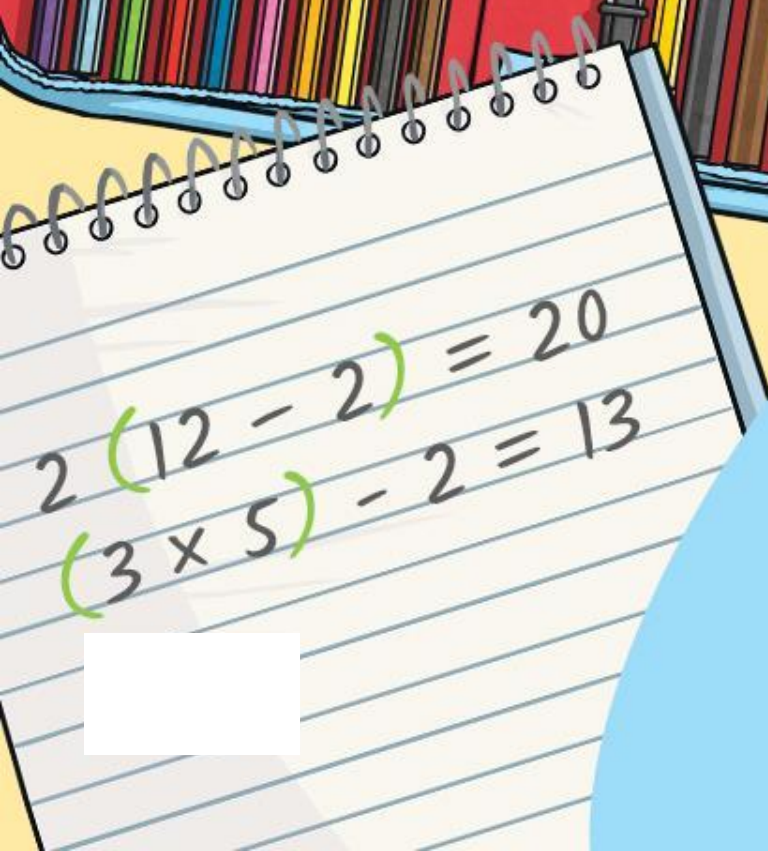
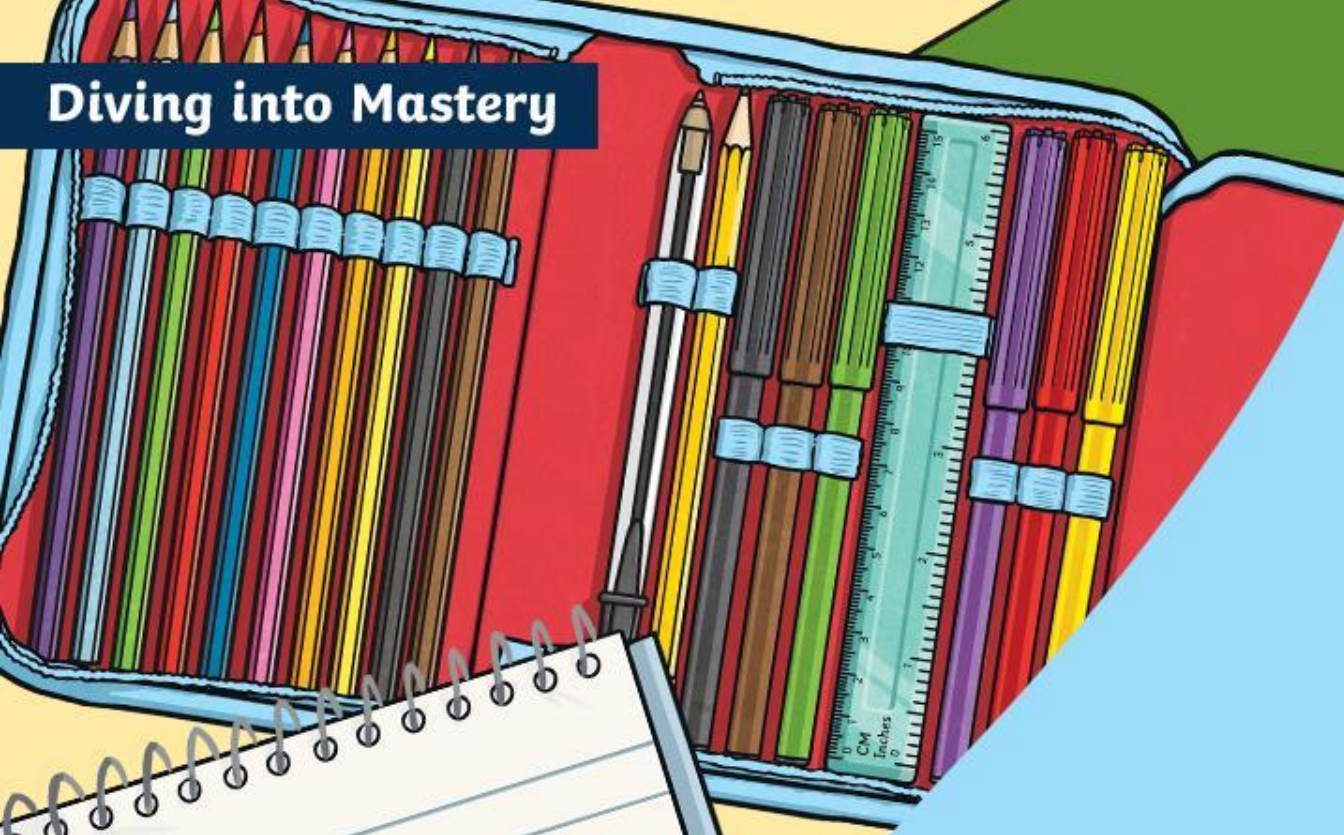


Diving into Mastery



Order of Operations

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 their knowledge of the order of operations to carry out calculations involving the four operations.

$$2(12 - 2) = 20$$
$$(3 \cdot 5) - 2 = 13$$



Remember to use BODMAS/BIDMAS to help you remember the order of operations.

Brackets	B	B	Brackets
Orders	O	I	Indices
Division	D	D	Division
Multiplication	M	M	Multiplication
Addition	A	A	Addition
Subtraction	S	S	Subtraction

Order of Operations

Diving



Add one pair of missing brackets to each of these calculations to make them correct:

$$(7 \times 6) + 144 = 586$$

$$58 - (86 + 177) = 525$$

Brackets	B
Orders	O
Division	D
Multiplication	M
Addition	A
Subtraction	S

B	Brackets
I	Indices
D	Division
M	Multiplication
A	Addition
S	Subtraction

Order of Operations

Diving



Add two pairs of missing brackets to each of these calculations to make them correct:

$$6 \times (9 - 3) \div 6 + 5 \times (5 \times 6)$$

$$(8 \times 8) - 22 = 66 + 7 (\cancel{7} \times 8)$$

Brackets	B
Orders	O
Division	D
Multiplication	M
Addition	A
Subtraction	S

B	Brackets
I	Indices
D	Division
M	Multiplication
A	Addition
S	Subtraction



Look carefully at his calculation and describe the error that has been made with the order of operations.


$$244 + (188 \div 66) = 27$$

Answer

The answer has been worked out by moving from left to right, ignoring BODMAS/BIDMAS. The correct answer is 27 as we would need to carry out the division first, followed by the addition.

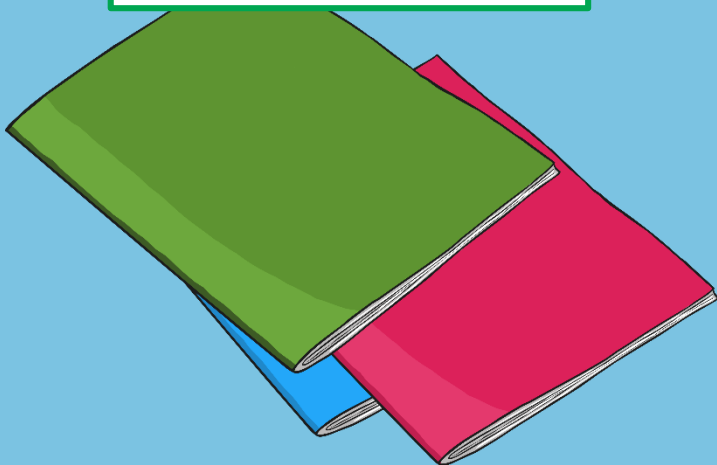


There is a special offer at a local stationery shop. A notebook is normally £8 but if you buy more than 8 notebooks, you will get £3 off the price of each one. Harry decides to buy 9 notebooks. How much will the notebooks cost Harry at the special offer price?

Which calculation will allow Harry to work out how much his notebooks will cost?

$$(9 \times 8) - 3 = \text{£}69$$

$$9 \times (8 - 3) = \text{£}45$$



For every notebook that Harry buys priced at £8, a £3 discount is applied. He buys 9 notebooks, so there needs to be 9 lots of £8 - £3.

If the first calculation were used, he would find 9 lots of £8, which is the full price of the notebook, followed by taking away just one lot of £3. This would mean that Harry only has his £3 discount on one notebook rather than all 9 notebooks.

Order of Operations

Deepest



Set 1	Set 2	Set 3
2, 3, 4	5, 6, 7	8, 9, 10

Use a number from each of the sets above to complete the number calculations below:

$$\begin{array}{c} \text{Number} \\ \text{from Set 1} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 2} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 3} \end{array} \\ \left(\boxed{2} \times \boxed{5} \right) + \boxed{10} = 20$$

$$\begin{array}{c} \text{Number} \\ \text{from Set 1} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 2} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 3} \end{array} \\ \left(\boxed{3} \times \boxed{6} \right) + \boxed{9} = 27$$

$$\begin{array}{c} \text{Number} \\ \text{from Set 1} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 2} \end{array} \quad \begin{array}{c} \text{Number} \\ \text{from Set 3} \end{array} \\ \left(\boxed{4} \times \boxed{7} \right) + \boxed{10} = 30$$

Can you make an even number greater than 30?

Possible answers might include:

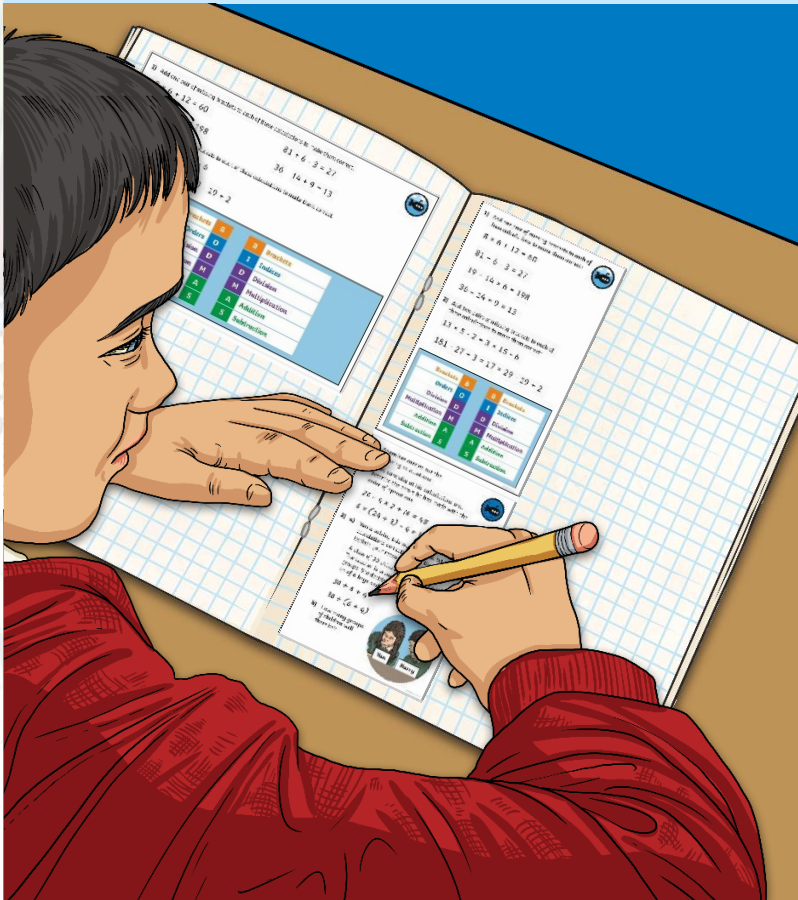
$$(4 \times 6) + 8 = 32$$

$$(4 \times 7) + 10 = 38$$

$$(4 \times 7) + 8 = 36$$

Order of Operations

Dive in by completing your own activity!



1) Use a number from Set 1 to complete the calculation.

a) Number from Set 1: $20 - 4 = \underline{\quad}$

b) Number from Set 1: $6 \times (2 - 1) = \underline{\quad}$

2) a) Yan is a classmate of Adam. How many more items does Yan have than Adam?

b) How many items does Yan have?

1) Add one pair of missing brackets to each of these calculations to make them correct:

$$8 \times 6 + 12 = 60 \qquad 81 \div 6 - 3 = 27$$
$$19 + 14 \times 6 = 198 \qquad 36 - 14 + 9 = 13$$

2) Add two pairs of missing brackets to each of these calculations to make them correct:

$$13 \times 5 - 2 = 3 \times 15 - 6$$
$$181 - 27 + 3 = 17 \times 29 - 19 + 2$$

Brackets	B	B	Brackets
Orders	O	I	Indices
Division	D	D	Division
Multiplication	M	M	Multiplication
Addition	A	A	Addition
Subtraction	S	S	Subtraction

Need Planning to Complement this Resource?

National Curriculum Aim

Use their knowledge of the order of operations to carry out calculations involving the four operations.

This screenshot shows a resource page with two main sections. The first section, 'What Is BODMAS?', includes a cartoon illustration of characters representing the operations and a text box asking 'What do you think the answer to $41 + 9^2 + 3 =$?' Below this is a 'Bonkers BODMAS' section with a play button icon and a calculation $41 + 9^2 + 3 =$. A text box asks 'Which pairs of the calculations should you complete first?' and lists 'Brackets', 'Order (exponents)', 'Division and Multiplication', and 'Addition and Subtraction'. At the bottom, there are worksheets for 'BODMAS Calculation Cards' and 'Multiplication Mugham'.

This screenshot shows a resource page with two main sections. The first section, 'Wham, Boom, Crack', includes a cartoon illustration of characters and a text box asking 'Which pairs of the calculations should you complete first?' and lists 'Brackets', 'Order (exponents)', 'Division and Multiplication', and 'Addition and Subtraction'. Below this is a 'Bonkers Brackets (1)' section with a play button icon and a text box asking 'In the calculations true or false?' and 'Use your knowledge of BODMAS to check the answers'. At the bottom, there are worksheets for 'Extra Challenge', 'Brackets', and 'True or False'.



$$2(12 - 2) = 20$$
$$(3 \times 5) - 2 = 13$$