

## Twenty into Six

<https://nrich.maths.org/1047>

Solution by Riley and Milan, Lyneham Primary School (dictated to Gina 9 March 2018)

Add up all of the cards and see what they make.

Then divide the total into 6.

That will be the answer for the pile total.

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 = 210$$

$$210 \text{ divided by } 6 = 35$$

Now make each of the piles equal 35.

We found 4 different ways to do it

10, 20, 5

19, 11, 2, 3

13, 7, 15

17, 18

14, 16, 4, 1

12, 8, 6, 9

20, 11, 4

10, 14, 6, 5

18, 2, 15

16, 19

1, 13, 12, 9

8, 7, 17, 3

5, 20, 10

15, 7, 2, 11

16, 19

8, 12, 9, 6

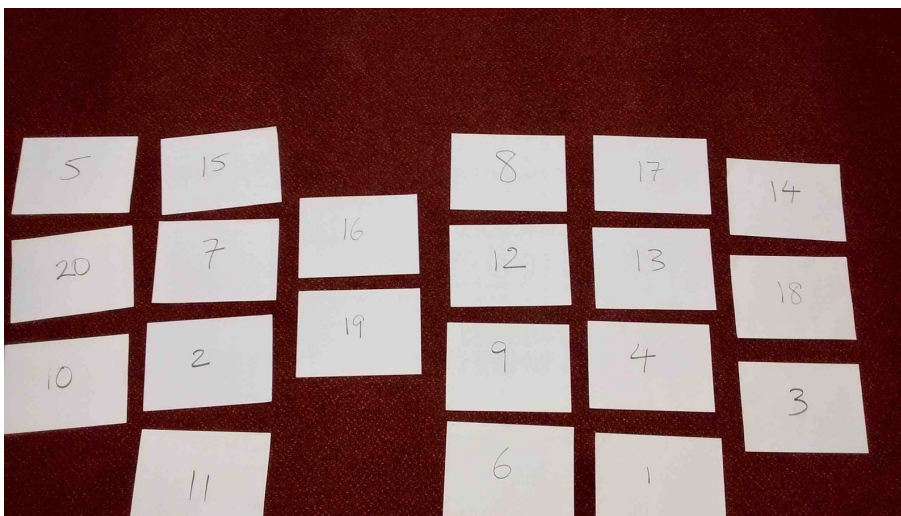
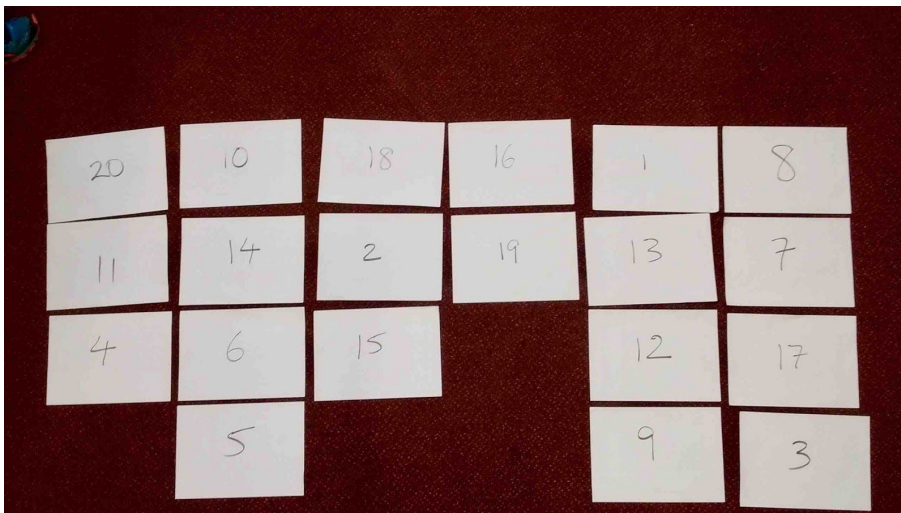
17, 13, 4, 1

14, 18, 3

Plus one other one which we forgot to record.

$10 + 20 + 5$   
 $19 + 11 + 2 + 3$   
 $13 + 7 + 15$   
 $17 + 18$   
 $14 + 16 + 4 + 1$

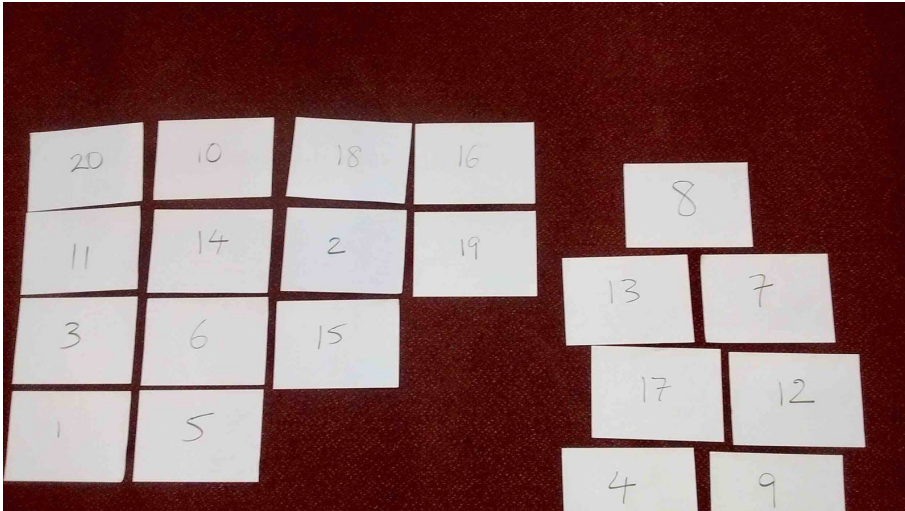
~~17~~ ~~3~~ ~~16~~ ~~18~~ ~~19~~  
~~11~~ ~~13~~ ~~14~~ ~~15~~ ~~16~~  
~~18~~ ~~19~~ ~~20~~  
 $12 + 8 = 20$   
 $+ 6 + 9$



Plus one other one which wasn't photographed

You might want to use the bigger numbers first, or you get left with all the big numbers and it will be way over 35.

If you do get stuck with the big numbers, you might want to do some swapping. For example, 3 and 1 for 4. We found one way which didn't work, and we had to do some swapping to make it work.



Gina's note : After swapping the 3 and the 1 for the 4, this became the basis of the second solution recorded above.