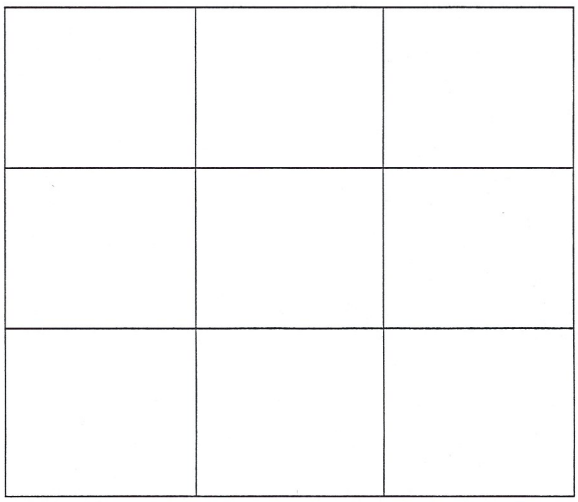
Name _____ Period _____

Magic Squares



1) Place the numbers 1 through 9 in the magic square so that each row, column, and diagonal are equal in value.

2) What is the value of each row? column? and diagonal?

3) The constant that is the sum of every row, column and diagonal is called the magic constant ~~or magic sum,~~ *M*. ~~Every normal magic square has a unique constant determined~~ solely by the value of *n*, which can be calculated using this formula:

4) Will this pattern work for other sized squares? Ex. 4 x 4, 5 x 5, 6 x 6?

NAME _____ DATE _____

7–16 A MIXED-UP MAGIC SQUARE

A magic square is a group of numbers arranged such that the sum of the numbers in each row, column, and diagonal is the same. This sum is called the magic number.

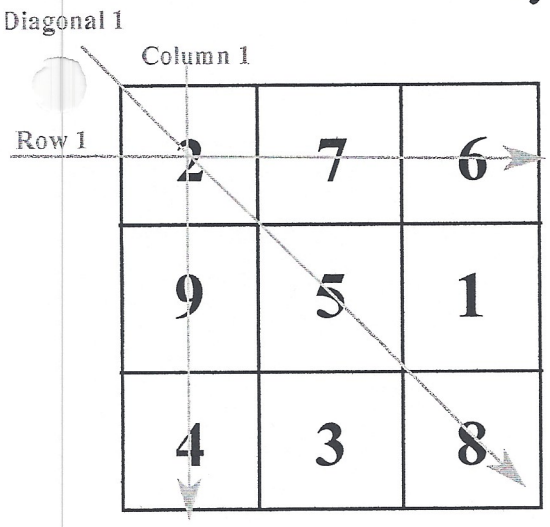
The square below is not so magical. Only one row and one column add up to the magic number. Rearrange the other numbers to make a magic square.

10	16	14	13
12	6	7	9
1	8	11	5
4	3	2	15

What's the magic number? _____

COUNTDOWN CHALLENGE

Why is this a MAGIC SQUARE?



1. What is the sum of the numbers in Row 1? ____
2. What is the sum of the numbers in Row 2? ____
3. What is the sum of the numbers in Row 3? ____
4. What is the sum of the numbers in Column 1? ____
5. What is the sum of the numbers in Column 2? ____
6. What is the sum of the numbers in Column 3? ____
7. What is the sum of the numbers in Diagonal 1? ____
8. What is the sum of the numbers in Diagonal 2? ____

Why this works:

If 5 = n, write each number as an algebraic expression using N and fill in the Magic Square. (We got you started!)

	n + 2	
	n	
	n - 2	

Can any arithmetic sequence of numbers form a magic square?

Try the sequences listed below each square...then create your own and amaze your friends with your magic!

0, 1, 2, 3, 4, 5, 6, 7, 8

21,22,23,24,25,26,27,28,29

-4, -3,- 2, -1, 0, 1, 2, 3, 4