

# Math Investigation Centers



2<sup>nd</sup> Grade ~ Units 4, 5, and 6 – Addition and Subtraction

<p><b>Math and Literature</b></p> <p><b>Magic Squares:</b> Experience the magic of math using magic squares.</p>	<p><b>Math and Problem Solving</b></p> <p><b>That's Sum Challenge:</b> Looking for patterns is like hunting for treasure. Sometimes patterns appear in the most obvious places when adding numbers. You will discover some interesting patterns in this investigation.</p>	<p><b>Math and Problem Solving</b></p> <p><b>Close to 1,000</b> Take your chance with cards and see how close you can get to 1,000.</p>
<p><b>Math and Communication</b></p> <p><b>Let Me Count the Ways:</b> Use the internet to research and discover as many different ways to add and subtract as you can.</p>	<p><b>Student Choice</b></p>	<p><b>Math and Problem Solving</b></p> <p><b>Palindromes:</b> Find palindromes on the hundred chart and look for patterns.</p>
<p><b>Math and Logic</b></p> <p><b>Two Digit Turn Around:</b> What happens when a two-digit number is subtracted a certain way? You will discover interesting patterns in this investigation.</p>	<p><b>Math and Literature</b></p> <p><b>Mouse Count:</b> Just like the mice in <u>Mouse Count</u> solve their own problems, can you create and sort story problems of different types?</p>	<p><b>Math and Games</b></p> <p><b>What's the Difference?</b> Use your math skills to win a game by finding differences between numbers.</p>

# Math Investigation Center

## Mouse Count

Units of Study 4, 5, and 6

Core Correlation: 2.OA.1

DOK: 3; Proficiency Level: 4

Type of Activity: Math and Literature

**Materials:** Mouse Count by Ellen Stoll Walsh, Mouse Count Story Problem sheet, Mouse Count Sorting sheet, Mouse Count Cut Out sheet, scissors, glue, pencil

**Introduction:** Just like the mice in Mouse Count solve their own problems, can you create and sort story problems of different types?

**Instructions:**

- Read or listen to the story, Mouse Count by Ellen Stoll Walsh <https://www.youtube.com/watch?v=uNH6i7239FI>
- Review the Addition and Subtraction Problem Types sheet.
- Rewrite the problems on the Mouse Count Story Problem sheet, using different problem types. Write the equation that represents the problem.
- Cut out each story problem from the Mouse Count cut out sheet. Glue them on the Mouse Count Sorting Sheet in the correct problem type box.

**Assessment:**

Grade will be determined by completion of the following:

- Completion of Mouse Count Problem sheet.
- Completion of Mouse Count Sorting sheet.



# Addition and Subtraction Problem Types

## Reference Sheet

	Result Unknown	Change Unknown	Start Unknown
<b>Add to (Join)</b>	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? $2 + 3 = ?$	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two?	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before?
<b>Take From (Separate)</b>	Five apples were on the table. I ate two apples. How many apples are on the table now? $5 - 2 = ?$	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? $5 - ? = 3$	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? $? - 2 = 3$
	Total Unknown	Addend Unknown	Both Addends Unknown
<b>Put Together/ Take Apart (Part-Part-Whole)</b>	Three red apples and two green apples are on the table. How many apples are on the table? $3 + 2 = ?$	Five apples are on the table. Three are red and the rest are green. How many apples are green? $3 + ? = 5$	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? $5 = 0 + 5; 5 + 0; 1 + 4; 4 + 1; 2 + 3; 3 + 2$
	Difference Unknown	Bigger Unknown	Smaller Unknown
<b>Compare</b>	<p>("How many more?") Lucy has two apples. Julia has five apples. How many more apples does Julia have than Lucy?</p> <p>("How many fewer?") Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie?</p> $5 - 2 = ?$ or $2 + ? = 5$	<p>("more") Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have?</p> <p>("fewer") Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have?</p> $3 + 2 = ?$ or $2 + 3 = ?$	<p>("more") Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have?</p> <p>("fewer") Lucy has 3 fewer apples than Julie. Julie has 5 apples. How many apples does Lucy have?</p> $? + 3 = 5$ or $5 - 3 = ?$

Adapted from Common Core Glossary

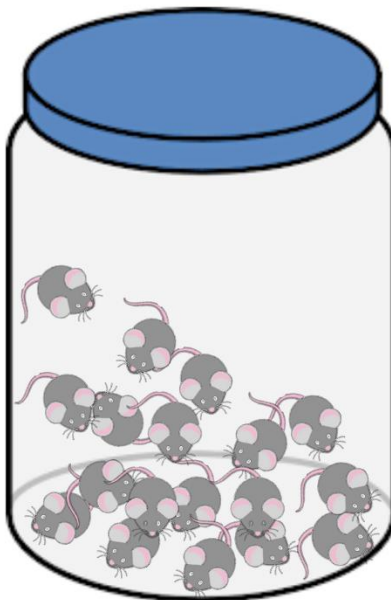
# Mouse Count Story Problems

## Recording Sheet



Instructions: Rewrite the following problem using different problem types. Write the equation that represents the problem.

Some Subtraction Problem Types		
Problem Type	Action or Situation	Equation
Separate, result unknown	Snake has 42 mice in the jar. 17 escape. How many are left?	$42 - 17 = ?$
Separate, start unknown		
Separate, change unknown		





# Mouse Count

## Cut Out Sheet

Cut out each story problem and glue it on the Mouse Count Activity Sheet in correct problem type box.

<p>Jake has some trading cards. He gives 3 to his brother. Now Jake has 7 trading cards left. How many cards did he have at the start?</p>	<p>A store has 243 bottles of water at the start of the day. The store has 168 bottles left at the end of the day. How many bottles does the store sell?</p>	<p>There are 6 pigs in the pen. There are 2 pigs in the yard. How many pigs altogether?</p>
<p>Marcus has 64 picture books. He has 17 more picture books than Stanley. How many picture books does Stanley have?</p>	<p>Six children are playing tag in the yard. Some more children come to play. Now there are 9 children in the yard. How many children came to play?</p>	<p>Sarah has 38 hair bands. Her dad gave her 5 more hair bands. How many hair bands does she have altogether?</p>
<p>Aisha has some stamps in her collection. Then her grandfather gives her 29 stamps. Now she has 75 stamps. How many stamps did she have at the start?</p>	<p>Aki has 8 apples. Sophia has 14 apples. How many more apples does Sophia have than Aki?</p>	<p>Lucy has 48 trading cards. Lucy has 16 fewer cards than Alex. How many trading cards does Alex have?</p>
<p>Of the 84 shirts in the clothing store, 39 have short sleeves. The rest have long sleeves. How many shirts have long sleeves?</p>	<p>Ana has 13 roses. How many can she put in her red vase and how many can she put in her blue vase?</p>	<p>There are 7 cows in the field. Three cows go into the barn. How many cows are still in the field?</p>

# Mouse Count

## Sorting Sheet



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

Glue each story problem in the correct box.

	<b>Result Unknown</b>	<b>Change Unknown</b>	<b>Start Unknown</b>
<b>Add to (Join)</b>			
<b>Take From (Separate)</b>			
	<b>Total Unknown</b>	<b>Addend Unknown</b>	<b>Both Addends Unknown</b>
<b>Put Together/ Take Apart (Part-Part-Whole)</b>			
	<b>Difference Unknown</b>	<b>Bigger Unknown</b>	<b>Smaller Unknown</b>
<b>Compare</b>			

# Mouse Count

## Teacher Answer Key



	Result Unknown	Change Unknown	Start Unknown
<b>Add to (Join)</b>	Sarah has 38 hair bands. Her dad gave her 5 more hair bands. How many hair bands does she have altogether?	Six children are playing tag in the yard. Some more children come to play. Now there are 9 children in the yard. How many children came to play?	Aisha has some stamps in her collection. Then her grandfather gives her 29 stamps. Now she has 75 stamps. How many stamps did she have at the start?
<b>Take From (Separate)</b>	There are 7 cows in the field. Three cows go into the barn. How many cows are still in the field?	A store has 243 bottles of water at the start of the day. The store has 168 bottles left at the end of the day. How many bottles does the store sell?	Jake has some trading cards. He gives 3 to his brother. Now Jake has 7 trading cards left. How many cards did he have at the start?
	Total Unknown	Addend Unknown	Both Addends Unknown
<b>Put Together/ Take Apart (Part-Part-Whole)</b>	There are 6 pigs in the pen. There are 2 pigs in the yard. How many pigs altogether?	Of the 84 shirts in the clothing store, 39 have short sleeves. The rest have long sleeves. How many shirts have long sleeves?	Ana has 13 roses. How many can she put in her red vase and how many can she put in her blue vase?
	Difference Unknown	Bigger Unknown	Smaller Unknown
<b>Compare</b>	Aki has 8 apples. Sophia has 14 apples. How many more apples does Sophia have than Aki?	Lucy has 48 trading cards. Lucy has 16 fewer cards than Alex. How many trading cards does Alex have?	Marcus has 64 picture books. He has 17 more picture books than Stanley. How many picture books does Stanley have?

# Math Investigation Center

## Let Me Count the Ways

Units of Study 4, 5, and 6

**Core Correlation:** 2.OA.1; 2.OA.2; 2.NBT.5; 2.NBT.6; 2.NBT.7

**DOK:** 4; **Proficiency Level:** 4

**Type of Activity:** Math and Communication

**Materials:** Internet access, journal/paper, pencil

**Introduction:** Use the internet to research and discover as many different ways to add and subtract as you can. Be prepared to compare and contrast methods.

### Instructions:

- Use the videos on the [Methods for Adding and Subtracting Research Sheet](#) to research three or more different methods to solve addition and subtraction problems.
- Write down each method on a piece of paper. Include at least 2 examples of that method. Explain why you think the method works.
- Answer the following questions:
  1. Which are your favorite methods? Why?
  2. Are some methods better in certain situations?
  3. Compare your favorite method from number 1 to the standard algorithm. Which of these two methods do you like better? Why?

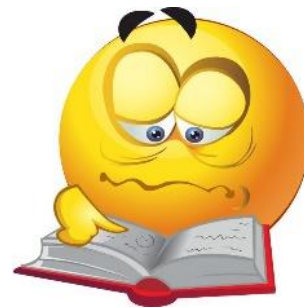
Standard Algorithm example:

$$\begin{array}{r} 1 \\ 47 \\ + 25 \\ \hline 72 \end{array}$$

### Assessment:

Grade will be determined by completion of the following:

- Methods with examples
- Answers to questions





# Methods for Adding and Subtracting

## Research Sheet



### Addition

- Make Ten and Trading Off (Origo)
  - <https://www.youtube.com/watch?v=SZy2abGiCpQ&app=desktop>
  - <https://www.youtube.com/watch?list=PLrfbSwDStbs6aMH63U2ye5as47E96fTDh&v=kYQa7rWgoWg&app=desktop>
- Adding on a 100s chart
  - <https://www.youtube.com/watch?v=3xvOHY0SR5M>
- Using Base 10 Blocks
  - <https://www.youtube.com/watch?v=WV-fovwMtu4>

### Subtraction

- Break Numbers Apart for Subtraction – Go Math
  - <https://www.youtube.com/watch?v=qatebF6zP0o&app=desktop>
- Think Addition
  - <https://www.youtube.com/watch?v=M1dml5NtEac>
  - <https://www.youtube.com/watch?v=JgKu3tLnFfM>
- Mental Math Strategies for Subtraction
  - [https://www.youtube.com/watch?v=p\\_QkYIK6IWQ&app=desktop](https://www.youtube.com/watch?v=p_QkYIK6IWQ&app=desktop)
- Subtracting Using Expanded Form
  - <https://www.youtube.com/watch?v=Mdkkygh-irg&app=desktop>
- Subtracting on a 100s chart
  - <https://www.youtube.com/watch?v=SKeXurlC6Y4>
- Equal Additions
  - [https://www.youtube.com/watch?v=AN8XN\\_MSucl&app=desktop](https://www.youtube.com/watch?v=AN8XN_MSucl&app=desktop)
  - <https://www.youtube.com/watch?v=IIY8rQQgqpw&app=desktop>

### Mental Math Strategies (Addition and Subtraction)

- Break Numbers Apart (+/-)
  - <https://www.youtube.com/watch?v=e6CmB5nRxlU&app=desktop>
- Break Numbers Apart and Compensation (+/-)
  - <https://www.youtube.com/watch?v=2LKg-4cuPqU&app=desktop>

# Math Investigation Center

## Palindromes

Units of Study 4, 5, and 6

Core Correlation: 2.NBT.7

DOK: 3; Proficiency Level: 4

Type of Activity: Math and Problem Solving

Materials: Palindromes Activity Sheet; crayons, pencil

Introduction: Find palindromes on the hundred chart and look for patterns.

### Instructions:

- A palindrome is a number that reads the same forward and backward such as 33; 868; or 6006.
- 63 is not a palindrome—But with a little addition 63 can be transformed into a palindrome:

$$\begin{array}{r} 63 \\ + 36 \\ \hline 99 \end{array} \quad \text{A palindrome}$$

We call 63 a 1-step palindrome, because we can turn it into a palindrome in one step by adding the reverse number 36.

- Some numbers take longer:

$$\begin{array}{r} \text{Step 1} \quad 59 \\ \quad + 95 \\ \hline \quad 154 \\ \text{Step 2} \quad + 451 \\ \hline \quad 605 \\ \text{Step 3} \quad + 506 \\ \hline \quad 1111 \end{array} \quad \left. \vphantom{\begin{array}{r} \text{Step 1} \\ \text{Step 2} \\ \text{Step 3} \end{array}} \right\} \text{59 is a 3-step} \\ \text{palindrome}$$

- Find out how many steps it takes to make each of the numbers 0 – 99 palindromes.
- Color all of the numbers that are already palindromes one color. Color the 1-step palindromes another color, and so on. Record your findings on the Palindrome Activity Sheet.
- What patterns did you find after completing your Palindrome chart? Explain.

### Assessment:

Grade will be determined by the following:

- Completion of Palindromes Activity Sheet
- Explanation of patterns on chart.





# Palindromes

## Activity Sheet

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

Choose a color for each:

- palindrome       1 step palindrome       2 step palindrome
- 3 step palindrome       4 step palindrome
- 5 step palindrome       6 step palindrome       more than 6 steps

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99



# Palindromes

## Teacher Answer Sheet

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

Choose a color for each:



palindrome



1 step palindrome



2 step palindrome



3 step palindrome



4 step palindrome



5 step palindrome



6 step palindrome



more than 6 steps

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

# Math Investigation Center

## Close to 1,000

Units of Study 4, 5, and 6

Core Correlation: 2.NBT.7

DOK: 2; Proficiency Level: 3

Type of Activity: Math and Problem Solving

Materials: 1 deck of number cards, Close to 1,000 Recording Sheet (one per player)

Introduction: Take your chance with cards and see how close you can get to 1,000.

### Instructions:

<http://www.cherylsclassroomtips.com/2013/02/close-to-100-or-1000-math-game.html>

1. This game can be played by 1, 2, or 3 players.
2. Deal out eight numeral cards to each player.
3. Player 1 creates two 3-digit numbers from the cards. Try to make numbers that, when added, make a total that is close to 1,000. The sum can be above or below 1,000.
4. Player 1 writes the numbers on their Close to 1,000 Recording Sheet and calculates the sum. The score for that round is the difference between the sum and 1,000. For example, if the sum is 996, the score is 4. If the sum is 1,000, the score is 0. If the sum is 1,008, the score is 8.
5. Player 1 places the six used cards in a discard pile and picks 6 new cards. They keep the 2 extra cards to use in their next turn.
6. Player 2 chooses six cards to create two 3-digit numbers from their eight cards.
7. Player 2 writes the numbers on their Close to 1,000 Recording Sheet and calculates the sum. The score for that round is the difference between the sum and 1,000.
8. The game continues until each student has played five rounds. Players total their scores. The player with **lowest** score, wins.

### Assessment:

Grade will be determined by the following:

- Completion of Close to 1,000 Recording Sheet



# Close to 1,000 Recording Sheet



Name \_\_\_\_\_

## GAME 1

## Score

Round 1: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 2: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 3: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 4: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 5: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

TOTAL SCORE \_\_\_\_\_

Name \_\_\_\_\_

## GAME 1

## Score

Round 1: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 2: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 3: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Round 4: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

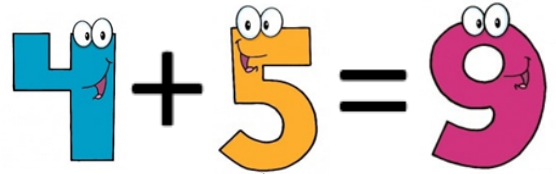
Round 5: \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

TOTAL SCORE \_\_\_\_\_

# Math Investigation Center

## That's Sum Challenge!

Units of Study 4, 5, and 6



**Core Correlation:** 2.NBT.5

**DOK:** 2; **Proficiency Level:** 4

**Type of Activity:** Math and Problem Solving

**Materials:** That's Sum Challenge Recording Sheet, pencil

**Introduction:** Looking for patterns is like hunting for treasure. Sometimes patterns appear in the most obvious places when adding numbers. You will discover some interesting patterns in this investigation.

### Instructions:

- This investigation involves writing numbers as the sum of consecutive numbers. Consecutive numbers are numbers that go in order by adding 1. For example 1, 2, 3 or 29, 30, 31, or 745, 746, 747. An example of a non-consecutive number would be 1, 5, and 8.
- Here's a sample of how to write the number 9 as a sum of consecutive addends:  $9 = 4 + 5$  (two consecutive numbers);  $9 = 2 + 3 + 4$  (three consecutive numbers)
- The number 12 can only be written one way using consecutive numbers:  $12 = 3 + 4 + 5$ .
- The number 15 can be written as the sum of consecutive numbers in three different ways.  
 $15 = 1 + 2 + 3 + 4 + 5$  (five consecutive numbers);  $15 = 4 + 5 + 6$  (three consecutive numbers);  $15 = 7 + 8$  (two consecutive numbers)
- In this investigation, you will find all the possible ways to write each of the numbers from 1-25 as the sum of consecutive numbers: 1, 2, 3, 4, and so on. Look for patterns.
- Which numbers can be written...
  - as the sum of only two consecutive numbers?
  - as the sum of three consecutive numbers?
  - as the sum of four consecutive numbers?
  - as the sum of five consecutive numbers?
- Are there any numbers that cannot be written as the sum of consecutive numbers? Explain.

### Extensions:

- Find the possible sums for 1-25 by adding consecutive odd numbers.
- Find the possible sums for 1-25 by adding consecutive even numbers.

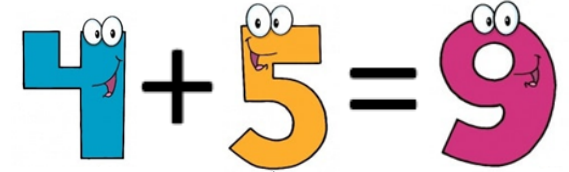
### Assessment:

Grade will be determined by the following:

- Completion of That's Sum Challenge Recording Sheet and answers to questions.

# That's SUM Challenge!

## Recording Sheet



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

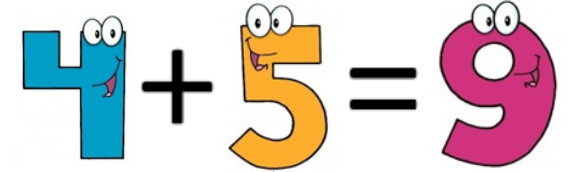
Sum	Two Consecutive Numbers	Three Consecutive Numbers	Four Consecutive Numbers	Five Consecutive Numbers	Six Consecutive Numbers
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



Sum	Two Consecutive Numbers	Three Consecutive Numbers	Four Consecutive Numbers	Five Consecutive Numbers	Six Consecutive Numbers
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

# That's SUM Challenge!

## Teacher Answer Sheet



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

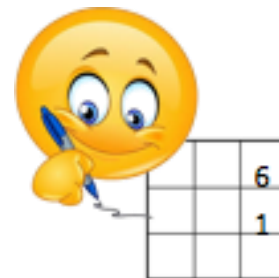
Sum	Two Consecutive Numbers	Three Consecutive Numbers	Four Consecutive Numbers	Five Consecutive Numbers	Six Consecutive Numbers
0					
1	0 + 1				
2					
3	1 + 2	0 + 1 + 2			
4					
5	2 + 3				
6		1 + 2 + 3	0 + 1 + 2 + 3		
7	3 + 4				
8					
9	4 + 5	2 + 3 + 4			
10			1 + 2 + 3 + 4	0 + 1 + 2 + 3 + 4	

Sum	Two Consecutive Numbers	Three Consecutive Numbers	Four Consecutive Numbers	Five Consecutive Numbers	Six Consecutive Numbers
11	$5 + 6$				
12		$3 + 4 + 5$			
13	$6 + 7$				
14			$2 + 3 + 4 + 5$		
15	$7 + 8$	$4 + 5 + 6$		$1 + 2 + 3 + 4 + 5$	$0 + 1 + 2 + 3 + 4 + 5$
16					
17	$8 + 9$				
18		$5 + 6 + 7$	$3 + 4 + 5 + 6$		
19	$9 + 10$				
20				$2 + 3 + 4 + 5 + 6$	
21	$10 + 11$	$6 + 7 + 8$			$1 + 2 + 3 + 4 + 5 + 6$
22			$4 + 5 + 6 + 7$		
23	$11 + 12$				
24		$7 + 8 + 9$			
25	$12 + 13$			$3 + 4 + 5 + 6 + 7$	

# Math Investigation Center

## Magic Squares

Units of Study 4, 5, and 6



**Core Correlation:** 2.NBT.5

**DOK:** 3; **Proficiency Level:** 4

**Type of Activity:** Math and Literature

**Materials:** Ben Franklin and the Magic Squares by Frank Murphy, 3 by 3 Magic Square Activity Sheet, 4 by 4 Magic Squares Activity Sheet, Magic Square Template Activity Sheet, pencil

**Introduction:** Experience the magic of math using magic squares.

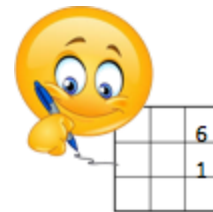
### Instructions:

- Read or listen to the story, Ben Franklin and the Magic Squares by Frank Murphy. <https://www.youtube.com/watch?v=-bSwsh259Vs>
- Ben Franklin was fascinated with the relationship between numbers placed on a grid. These grids are known as magic squares. A magic square is where all the columns, rows, and diagonals add up to the same number.
- Complete the 3 by 3 Magic Square Activity Sheet.
- Complete the 4 by 4 Magic Square Activity Sheet.
- Create your own magic square on the Magic Square Template Activity Sheet.

### Assessment:

Grade will be determined by the following:

- Completion of Magic Squares Activity Sheets



# 3 by 3 Magic Squares

## Activity Sheet

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

Complete these "Magic Squares."

		2
1	5	9
	3	

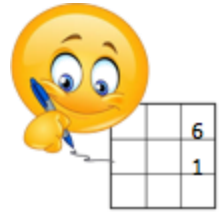
19		
	20	
	22	21

	21	
	15	
	9	24

10	11	6
		13

# 4 by 4 Magic Squares

## Activity Sheet



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

Complete these "Magic Squares."

13	2	7	12
3			6
10		4	15

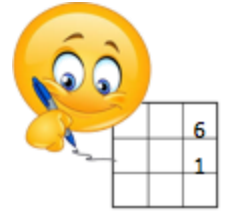
24	27		
	18	23	
19	34	25	
26			33

19			
10	13		7
	11		17
5	18	15	12

19		14	
	13	30	
28	18	20	15
12			

# Magic Square Template

## Activity Sheet



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

Create your own "Magic Square" using the number 42 as your magic number.


# Math Investigation Center

## What's the Difference?

Units of Study 4, 5, and 6

Core Correlation: 2.NBT.7

DOK: 2; Proficiency Level: 3

Type of Activity: Math and Games

Materials: three 10-sided dice (0-9) per player, What's the Difference Recording Sheet, pencil

Introduction: Use your math skills to win a game by finding differences between numbers.

### Instructions:

1. Each player rolls three 10-sided dice and arranges them to make the largest 3-digit number possible.
2. The player with the largest 3-digit number wins the round.
3. The winner of the round is awarded points equal to the difference of the 3-digit numbers.

For example: If Player 1 rolls a 5, 1, and 7, they could make the number 751. If Player 2 rolls a 3, 0, and 2, they could make the number 320. Player 1 would score  $751 - 320$  or 431 possible points for that round.

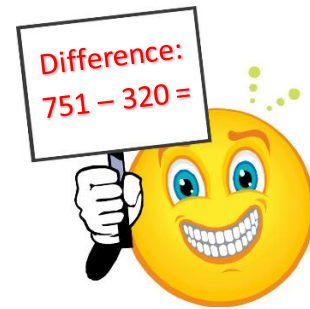
The player with the highest number would say, "I have \_\_\_ (751) you have \_\_\_ (320). The difference is \_\_\_ (431). I win \_\_\_ (431) points for this round."

4. The game can be played until a Player achieves a preset total such as 1,000 points, a preset number of rounds is played, or until a preset time is reached.

### Assessment:

Grade will be determined by the following:

- Completion of What's the Difference Recording Sheet







# Math Investigation Center

## Two-Digit Turn Around

Units of Study 4, 5, and 6

Core Correlation: 2.NBT.5

DOK: 3: Proficiency Level: 4

Type of Activity: Math and Logic

Materials: pencil, paper



**Introduction:** What happens when a two-digit number is subtracted a certain way? You will discover interesting patterns in this investigation.

### Instructions:

- Start with a two-digit number where the first digit, the digit in the tens place, is greater than the second digit. (e.g., 63)
- Reverse these two digits and subtract this number from the original number.

For example:

$$\begin{array}{r} 63 \\ - 36 \\ \hline 27 \end{array}$$

- Look at the difference.
- Repeat this process with another two-digit number. Continue with several problems.
- What interesting patterns do you notice?
- Explore what happens when this process is applied to 3-digit numbers. What patterns do you notice?

For example:

$$\begin{array}{r} 432 \\ - 234 \\ \hline 198 \end{array}$$

### Assessment:

Grade will be determined by the following:

- Completion of subtraction problems.
- Explanation of patterns.