

BATTER UP

Students use a variety of strategies to figure out the cost of baseball tickets.

TEACHER NOTES FOR DISCUSSION

Students can use multiple strategies to solve these problems. Strategies could include the following: manipulatives, pictures, combination charts, notebook notation, logical reasoning, and symbols. A formula may be introduced after students have exhausted their own strategies.

Answer Key

Students could use a notebook notation to find the cost of each person.

ROW	ADULTS	CHILDREN	TOTAL
1.	2	1	\$24.50
2.	1	4	\$28.00
3.	2	8	\$56.00 (ROW 2 x 2)
4.	-	7	\$31.50 (ROW 3 - ROW 1)
5.	1	-	\$4.50 (ROW 4 DIVIDED BY 7)
6.	2	-	\$20.00 (ROW 5 - ROW 1)
7.	1	-	\$10.00 (ROW 6 DIVIDED BY 2)
8.	3	2	\$39.00 (MULTIPLY COST OF EACH)

Students could use a combination chart to find the cost of each person.

CHILDREN ↕							
10			\$65.00				
9							
8							
7							
6							
5		\$32.50					
4							
3							
2					\$49.00		
1			\$24.50				
0							
ADULTS ↔	0	1	2	3	4	5	6

From the given information, students can double the adults, children, and prices. This would show that four adults and two children cost \$49.00, and two adults and ten children cost \$65.00. From these figures, students can use patterns vertically or diagonally to find the cost of six adults or two adults. Also, finding the step for the vertical column of adults will then tell them the children's price.



Objective

After completing this activity, students should be able to use pre-algebra skills to solve problems.

Time Considerations

Instructor preparation: 30 minutes

Student activity: one or two classes

BATTER UP

Students could use algebra to find the cost of each person.

$$2a + c = \$24.50$$

$$c = (\$24.50 - 2a)$$

$$a + 5c = \$32.50$$

$$a = (\$32.50 - 5c)$$

$$c = \$24.50 - 2(\$32.50 - 5c)$$

$$c = \$24.50 - \$65.00 + 10c$$

$$\$40.50 = 9c$$

price per child = \$4.50

$$2a + \$4.50 = 24.50$$

$$2a = \$20.00$$

price per adult = \$10.00

Go BEYOND answer key

Use notebook notation to find the cost of each person.

ROW	SODA	HOT DOGS	NACHOS	TOTAL
1.	3	2	-	\$13.00
2.	-	4	-	\$8.00
3.	2	-	3	\$16.50
4.	-	1	-	\$2.00 (DIVIDE ROW 2 BY 4)
5.	3	-	-	\$9.00 (SUBTRACT 2 HOT DOGS FROM ROW 1)
6.	1	-	-	\$3.00 (DIVIDE BY 3)
7.	-	-	3	\$10.50 (SUBTRACT 2 POPS FROM ROW 3)
8.	-	-	1	\$3.50 (DIVIDE BY 3)

STANDARDS AND BENCHMARKS

National Council of Teachers of Mathematics. *Curriculum and Evaluation Standards for School Mathematics*. <http://standards-e.nctm.org/1.0/normal/standards/intr_MAIN.html>, June 19, 2000.

Standard 6: Problem Solving

- apply a wide variety of strategies to solve problems and adapt the strategies to new situations

Standard 8: Communication

- organize and consolidate their mathematical thinking to communicate with others

Standard 2: Patterns, Functions and Algebra

- use symbolic forms to represent and analyze mathematical situations and structures
- use mathematical models and analyze change in both real and abstract contexts



BATTER UP

UNDERSTAND YOUR MISSION

In this activity, you will create a strategy to figure out the cost of baseball tickets.

CHART A COURSE FOR EXPLORATION

On your Mississippi River trip, your family stops at St. Louis. There is an afternoon Cardinal's baseball game and your family decides to attend. You try to figure out the price of tickets without looking at the prices. One family standing in line has two adults and one child. The mother pays the cashier \$24.50. Another family has one adult and five children. Their total cost is \$32.50. The next family has two grandparents, one parent, and two children. What is your prediction for the cost for this family? Calculate the cost for your family. Explain your answer.

Gather Your Supplies

- paper
- pencil

Go Beyond

At the game, your family gets hungry. Your dad makes a trip to the food stand. He brings back 3 large soda pops and 2 hot dogs. The total is \$13.00. On a second trip to the food stand, your dad gets 4 hot dogs. The total this time is \$8.00. On the last trip for food, you get 2 soda pops and 3 nachos. This is the largest bill at \$16.50. How much did each food item cost? Your brother has \$5.00 to spend. What food items can he buy? Explain your answer.

BATTER UP

Rubric Scoring Scales

Understanding the Problem	
0	Completely misunderstands the problem.
1	Part of the problem misunderstood or misinterpreted.
2	Complete understanding of the problem.

Planning a Solution	
0	No attempt, or totally inappropriate plan.
1	Partially correct plan based on part of the problem being interpreted correctly.
2	Plan can lead to a correct solution if implemented properly.

Getting an Answer	
0	No answer, or wrong answer based on an inappropriate plan.
1	Copying error, computational error, or partial answer for a problem with multiple answers.
2	Correct answer and correct label for the answer.

REFERENCES

———. Mathematics in Context. Encyclopedia Britannica Educational Corporation, 1998.

Mathematics Assessment: Myths, Models, Good Questions, and Practical Suggestions. National Council of Teachers of Mathematics, 1991.