

# Diving into Mastery – Diving

## Adult Guidance with Question Prompts

Children use partitioning, practical equipment and drawings to subtract 2-digit numbers from 2-digit numbers, not crossing the tens boundary. They should be able to draw base ten blocks and then use the drawing to support their mental calculation by crossing out tens and ones. They only need to represent the larger number in blocks and then cross off the blocks which represent the smaller number. Make sure children start by subtracting ones when doing columnar subtraction.

Which blocks do we need to cross out to subtract fourteen?

How many tens and how many ones?

How do you know?

When we are doing subtraction in a column, do we start with the ones or with the tens?

What happens if we are left with no ones?

What do we write to show that?

When we are drawing base ten blocks, which number do we need to represent: 12, 36 or both?

Can you draw base ten blocks to represent 36?

How many tens and ones will you need to draw?

How do you know?



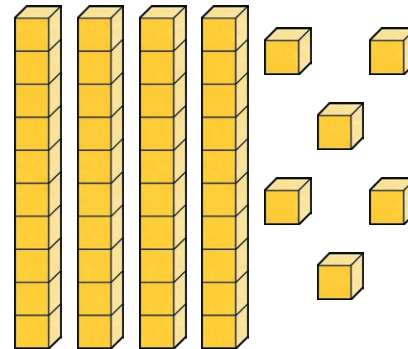
visit [twinkl.com](https://www.twinkl.com)



## Subtract 2-Digit Numbers – Not Crossing Ten



Cross out the base ten blocks to subtract 14 from 46.



	7	5
-	4	2

$$58 - 32 = \underline{\quad}$$

Draw base ten blocks and use your pictures to calculate 36 minus 12.

$$89 - 59$$

$$9 \text{ ones} - \underline{\quad} \text{ ones} \\ = \underline{\quad} \text{ ones}$$

$$\underline{\quad} \text{ tens} - 5 \text{ tens} \\ = \underline{\quad} \text{ tens}$$

There are  $\underline{\quad}$  tens  
and  $\underline{\quad}$  ones.

$$\text{So } 89 - 59 = \underline{\quad}$$

# Diving into Mastery – Deeper

## Adult Guidance with Question Prompts

Children may need base ten blocks to help them if they are not confident going straight to the drawing stage. They should recognise that only the larger number should be made up from blocks and not both numbers.

How do we know from looking at Amy's answer that she is wrong?

What numbers has Amy represented with base ten blocks?

Should she have represented both numbers?

What should she have done?

Can you show me in a drawing?

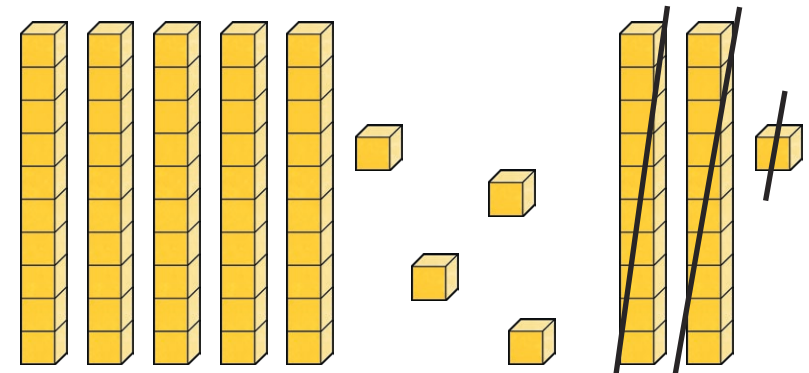
How will you use your drawing to find the answer?

## Subtract 2-Digit Numbers – Not Crossing Ten



Amy has used base ten blocks to calculate this subtraction:

$$54 - 21$$



$$54 - 21 = 54$$

Amy has made a mistake.

Explain what she has done wrong.

Draw base ten blocks to show Amy what she should have done and use them to find the answer.



# Diving into Mastery – Deepest Adult Guidance with Question Prompts

Children solve the problem to identify the 2-digit number that is missing from the function machine. They could represent what is happening in the function machine with base ten blocks.

What operation is the function machine carrying out?

How do you know?

Can you prove it?

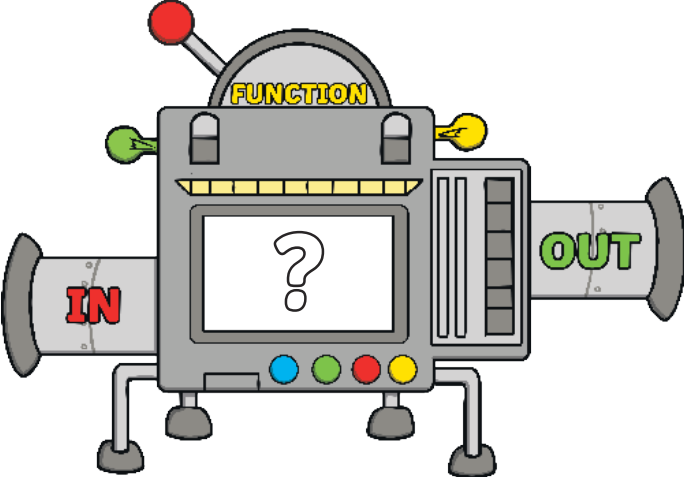
Can you show what is happening with base ten blocks?

Can you create your own function machine like this?

## Subtract 2-Digit Numbers – Not Crossing Ten



What is the rule for the function machine?  
Explain how you know.



A cartoon function machine with an 'IN' slot on the left and an 'OUT' slot on the right. The machine has a screen in the center with a question mark. It has four legs and a 'FUNCTION' dial on top. To the left of the machine are five circles containing the numbers 54, 99, 65, 72, and 27. To the right are five circles containing the numbers 33, 78, 44, 51, and 6.

54	33
99	78
65	44
72	51
27	6

Create your own function machine  
that subtracts a 2-digit number.