

**MATH LEVEL 1**  
**LESSON PLAN 3**  
**SUBTRACTION**

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**Section 1: Subtraction using the “Gap Method”**

1. Knowing the process of addition we may fill the gaps left by missing digits.

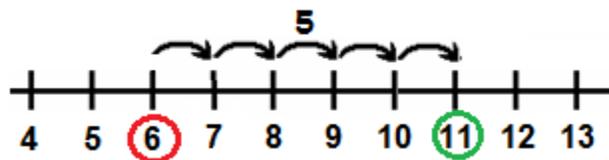
😊 **EXERCISE**

Try and fill the missing digits (stars) in the following two additions.

<b>(a)</b> ★22★ 1★★1 —— 3489 ——	<b>(b)</b> 113 6★4 14★ ★26 —— ★410 ——
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Answer: (a)  $2228 + 1261 = 3489$  (b)  $113 + 624 + 147 + 526 = 1410$

2. SUBTRACTION provides the difference between two numbers. As shown below, the difference between 6 and 11 is the gap of 5.



We may write this in the form of addition as,

$$6 + 5 \text{ (gap)} = 11$$

Traditionally, this is written in the form of subtraction as follows.

$$11 - 6 = 5 \text{ (gap)}$$

In other words, we can subtract by finding the gap through addition.

😊 **EXERCISE**

Subtract by counting the gap from smaller to the larger number.

- |                           |                            |                            |
|---------------------------|----------------------------|----------------------------|
| (a) $3 + \text{gap} = 9$  | (c) $35 + \text{gap} = 39$ | (e) $68 + \text{gap} = 71$ |
| (b) $8 + \text{gap} = 11$ | (d) $49 + \text{gap} = 53$ | (f) $88 + \text{gap} = 96$ |

Answer: (a) 6 (b) 3 (c) 4 (d) 4 (e) 3 (f) 8

3. We may subtract larger numbers, such as, “ $88 - 57 = \text{gap}$ ” by reverse addition also.

$$57 + \text{gap} = 88$$

In this case we get the help by using columns as follows

	5	7	
+	*	*	
<hr/>			
	8	8	

smaller number  
gap  
larger number

	5	7	
+	3	1	
<hr/>			
	8	8	

$$57 + 31 (\text{gap}) = 88$$

Therefore:  $88 - 57 = 31 (\text{gap})$

4. When the bottom digit is smaller we increase it by 10. Then we carry over the “ten” to the next column as in addition.

Example:  $623 - 387 = (\text{gap})$

$$387 + (\text{gap}) = 623$$

	3	8	7	
+	*	*	*	
<hr/>				
	6	12	13	

		<sup>1</sup>	<sup>1</sup>	
	3	8	7	
+	2	3	6	
<hr/>				
	6	2	3	

$$387 + 236 = 623$$

Therefore:  $623 - 387 = 236$

5. We can write the above solution in subtraction format as follows:

			6	12	13
(subtract)			3	8	7
(gap)			2	3	6

The steps of reverse addition are:

- (1) We start from rightmost column.
- (2) The top number 3 is less than the bottom number 7, so we put 1 in front of 3 to make it 13. Ask, “7 + what = 13?” This gives us 6. We put down 6 for gap in that column.
- (3) Carry over that 1 from 13 to the bottom number 8 in next column to the left, which makes it 9. Top number 2 is less than 9 so we make it 12. Ask, “9 + what = 12?” This gives us 3. We put down 3 for gap in that column.



Logic: Odometer reading will increase with the trip. The reading went up from 67,856 to 71,304 miles. Therefore, the miles driven on this trip is the gap between these two numbers.

Miles driven on the trip =  $71,304 - 67,856 = 3,448$  miles      *Answer.*

## 😊 EXERCISE

**A. Do the following word problems. Check your answer against the answers given.**

**(a) The truck delivered apricots to the store. 3758 from 15450 apricots got rotten. How many apricots are left for sale?**

**(b) The area of the globe is 196,096,060 square miles, of which 143,621,181 square miles is water. How much land is there?**

**(c) Washington was born in 1732; Franklin was born 26 years earlier, and dies at the age of 84. In gap year did he die.**

*Answer: (1) 11,692 (2) 52,474,879 (5) 1790*

## 😊 **Lesson Plan 3: Check your Understanding**

- 1. How is subtraction related to addition?**
- 2. In January, a merchant bought goods to the amount of \$2,675; in February \$4,375; and in March \$1,897. After making one payment of \$3,000, and another of \$4,947, how much did he still owe?**
- 3. Four men bought a farm for \$10,000. The first paid \$2,150, which was \$375 less than the second paid; the third paid \$125 less than the second. What did the fourth pay?**

***Check your answers against the answers given below.***

### **Answers**

- 1) Subtraction is "reverse addition."
- 2) \$1,000
- 3) \$2,925.