

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Order of Operations Unit Tic-Tac-Toe Board

**Directions:** Choose from the activities below to get three in a row. You can choose three activities that are three in a row horizontally, vertically, or diagonally. **Everyone needs to complete activity 5.** When you have gotten three in a row, you can choose to do other activities for extra credit. If you have an idea for an alternate activity that you would like to do instead, discuss it with your teacher first. See the attached sheet for full details on the activity directions.

1. <u>Verbal/Linguistic</u> Create a mnemonic device to help you remember the Order of Operations.	2. <u>Logical/Mathematical</u> With your partner, match all the questions with the correct answer to make a shape.	3. <u>Visual/Spatial</u> On the computer, play the Order of Operations Millionaire Game.
4. <u>Interpersonal</u> Pair up with at least two other people to play Order of Operations Bingo.	5. <b>MUST COMPLETE</b> Complete the practice worksheet, self grade, and correct any wrong answers.	6. <u>Body Kinesthetic</u> Students work in groups of 2-4 people and bowl for numbers.
7. <u>Musical/Rhythmic</u> Create a song that helps you remember the order of the operations.	8. <u>Naturalist</u> Go outside and play Order of Operations Hopscotch.	9. <u>Intrapersonal</u> Write a story in journal about the order of operations.
10. <u>Visual/Spatial</u> Watch the Brain Pop Video Order of Operations.	11. <u>Verbal/Linguistic</u> Create a crossword puzzle containing the order of operations terms that are covered in this lesson.	12. <u>Logical/Mathematical</u> Work through the crossword puzzle. Work out the equations on the back of your worksheet and write your answer in word form to get the answer in the puzzle.

### **Activity Directions:**

1. **Mnemonic Device**– Create a mnemonic device to help you remember the Order of Operations. Please be creative and do not use the mnemonic device Please Excuse My Dear Aunt Sally.
2. **Order of Operations Jigsaw Puzzle**– Have students work with a partner. Use the cut out triangles to match all the questions with the correct answer to create a shape.
3. **Order of Operations Millionaire Game**– Have the students go onto the computer to play through the Millionaire Game. The students will need a piece of paper to work through the problems. The answer will be the answer to the equation.
4. **Order of Operations Bingo**– Work in groups of at least 3 people with one person being the caller and the other students being the players. The caller will write an expression on a whiteboard, and the players will solve the problem to find the number on their bingo board. If the student has the answer of the problem on their bingo board, they will put a marker in the square.
5. **Practice Worksheet**– Complete the practice worksheet. Check your answers using the answer key on table in front of the room. Correct the wrong answers before turning the worksheet.
6. **Bowling for Numbers**– Have students work in groups of 2 – 4. Introduce the game with an example, and then have them play independently. Discussion of "challenging rolls" afterwards can be productive. Students roll the 4 dice to generate their seed numbers. They then use those 4 numbers to create as many numbers as they can (1 – 10). Scoring is done as in bowling; numbered "pins" are "knocked down" by creating an expression equal to the number.
7. **Order of Operations Song**– Create a song that will help you remember the order of the operations. You can be very creative with your song, use any instruments that are in the classroom or any you have at home, and you can come up with movements. When you are creating your song, make sure to include the lyrics, the rhythm or the tune, any instruments used, and any movements that go along with your song.

**8. Order of Operations Hopscotch**– In your group use sidewalk chalk, and come up with a hopscotch board of the Mnemonic devices PEMDAS for the order of operations. When you are playing the order of operations hopscotch, you need to call out what each letter stands for. For example, if you land on the “P” you need to call out “parenthesis”.

**9. Order of Operations Story**– Write your own PEMDAS story. Your story must follow the order of operations as it applies to your expression. You will translate each operation into a real-world situation, including the result of the operation in your story.

**10. Brain Pop Video Order of Operations**– Go to the link below and enjoy the Order of Operations video. <http://www.brainpop.com/math/numbersandoperations/orderofoperations/preview.weml>

**11. Crossword Puzzle**– Use the following website to create a crossword puzzle <http://www.puzzle-maker.com/CW/> that contains atleast 10 terms from the lesson on orders of operations. Be sure your clues only point to one of the terms. In Example....”It is the first step in the order of operations” your clue could only be used for the term Parenthesis.

**12. Order of Operations Crossword Puzzle**– The students will need to use the back of the worksheet or another sheet of paper to solve the equations. The answer to the equation will need to be written in word form to be able to solve the puzzle.

## **References**

Bingo boards and directions–

<http://illuminations.nctm.org/Lesson.aspx?id=2583>

Practice Worksheet– [http://www.math-aids.com/cgi/pdf\\_viewer\\_7.cgi?](http://www.math-aids.com/cgi/pdf_viewer_7.cgi?script_name=order_of_operations.pl&skill=0&type=3&language=0&memo=&answer=1&x=84&y=26)

[script\\_name=order\\_of\\_operations.pl&skill=0&type=3&language=0&memo=&answer=1&x=84&y=26](http://www.math-aids.com/cgi/pdf_viewer_7.cgi?script_name=order_of_operations.pl&skill=0&type=3&language=0&memo=&answer=1&x=84&y=26)

Bowling for Numbers–<http://www.oercommons.org/courses/bowling-for-numbers/view>

Brain Pop Video– <http://www.brainpop.com/math/numbersandoperations/orderofoperations/preview.weml>

Crossword Puzzle–

<http://www.puzzle-maker.com/CW/>

Order of Operations Jigsaw Puzzle–

<http://www.mathswithgraham.org.uk/?p=2008>

Order of Operations Hopscotch–

<http://www.rundesroom.com/2012/04/taking-math-outside.html>

Order of Operations Millionaire Game–

<http://www.math-play.com/Order-of-Operations-Millionaire/order-of-operations-millionaire.html>

Order of Operations Crossword Puzzle–

<http://www.teacherspayteachers.com/Product/Order-of-Operations-Crossword-Puzzle-for-Elementary-Grades-219484>