



# Forming Expressions



# Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



**Diving**



**Deeper**



**Deepest**

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

# Aim

- Use simple formulae.



Rhys uses cubes to write expressions for function machines. Draw the missing cubes and write the input and expression.

Input  $+ 6$  Output

$y$   $y + 6$

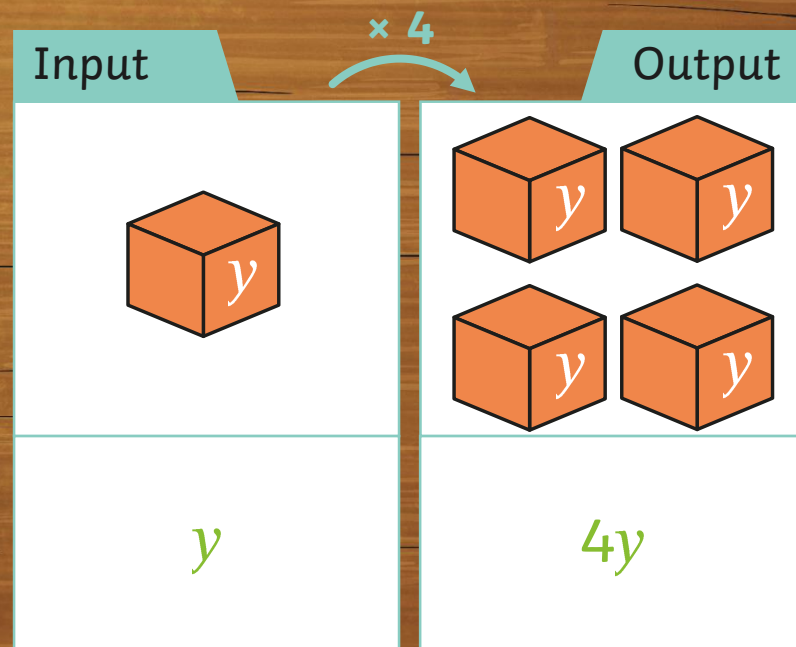
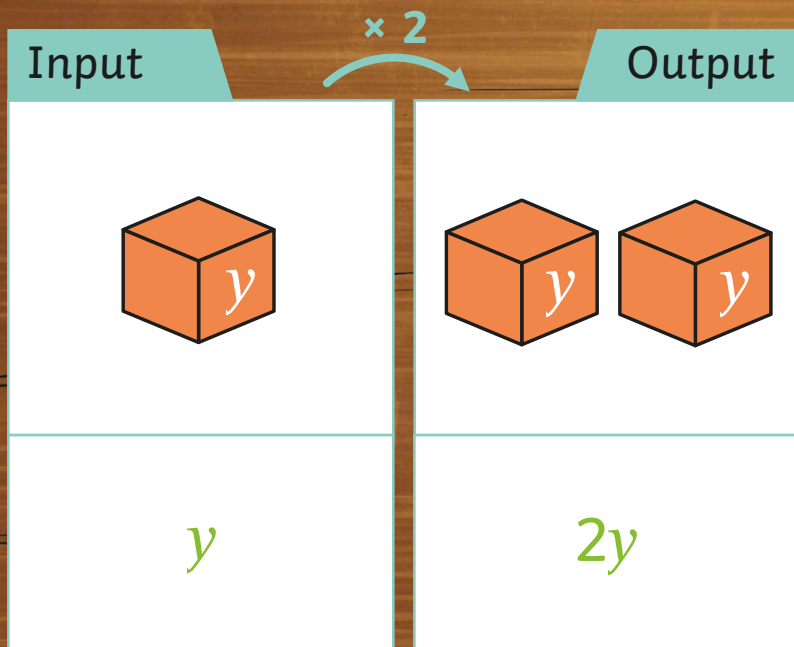
Input  $+ 4$  Output

$y$   $y + 4$





Rhys uses cubes to write expressions for function machines. Draw the missing cubes and write the inputs and expressions.



$\times 2$

$\times 4$



Rhys uses cubes to write expressions for function machines. Draw the missing cubes and write the inputs and expressions.

Input  $\times 2, + 3$  Output

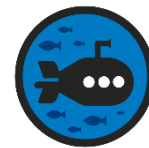
$y$   $2y + 3$

Input  $+ 3, \times 2$  Output


$y$   $2(y + 3)$

$\times 2, + 3$

$+ 3, \times 2$



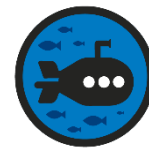
Has Samir formed a correct expression to describe the number of marbles in his jar? The number of marbles in the jar to start with is represented by the letter  $m$ . Explain your reasoning.




I took half the marbles out of my jar. I then put 5 back in.

$$m \div 2 + 5$$

Samir's expression is correct.  
First, he divides the number of marbles ( $m$ ) by 2, which is the same as finding half. Then, he adds 5 to this number.



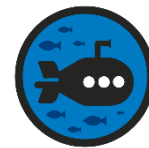
Has Caitlin formed a correct expression to describe the number of marbles in her jar? The number of marbles in the jar to start with is represented by the letter  $m$ . Explain your reasoning.



I put 10 marbles in my jar.  
I then put more in to make  
double the number of marbles.  
 $10(m + 2)$

Caitlin's expression is not correct.  
Her expression shows 2 marbles being added to the original amount  
and then this new total being multiplied by 10.  
The correct expression is  $2(m + 10)$ .





Has Joseph formed a correct expression to describe the number of marbles in his jar? The number of marbles in the jar to start with is represented by the letter  $m$ . Explain your reasoning.

I took 5 marbles out of my jar.  
I then put 20 marbles back in.

$$m + 5 - 20$$

Joseph's expression is not correct.  
His expression shows 5 marbles being added to the original amount  
and then 20 being taken out.  
The correct expression is  $m - 5 + 20$ .

