

ACTIVITY NO . – 6 FUN WITH GIVE AND TAKE

SUBJECT	MATHEMATICS
CLASS	III
CHAPTER/UNIT	FUN WITH GIVE AND TAKE
TOPIC	3 × 3 MAGIC SQUARE
TIME	30 MINUTES
NATURE OF ACTIVITY	INDIVIDUAL

What will I learn(Learning Outcome)?

The students will be able to construct a 3×3 magic square with a magic sum of 15.

Skills: Analyzing , Creating , Critical and Analytical Thinking.

What I have to do?

To create a magic square of 3×3 with a magic sum of 15.

What do I require?

A4 size white sheet, sketch pens, pencil, ruler and eraser.

What do I need to know?

Simple addition

➤ Teacher's Activity:

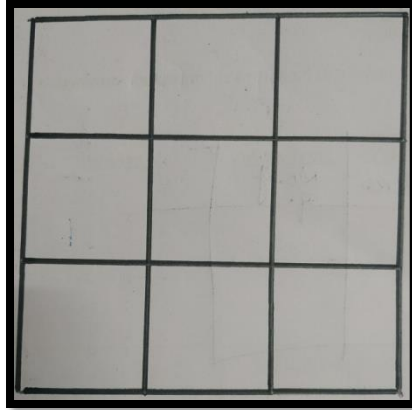
The teacher will demonstrate on the board why and how the sum of each row , each column and each diagonal will come up to be 15 if we use numbers from 1 to 9 in the following way :

- Write numbers from 1 to 9.
- Take the centre number i.e. .
- Multiply it by 5 i.e. $3 \times 5 = 15$.
- This will be the constant sum when we arrange numbers in the magic square using numbers from 1 to 9.

How will I proceed ?

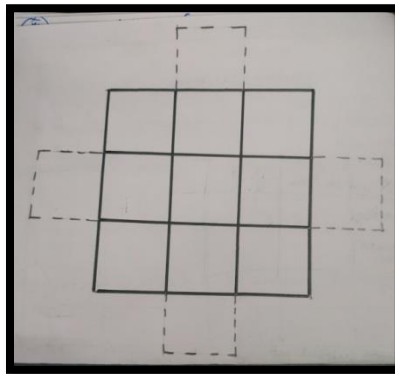
➤ Student's Activity :

1) Take a white A4 size sheet and make a 3×3 square grid on it as shown in Fig.1 below.



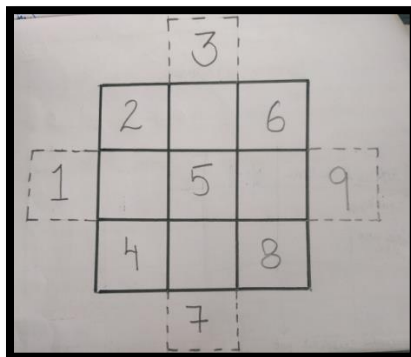
(Fig.1)

2) Extend the grid with dotted lines such that they form four squares as shown in the Fig.2 .



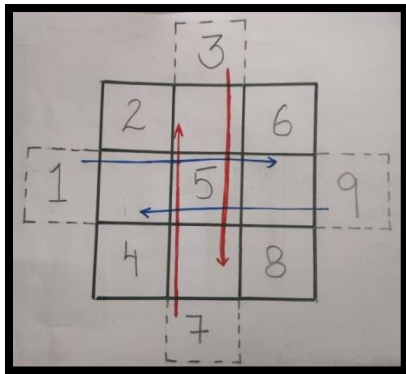
(Fig. 2)

3) Write numbers from 1 to 9 such as (1,2,3) make one set and (4,5,6) forms second set , (7,8,9) the third set and then arrange them as shown in Fig.3.



(Fig.3)

4) Now write the numbers written outside as shown by the arrows in Fig. 4 .



(Fig.4)

5) Erase the squares drawn outside and obtain the magic square as shown in Fig.4.

2	7	6
9	5	1
4	3	8

(Fig.5)

6) Find the sum of each row, each column and diagonal and record the observation in the table.

What have I observed ?

	<u>NUMBERS</u>			<u>SUM</u>
<u>ROW 1</u>				
<u>ROW 2</u>				
<u>ROW 3</u>				
<u>COLUMN 1</u>				
<u>COLUMN 2</u>				
<u>COLUMN 3</u>				
<u>DIAGONAL 1</u>				
<u>DIAGONAL 2</u>				

Is the sum obtained same in all the cases? _____ (Yes/ No)

What have I learnt?

The sum of each row, each column and diagonal remains the same i.e. 15(constant) in a 3×3 magic square.

What am I curious to know?

Can I make another 3×3 magic square using 2 digit numbers to get the sum as 51 in each row, each column and diagonal ?

Let me evaluate myself

Q1) In a magic square , each row , each column and diagonal add up to the same sum. Can you fill in the missing numbers in these magic squares?

(1) The sum is 15.

	7	6
9	5	
4		8

(2) The sum is 12.

	8	1
2		6
7	0	

(3) The sum is 15.

8	1	
	5	7
4		2

(4) The sum is 12.

3		
8		0
	6	5

Q2) Verify that the figure given below is a magic square. Also find its magic constant.

16	11	18
17	15	13
12	19	14

	<u>NUMBERS</u>			<u>SUM</u>
<u>ROW 1</u>				
<u>ROW 2</u>				
<u>ROW3</u>				
<u>COLUMN 1</u>				
<u>COLUMN 2</u>				
<u>COLUMN 3</u>				
<u>DIAGONAL 1</u>				
<u>DIAGONAL 2</u>				