

Math Challenge #1



First Name: _____ Last Name: _____ Grade: _____

Teacher: _____ Parent's email: _____

Numbers and Digits

Welcome to Math Challenge #1. In this first challenge, try to discover the missing digit(s) or number(s). Get familiarized with the different strategies of problem solving www.mathinaction.org. Ask your sibling or an adult for help if you get stuck.

Numbers vs Digits

The difference between a digit and a number is similar to the difference between a letter or a character and a word. Just like alphabetical letters make words, digits make numerals, which is a representation of a number.

- Numbers are made up of digits, and digits make numbers.
- A digit is a symbol, and number may consist of one or more digits.
- A number has a numerical value, while a digit is just a representation.

Kinder & First Grade: solve at least 3 problems.

Second & Third Grade: solve at least 7 problems.

Fourth Grade and above: solve at least 12 problems.

Problems

Answer:

1. What is the number that is covered by the flower? $9 + \text{flower} = 15$	
2. If you arrange the following numbers from least to greatest, which would be the 4 th number? 13 21 14 31 32 23	
3. Look at the pattern below. What are the missing numbers? 2, 7, 12, ____, ____, 27, 32, 37	
4. What is the missing digit? $\begin{array}{r} 3 \boxed{?} \\ + 9 \\ \hline 44 \end{array}$	
5. If you add 211 and 221, which digit will be in the tens place?	
6. What number represents the value of $\text{bee} + \text{ladybug}?$ $\text{bee} \times \text{bee} = 81$ $\text{ladybug} \times \text{ladybug} = 49$	
7. Joy wrote a one-digit number then wrote an additional digit to its right. She subtracted 5 from this number and got 29. What was the number Joy wrote first?	
8. What is the number that is covered by the star? $6 \times \text{star} = 13 + 41$	
9. The number on Mr. Sarwono's motorcycle license plate has three digits. The product of the digits is 216. The sum of the three digits is 19. What is the greatest three-digit number that could be on his license plate?	

10. Behind these four cards is a four-digit number. Each card contains a digit. The digit in the ones place is the largest possible single digit number. The digit in the hundreds place is the smallest odd number. The digit in the tens place is 1 less than the digit in the ones place. The digit in the thousands place is the sum of the digits in the hundreds and tens places. Find this four digit number.



11. George wrote three numbers on three different cards. The sum of the three numbers is 3500. The first number is 525 more than the second number. The second number is 158 less than the third number. What are the three numbers?

12. Angela is trying to remember a three-digit number lock for her suitcase. She knows that it is between 100 and 115. When she divides the three-digit number by 6, it gives her a remainder of 4. When she divides the three-digit number by 3, she gets a remainder of 1. Help Angela remember the three-digit number.



13. Study this pattern: $4+5+6+7+8 = 30$
 $5+6+7+8+9 = 35$
 $6+7+8+9+10 = 40$
 Fill in the missing numbers based on the pattern above.
 $\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = 65$

14. Using the following clues, find the two 2-digit numbers covered by the hands.
- When you divide each number by 5, there will be a remainder of 3.
 - When you divide each number by 8, there will be a remainder of 3.



15. Complete the addition using different digits for different letters. A = 7, D = 5, M = 9, T = 4. Find the value of "SHARP".

$$\begin{array}{r}
 \text{A D D} \\
 \text{I T} \\
 \text{U P} \\
 \text{M A T H} \\
 + \quad \text{I S} \\
 \hline
 \text{S H A R P}
 \end{array}$$

16.  Using the clues below, what number is Y?
- Y is a two digit-prime
 - Y + 3 is a perfect square
 - Y + 6 is the next greater two-digit prime

17. Sylvia, who was born in 2008, asked Mr. Harris, "How old were you in the year I was born?" "My age was the sum of all the digits of my year of birth," replied Mr. Harris. How old was he in 2008?