

Introduction

Based on the television show Jeopardy, this game is a popular learning tool used by many teachers. In the television show, individual contestants choose categories and are posed questions in the form of an answer. Here the contestants are an entire class, so they must be divided into teams. Moreover the questions are posed directly, instead of being given as answers.

Standards Assessed

Questions posed should be ones that students can answer quickly, to speed up game play. Any mathematics subject can be covered. However, in this lesson we cover the following California Content Standards for Algebra 1-Grades Eight Through Twelve:

- 1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable.

Materials Needed

1. An overhead projector
2. Transparencies and markers
3. 25 Post-its, or a sheet of paper cut into 25 pieces
4. A list of math problems, divided into five separate categories

If a projector is not available, then the game board can be drawn on a chalk board, and the entries on the game board covered with paper taped to the board. Alternatively, to save paper, the entries can be written directly onto the chalkboard grid (the teacher in the class where this lesson was implemented used this trick).

Construction of the Game Board

1. On a transparency, create a 5×5 grid with the categories labelled atop each column.
2. Enter the five questions for each category in their respective columns. The questions should be ordered from easiest to hardest, starting at the top row. See page 5 for an example.
3. Write the dollar values \$100, \$200, \$300, \$400, and \$500 on 5 Post-its each, and cover the questions on the board as shown on page 3.

Game Play

The students should be divided into 3-5 teams, keeping the number of students on each team minimal. The game begins by choosing a team at random to start the game. Then the game play proceeds as follows.

- A member of the team chooses a category and dollar amount on the board, and the instructor lifts the Post-it on the square to reveal the question.
- Every team works on the question just revealed, and the first team to answer the question correctly (within a reasonable time) receives the dollar amount on the Post-it added to its score.
- Each team gets only one chance to answer a question, and if a team answers incorrectly, then the remaining teams can answer.
- If no team answers a question correctly, then the team who last chose the question chooses another category and dollar amount, and this process repeats.
- Teams are not penalized for incorrect answers, unlike the television game show. (In practice, keeping track of penalties puts an unnecessary burden on the score keeper.)

An Actual Game

In this game we use the following categories.

- Addition of integers
- Subtraction of integers
- Multiplication of integers
- Division of integers
- Mixed (all of the above)

The problems used in this example are shown on the empty game board on page 5. Suppose the students are divided into three teams, Team A, Team B, and Team C. Team A goes first, and a member of Team A chooses a problem by saying "Addition for \$100" for example. The teacher removes the \$100 Post-it in the Addition column, revealing the problem $32 + 16$. Team C responds first with an incorrect answer, but Team B later responds with the correct answer, 48. So Team B gets \$100 and chooses the next problem by saying "Subtraction for \$200". The teacher removes the \$200 Post-it in the Subtraction column, revealing the problem $29 - 36$. The teams compete once again to see who can answer correctly first. This is repeated until all the questions are used, or there is no more time remaining in the class. The team with the highest score at the end wins the game.

An intermediate state of the game board might look like the example on page 4. A complete set of problems is given on page 5.

Addition	Subtraction	Multiplication	Division	Mixed
\$100	\$100	\$100	\$100	\$100
\$200	\$200	\$200	\$200	\$200
\$300	\$300	\$300	\$300	\$300
\$400	\$400	\$400	\$400	\$400
\$500	\$500	\$500	\$500	\$500

Addition Subtraction Multiplication Division Mixed

$32 + 16$	<input style="width: 80%;" type="text" value="\$100"/>	5×5	<input style="width: 80%;" type="text" value="\$100"/>	<input style="width: 80%;" type="text" value="\$100"/>
<input style="width: 80%;" type="text" value="\$200"/>	$29 - 36$	$(-5)(2)$	$-5 \div 5$	$5 + 5(-1)$
<input style="width: 80%;" type="text" value="\$300"/>	$-29 - 36$	<input style="width: 80%;" type="text" value="\$300"/>	$22 \div -11$	$-1 + (-1) - (-1)$
<input style="width: 80%;" type="text" value="\$400"/>	<input style="width: 80%;" type="text" value="\$400"/>	<input style="width: 80%;" type="text" value="\$400"/>	<input style="width: 80%;" type="text" value="\$400"/>	$10 \div (-10) + 1$
<input style="width: 80%;" type="text" value="\$500"/>	<input style="width: 80%;" type="text" value="\$500"/>	<input style="width: 80%;" type="text" value="\$500"/>	<input style="width: 80%;" type="text" value="\$500"/>	<input style="width: 80%;" type="text" value="\$500"/>

Addition Subtraction Multiplication Division Mixed

$32 + 16$	$36 - 29$	5×5	$5 \div 5$	$5 + 5 \times 5$
$-32 + 16$	$29 - 36$	$(-5)(2)$	$-5 \div 5$	$5 + 5(-1)$
$32 + (-16)$	$-29 - 36$	$(-2)(-5)$	$22 \div -11$	$-1 + (-1) - (-1)$
$-32 + (-16)$	$-10 - (-5)$	$(15)(-15)$	$-100 \div -20$	$10 \div (-10) + 1$
$-16 + (-16) + (-1)$	$-10 - (-10)$	$(-21)(-11)$	$225 \div -25$	$100 \div (-10) \div -10$