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**Title: Spinning with Numbers**

*How will students benefit from the Spinning with Number activity?*

- 1. It is another approach in drilling students to master their multiplication, division, addition, and subtraction skills.*
- 2. Students indirectly master the skills in mathematical operations.*
- 3. It develops students' reasoning, analyzing, and critical thinking skills.*
- 4. It is another task to keep students busy, if they had completed their assigned class work.*
- 5. Students will realize there are many ways to reach the same solution.*
- 6. It speeds up the students' ability in grouping numbers.*
- 7. It encourages learners to apply mental skills.*
- 8. It can be used as a game, independent work, group work, and even challenged task.*
- 9. It is not rote learning.*
- 10. Most important, with any five random numbers, slow students can arrive various answers of their own.*
- 11. For those who are mathematically inclined, it will be a challenged task for them to arrive with a definite answer.*

## ***Rules for Level One:***

- 1. Each mathematical signs (+, ÷, and ×) must use all but only once in any order.***
- 2. The random whole numbers must use all but only once.***
- 3. Use none repeated random whole numbers for each question.***
- 4. Random whole numbers can be placed in any order of operations.***
- 5. ( ), [ ], or { } can be used as many times as the students need.***
- 6. Answer must be given in the smallest whole number.***

## ***Workout for Level One!***

***Example: Choose any 4 random whole numbers:***

***10, 8, 6, 3***

- 1. Try to add any two numbers and multiply any two numbers.***
- 2. Check whether the sum and the product can be divided.***
- 3. Check whether the quotient is the smallest whole number.***
- 4. Division is the only way to make the answer to the smallest whole number.***
- 5. Write out the question:***

$$(8 + 10) \div (6 \times 3) = 1$$

***Example: Choose any 4 random whole numbers: 5, 3, 2, 1***

$$(3 + 2) \div (5 \times 1) = 1$$

$$(3 \times 2) \div (5 + 1) = 1$$

## ***Rules for Level Two:***

- 1. Each mathematical signs (+, ÷, -, and ×) must use all but only once in any order.***
- 2. The random whole numbers must use all but only once.***
- 3. There should not be repeated numbers for each question.***
- 4. Random whole numbers can be placed in any order of operation.***
- 5. ( ), [ ], or { } can be used as many times as the students need.***
- 6. Answer must be given in the smallest whole number.***

# ***Workout for Level Two!***

***Group 1: Try to eliminate the numbers till the difference is zero, then multiply the difference.***

***Example: Choose any 5 random whole numbers:  
10, 9, 7, 5, 2***

***A. Look for the number which can be divided.***

***10 can be divided by 2 and 5***

***10 divided by 2 is 5***

***10 divided by 5 is 2***

***B. If 2 and 5 are taken, the numbers which left are 9 and 7.***

***C. If I take 10 to be divided by 5, then 2 is left over.  
I can take 2 to be added to 7 to get 9.***

***D.  $9 - 9 = 0$***

***E. Take 10 to be divided by 5, the answer is 2.***

***F.  $[9 - (7 + 2)] \times (10 \div 2)$***

***$0 \times 5 = 0$***

***Example: Choose any 5 random whole numbers:***

***10, 9, 8, 7, 4***

***A. Look for numbers which can be divided.***

***8 can be divided by 4 = 2***

***B. If 8 and 4 are taken, the numbers 10, 9, and 7 are left.***

***C. I can take the quotient 2 to be added to 7.***

***D. 9 - 9 = 0***

***E. Take 8 divided by 4 = 2***

***F.  $10 \times [(8 \div 4) + 7 - 9] = 0$***

***$10 \times [2 + 7 - 9]$***

***$10 \times 0 = 0$***

***Group 2: Choose any 2 random whole numbers and subtract them to get zero, then eliminate all from the random numbers.***

***Example: Choose any 5 random whole numbers:  
10, 8, 7, 5, 1***

***A. I can take 1 and added to 7 and subtract from 8.***

$$7 + 1 - 8 = 0$$

***B. If 7, 1, and 8 are taken, then 10 and 5 are left.***

***C. I can take 10 to be divided by 5 and the quotient is 2.***

***D. Two multiply by 0 is ZERO.***

***E.  $[8 - (7 + 1)] \times (10 \div 5)$***

$$0 \times 2 = 0$$

***Group 3: Some random whole numbers may not fall in the above category, and the solution may or may not be zero but has to be the smallest whole number.***

***Example: Choose any 5 random whole numbers:***

***10, 9, 8, 4, 3***

***A. Think of any two integers multiply, add, divide, and subtract each other, or can be in any sequencing.***

$$4 \times 9 = 36$$

***B. Look for any two remaining integers to add up, and the sum can be divided by the products.***

$$10 + 8 = 18$$

$$\begin{aligned} \text{C. } & 3 - [(9 \times 4) \div (10 + 8)] \\ & 3 - [36 \div 18] \\ & = 1 \end{aligned}$$

**Note: We will discuss more advanced levels and strategies at the ETC2010 workshop. See you in Philippines.**

