
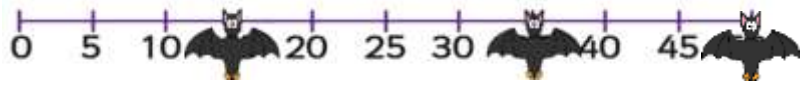



# Math Challenge #3

First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

## Happy Halloween!

**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.**

		<i>Answer</i>
1.	While trick-or-treating, Mia got 6 candies. Joel got 3 candies, and Dan got 2 more candies than Joel. How many candies did they get altogether? $6 + 3 + 5 = 14$	<i>14 [candies]</i>
2.	Eliza has a sheet of halloween stickers (below). Which sticker does she have the most of?  <div style="margin-left: 20px;">                         Pumpkin: 4                          Bat: 6                          Dracula: 5                          Witch: 3                          Zombie: 5                     </div>	<i>bat</i>
3.	Laura wants to make her own Halloween costume. She will put a total of 12 flowers on her skirt. If there are already 3 flowers on it, how many more flowers does she need to put on her skirt? $12 - 3 = 9$ more flowers	<i>9 [flowers]</i>
4.	The store has 15 pumpkins left to sell. Ella's family is getting 3 pumpkins and Mike's family is buying 4 pumpkins to carve. How many pumpkins are left at the store? $15 - 3 - 4 = 8$ pumpkins left	<i>8 [pumpkins]</i>
5.	What is the sum of the numbers hiding under the bats?  $15 + 35 + 50 = 100$	<i>100</i>
6.	Two hands have $27 + 27 = 54$ bones. Two feet have $26 + 26 = 52$ bones. The number of bones that are not in the hands and feet: $206 - 54 - 52 = 100$ Or $206 - (54 + 52) = 100$	<i>100 [bones]</i>





7.  2, 3, and 4 (any order)

Think: which numbers that are divisible into 24? Or what are factors of 24?  
 Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24.  
 The three numbers that can multiply together to get 24 are 2, 3 and 4.


8. 

				= 11
				= 8
				= 6
				= 8

 The first object you can solve is the witch.  
 $\text{Witch} = 8 \div 4 = 2$  (bottom row)  
 You can then solve the cat.  
 Two cats plus  $(2 + 2) = 6$ . So,  $\text{Cat} = 1$   
 $\text{Witch} = 8 - 2 - 2 = 4$   
 $\text{Pumpkin} + \text{Pumpkin} = 11 - 1 - 4 = 6$   
 $\text{Pumpkin} = 6 \div 2 = 3$

 = 4  
 = 3  
 = 1  
 = 2

9. It's more than 31 and less than 35. Since it's an odd number, it must be 33. 33 [ghosts]

10.   
 $2\frac{1}{5} + 2\frac{4}{5} = 4\frac{5}{5} = 5$  5





11.  $8, 8 \times 2 = 16, 16 \times 2 = 32, 32 \times 2 = 64, 64 \times 2 = 128, 128 \times 2 = 256, 256 \times 2 = 512, 512 \times 2 = 1024$  7 [years]

1 year    2 years    3 years    4 years    5 years    6 years    7 years

12. 





























				= 24
				= 26
				= 20
				= 23









 We can start with the second row.  
 $2 \text{ haunted houses} + 2 \text{ skulls} = 26$   
 Thus,  $\text{Haunted house} + \text{Skull} = 13$   
 Then using this info, from the first row:  
 $\text{Witch} + \text{Haunted house} = 24 - 13 = 11$   
 3<sup>rd</sup> row will give  $\text{Apple} + \text{Witch} = 20 - 11 = 9$   
 Finally, the last row will end up  
 $\text{Skull} + \text{Skull} = 23 - 9 = 14$ .  
 Now we can find everything  
 $\text{Skull} = 7$      $\text{Witch} = 11 - 6 = 5$   
 $\text{Haunted house} = 13 - 7 = 6$      $\text{Apple} = 9 - 5 = 4$

 = 5  
 = 4  
 = 7  
 = 6











13.  $N + H + V = 156$ , but  $N + H = 110$ , thus  $V = 156 - 110 = 46$  cupcakes  
 $N + H + V = 156$ , but  $N + V = 94$ , thus  $H = 156 - 94 = 62$  cupcakes  
 To find for Nate  $N + H = 110$ , but  $H = 62$ , thus  $N = 110 - 62 = 48$  cupcakes

Nate = 48 [cupcakes]  
 Hema = 62 [cupcakes]  
 Vicky = 46 [cupcakes]

14.  ÷  =   
 -  = 4  
 16 =  ×   
 =  ÷   
 +  =  ×   
 +  =   
 ×  = 56  
 +  =  ×   
 ÷  = . So,  = 3 and  is 9.

First, solve the cat. =4. Then we can guess and check the bat (7 or 8). The bat cannot be 8 since it makes the stripe candy to have the same value as the cat (4). So,  = 7 and  = 8. Then we solve the witch's hat and the stripe candy:  ÷  = . So,  = 3 and  is 9.

Cat = 4, Pumpkin = 0, Stripe candy = 3, One-eye creature = 2, Candy Corn = 6, Bat = 7  
 Red-orange candy = 8, Ghost = 5, Witch's Hat = 9, Spider = 1

 = 4     = 1  
 = 0     = 5  
 = 3     = 7  
 = 2     = 9  
 = 6     = 8

15. There were  $26 \times 4 = 104$  houses on all 4 streets.  
 The fourth street had  $104 - 28 - 28 - 21 = 27$

27 [houses]

16. Converting 4 hours and 30 minutes to minutes results in  $4 \times 60 + 30 = 270$  minutes.  
 To figure out the number of songs needed, divide the time by the length of each song:  
 $270 \div 3.25 = 84$  (rounded up). Rounding up is needed or there might be a bit of a quiet  
 period at the end of the dance. Gamora would probably be best advised to gather a  
 few extra songs just in case.

84 [songs]

17. We can make an organized list


House	5	10	15	20	25	30	35	40	45	50	55	60
Ate 2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	
What's left	3	8	13	18	23	28	33	38	43	48	53	60

In total, you end up with  $3 + 8 + 13 + 18 + 23 + 28 + 33 + 38 + 43 + 48 + 53 + 60 = 368$   
 candies

Another way to solve it:  
 You noticed the pattern:  $5 + 15 + 20 + \dots + 60 = (5+60)12/2 = 65 \times 6 = 390$  candies  
 But you had two candies between each house, which means you ate  $2 \times 11 = 22$  candies  
 $390 - 22 = 368$  candies are left.

368 [candies]

18. Each year, I trick or treat on a rectangular block in my town. The length of one side of  
 the block is two times the length of the other side. If the perimeter of the entire block  
 is 564 yards, how long is each side?  
 We can draw it out.



$w = l + l$   
 The perimeter equals  $6l$ .  $6l = 564$  yards, thus the length is  $564 \div 6 = 94$  yards,  
 Width =  $94 \times 2 = 188$  yards.

94 [yards] length  
 188 [yards] width

Solution is available on November 4, 2022  
[www.mathinaction.org](http://www.mathinaction.org)