volunteer how they would use

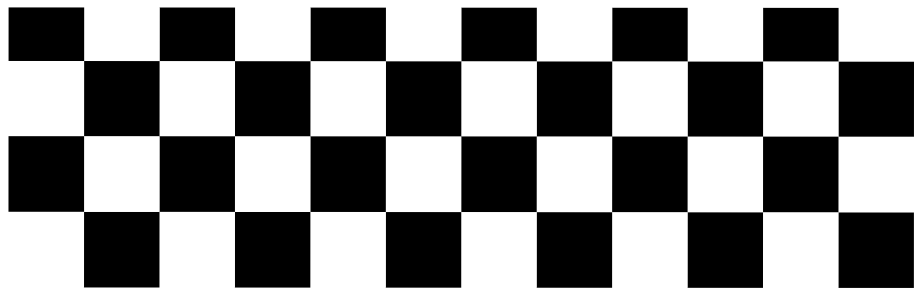
the menu and/or receipt to solve the problem. Challenge them to write the questions in the form of an equation. Point out that the questions will require them to perform two different operations to find the answers (e.g., addition *and* multiplication, addition *and* division, subtraction *and* division, and so on.) For example, in the first question, a = amount each person paid. So an equation for this problem would be:

$$a = (\text{cost of potato skins} + \text{cost of starter sampler} + \text{cost of steak fries}) / 3$$

4. Have students solve each question, and invite volunteers to share which operations they used, their equation and the answer.

Independent Practice

1. Provide a copy of the Create-A-Menu reproducible to each student. Tell students you would like them to create their own restaurant menu and an activity card with three two-step questions.
2. Have students create at least five menu items with prices. Then encourage students to write three questions below the menu. Remind them that the menu (and prices) should be used to find the answers, and each question should involve a two-step problem.
3. Have students switch cards with a partner and challenge them to correctly answer the questions on their partner's card!



STARTERS

DAVE'S FAMOUS HOT WINGS

Served with ranch dressing or BBQ sauce

8 wings \$7.59
16 wings \$13.45

POTATO SKINS \$6.00

Hot potato skins with tons of bacon bits and our unique blend of cheeses

STARTER SAMPLER . . . \$11.00

Includes 6 famous hot wings, 6 potato skins, and 6 chicken fingers

CHICKEN FINGERS

Tender, boneless chicken strips doused in spicy BBQ sauce

5 pieces \$7.59
8 pieces \$10.99

CHICKEN QUESADILLA \$6.49

Flour tortillas stuffed with grilled chicken, cheddar cheese, and hot sauce

FRENCH FRIES

Original Fries . . . \$3.59
Steak Fries \$4.00
Garlic Fries \$4.79
Chili Cheese Fries \$5.25



**TRY OUR
AWARD-WINNING
CAESAR SALAD!**

SOUPS AND SALADS

SOUP OF THE DAY \$3.29

DAVE'S HOUSE SALAD \$4.99

Mixed greens, tomatoes, onions, and bacon bits

CRISPY CHICKEN SALAD \$8.59

Chicken strips with lettuce, cheese, tomatoes, onion rings, and croutons

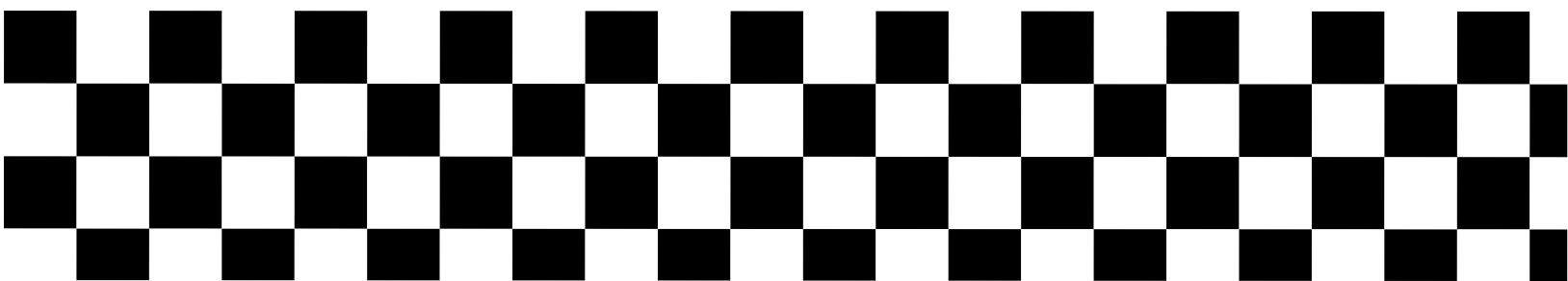
MUSHROOM SOUP \$3.29

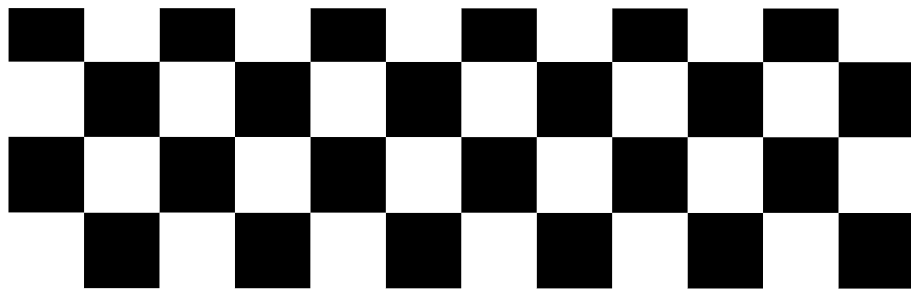
BBQ COBB SALAD \$7.79

Charbroiled chicken, lettuce, bacon, feta & cheddar cheeses, and olives

SANTA FE SALAD \$8.59

Spicy grilled chicken, lettuce, cheese, olives, and tortilla strips, with a creamy southwest dressing





BURGERS

DAVE'S SINGLE \$6.99

All-beef patty, BBQ sauce,
Swiss cheese, and red onions

DAVE'S DOUBLE \$8.95

Two all-beef patties, BBQ sauce,
Swiss cheese, and red onions

THE LIL' ELVIS BURGER \$7.99

Topped with lettuce, tomatoes,
onions, mayo, and ketchup

THE BIG ELVIS BURGER \$9.99

Topped with lettuce, tomatoes,
onions, bacon, and blue
cheese dressing

BACON CHEESEBURGER \$7.59

Topped with bacon, cheddar
cheese, and BBQ sauce

MUSHROOM BURGER \$8.89

Topped with sautéed mushrooms,
onions, Swiss cheese, and
teriyaki sauce

MARILYN'S VEGGIE BURGER ... \$7.99

Our original veggie burger,
topped with lettuce, tomatoes,
and red onions

SANDWICHES

CLASSIC BLT \$8.89

Bacon, lettuce, tomatoes, and Swiss cheese,
served with mayo on your choice of bread

GRILLED CHICKEN \$9.50

Grilled chicken smothered in BBQ sauce

TURKEY MELT \$7.59

Turkey, bacon, and Swiss cheese, served
on your choice of bread

THE JAMES DEAN \$7.79

Turkey, roast beef, lettuce, bacon, tomatoes,
and onions on rye bread

THE EISENHOWER \$6.69

Roast beef, BBQ sauce, and red onions
on toasted rye bread

SPECIALS

DAVE'S "WORLD-FAMOUS" RIBS \$12.99

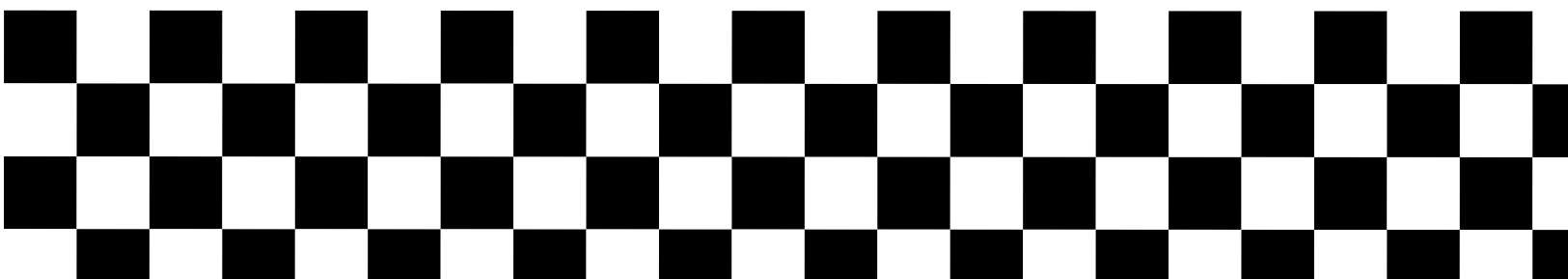
Tender ribs slow-roasted in Dave's BBQ sauce,
served with a baked potato and veggies

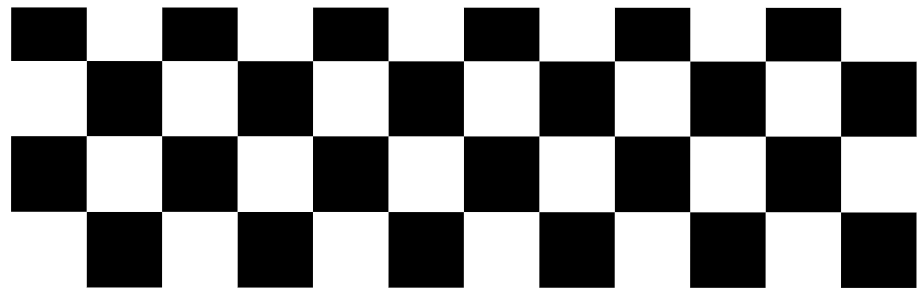
CHICKEN POT PIE \$9.55

Packed with chicken, veggies, and gravy

FISH & CHIPS \$9.99

Battered cod fillets fried to perfection,
served with tartar sauce and fries





DAVE'S DELICIOUS DESSERTS

CHOCOLATE EXPLOSION \$6.00/slice

Dark chocolate cake with chocolate ice cream, whipped cream, almonds, and chocolate shavings

DAVE'S DREAMY CHEESECAKE \$6.00/slice

Thick slice of homemade cheesecake topped with your choice of fudge, caramel, or strawberry sauce

MINT CHIP PIE \$6.59/slice

Mint chocolate chip ice cream in a chocolate crumb crust, topped with caramel and whipped cream

CHERRY PIE \$5.00/slice

Grandma's special recipe!

FOUNTAIN DRINKS

Soda Pop \$2.50

Iced Tea \$3.00

Coffee \$2.99

Hot Tea \$2.29

Milk \$2.25

ROOT BEER FLOATS

1 scoop \$2.99

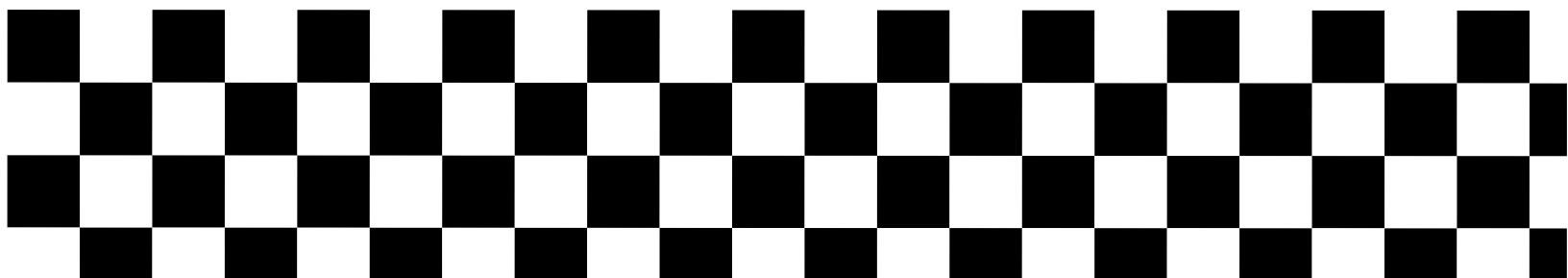
2 scoops . . . \$3.99

ALL MALTS AND SHAKES . . . \$3.99

Available in the following flavors:

- Vanilla
- Peach
- Butterscotch
- Apple
- Chocolate
- Peanut Butter
- Banana
- Lime
- Strawberry
- Pineapple
- Lemon
- Lemon-Lime

Dave's Diner
Est. 1960
Syracuse, New York



Dave's Diner Receipt



538307

Server: Jessica T.
Fri 5:58 PM

Table 16
Guests 3

1 8-P.C. CHICKEN FINGERS	\$10.99
1 HOUSE SALAD	\$4.99
1 LIL' ELVIS BURGER	\$7.99
1 CHICKEN POT PIE	\$9.55
1 MINT CHIP PIE	\$6.59
1 CHERRY PIE	\$5.00
1 ICED TEA	\$3.00
1 STRAWBERRY SHAKE	\$3.99

TOTAL: \$52.10

Thank you Jessica!!



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Dave's **DINER**

Activity Card

Instructions: Use the menu and receipt to help you answer the questions below. Remember to number the answers on your paper and show your work!

1. Three friends share a meal of potato skins, a starter sampler, and an order of steak fries. They split the cost evenly among them. How much will each friend pay?
2. How much would it cost if you ordered 3 slices of cherry pie and 2 slices of cheesecake?
3. If you pay with a \$20 bill, how much change will you get after you pay for a mushroom burger, garlic fries, and a peach milkshake?
4. How much would an 8-piece order of chicken fingers and 2 strawberry malts cost?
5. Look at the receipt provided. If you added a \$5 tip to the bill, how much change would you get back from \$60?
6. Look at the receipt provided. What would the total be if you ordered the Chocolate Explosion instead of the cherry pie?

Dave's **DINER**

Activity Card

Answers

1. Each friend will pay \$7.00. (Uses addition and division)
2. \$27.00 (Uses multiplication and addition)
3. \$2.33 (Uses addition and subtraction)
4. \$18.97 (Uses multiplication and addition)
5. \$2.90 (Uses addition and subtraction)
6. \$53.10 (Uses subtraction and addition)

