

Whole Numbers: Addition

Vocabulary

Natural Numbers	Commonly called the counting numbers: 1, 2, 3, 4, 5, 6, ...
Whole Numbers	Natural Numbers and zero: 0, 1, 2, 3, 4, 5, 6, ...
Addition	Combining two or more groups of similar objects together
Plus “+”	Symbol used to signify addition
Addends	The objects added together
Sum	The result of addition

Example: 5 + 3 = 8
 Addend plus addend equals sum

NOTE: It is extremely important for you to be able to quickly add two whole numbers together in your mind. Practice completing the following chart as quickly as you can. It will be more helpful to skip around the chart randomly than to complete an entire row or column at one time. Some entries have been provided for you.

TRY:

+	0	1	2	3	4	5	6	7	8	9
0										
1										
2		3								
3										
4						9				
5										
6									14	
7										
8										
9										

Properties

Commutative property of Addition - The order of two numbers around the addition sign does not affect the sum.	$a + b = b + a$	$5 + 4 = 4 + 5$
Associative property of Addition - The way in which several whole numbers are grouped when they are added, does not affect the final sum.	$(a + b) + c = a + (b + c)$	$(3 + 4) + 5 = 3 + (4 + 5)$
Identity property of Addition - When 0 is added to any number, the sum is ‘identical’ to the original number. 0 is the identity element for addition. It is also called the additive identity.	$a + 0 = 0 + a = a$	$4 + 0 = 0 + 4 = 4$

Applying the Associative property of Addition we can group numbers differently to make addition easier.

Add: $(4 + 9) + 6$ If we write: $(4 + 6) + 9$ We have $10 + 9$ or 19

Addition is often easier if groups of 10 can be formed.

TRY:

$7 + 0 = \underline{\quad}$

$7 + 4 + 3 = \underline{\quad}$

$8 + 9 + 2 = \underline{\quad}$

$6 + 7 + 2 + 3 + 8 + 4 = \underline{\quad}$

<p>When adding larger numbers, be sure to add the digits of the same place value.</p> <p>If the sum of the column is equal to or greater than the place value of the next column, be sure to "carry" to the next column.</p>	<table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right; padding-right: 20px;">6732</td> <td style="text-align: right;">121 <i>carry</i></td> </tr> <tr> <td style="text-align: right;">+ 243</td> <td style="text-align: right;">5397</td> </tr> <tr> <td style="text-align: right; border-top: 1px solid black;">6975</td> <td style="text-align: right;">886</td> </tr> <tr> <td></td> <td style="text-align: right;">+ 6473</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">12756</td> </tr> </table> <p style="text-align: right;">Did you group the 10's?</p>	6732	121 <i>carry</i>	+ 243	5397	6975	886		+ 6473		12756
6732	121 <i>carry</i>										
+ 243	5397										
6975	886										
	+ 6473										
	12756										

TRY:

$$\begin{array}{r} 4936 \\ 395 \\ + 144 \\ \hline \end{array}$$

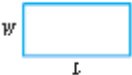

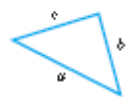
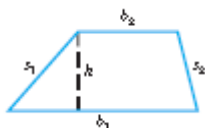
$$\begin{array}{r} 7302 \\ 303 \\ + 768 \\ \hline \end{array}$$

Words that Indicate Addition	Expression	Sum
The sum of seven and four	$7 + 4$	11
Three is added to fourteen	$14 + 3$	17
Five more than eight	$8 + 5$	13
Six increased by two	$6 + 2$	8
The total of five and nine	$5 + 9$	14

TRY:

Words that Indicate Addition	Expression	Sum
The total of six and twenty-one		
Eight more than three		
The sum of sixty and fifty		
Two is added to seventeen		
Five increased by Fifty		

Vocabulary

TYPE	FIGURE	Perimeter: The distance around a figure Perimeter Formulas:
Rectangle		$P = 2l + 2w$
Square		$P = 4s$
Triangle		$P = a + b + c$
Trapezoid		$P = s_1 + s_2 + b_1 + b_2$

Problems:

- JC needs to put a wood border around the perimeter of a rectangular living room that is 12 feet wide by 23 feet long. How much wood border will be needed to go around the room?
Statement: $P = 12 + 23 + 12 + 23$ Sentence answer: JC needs 70 feet of wood border.
- Reservations have now closed for the four upcoming shows with 25, 22, 26, and 28 planning to attend. How many total people are expected to attend the shows?
Statement: $T = 25 + 22 + 26 + 28$ Sentence answer: A total of 101 people are expected to attend.

TRY:

- Ti walked around the perimeter of a triangular lot that has sides of 17 yards, 25 yards, and 19 yards. How far did Ti walk?
Statement: Sentence answer:
- Five sections of Algebra were offered during the spring with enrollments of 26, 28, 24, 29, and 22. What was the total number of students enrolled in Algebra during the spring?
Statement: Sentence answer: