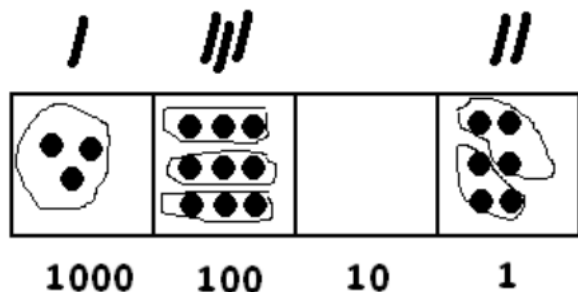


1 Division using Exploding Dots

To divide with exploding dots, first write your number using boxes that follow the $1 < - 10$ rule. Then look for groups of dots depending on the number that you are dividing by. For example, if you were dividing by 3, look for groups of three dots and circle them. Depending on how many circles you have in the end in each box depends on what the example will be. Then you continue looking for groups of dots and continue circling them as you go towards the right. In the end, put the number of circles above each box, which gives you your answer.



1. Use exploding dots to divide by 3.

2. Use exploding dots to divide by 3.

If you do not have enough dots in one box to form a group, then you can un-explode them (move them to the right) to make groups of three with no more "leftover" dots. For example, if you were given the number 402, then you would have four dots in the first box. If you group 3 of the together in the 1st box on the left, you would still have one dot left. Therefore, you could un-explode this dot into 10 dots in the box to the right. After finding 3 groups of three in this 2nd box, you would have one dot left over. Then, you could un-explode that dot into the next box to the right, resulting in 12 dots in that box (10 that you got from un-exploding the dot in the box to the right and 2 dots from the one's digit of 402). Then, in the end, you would get an answer of 134.

1. Use exploding dots to divide by 3.

2. Use exploding dots to divide by 3.

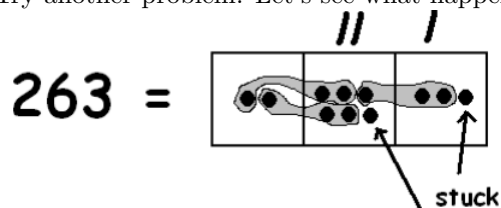
3. Use exploding dots to divide by 3.

4. Use exploding dots to divide by 3.

5. Use exploding dots to divide by 3.

2 Division with Remainders

Try another problem. Let's see what happens when you use exploding dots to divide 263 by 12?



What happens if you have leftover dots in the rightmost box? What do you think these dots represent? This is called a remainder. These "stuck" dots cannot be divided.

This means we have a remainder of 11. 263 divided by 12 is $21R11$.

Try a few problems by yourself!

1. Use exploding dots to divide by 3.

2. Use exploding dots to divide by 3.

3. Use exploding dots to divide by 3.