Varied Fluency
Step 13: Order of Operations

National Curriculum Objectives:

Mathematics Year 6: (6C9) Use their knowledge of the order of operations to carry out calculations involving the four operations

Differentiation:

Developing Questions to support using knowledge of the order of operations to solve calculations that include two operations. Using all four operations and tables knowledge up to 12 x 12.

Expected Questions to support using knowledge of the order of operations to solve calculations that include up to three operations. Using brackets and tables knowledge up to 12 x 12.

Greater Depth Questions to support using knowledge of the order of operations to solve calculations that include up to three operations. Using brackets, indices, fractions, decimal numbers and tables knowledge up to 12 x 12.
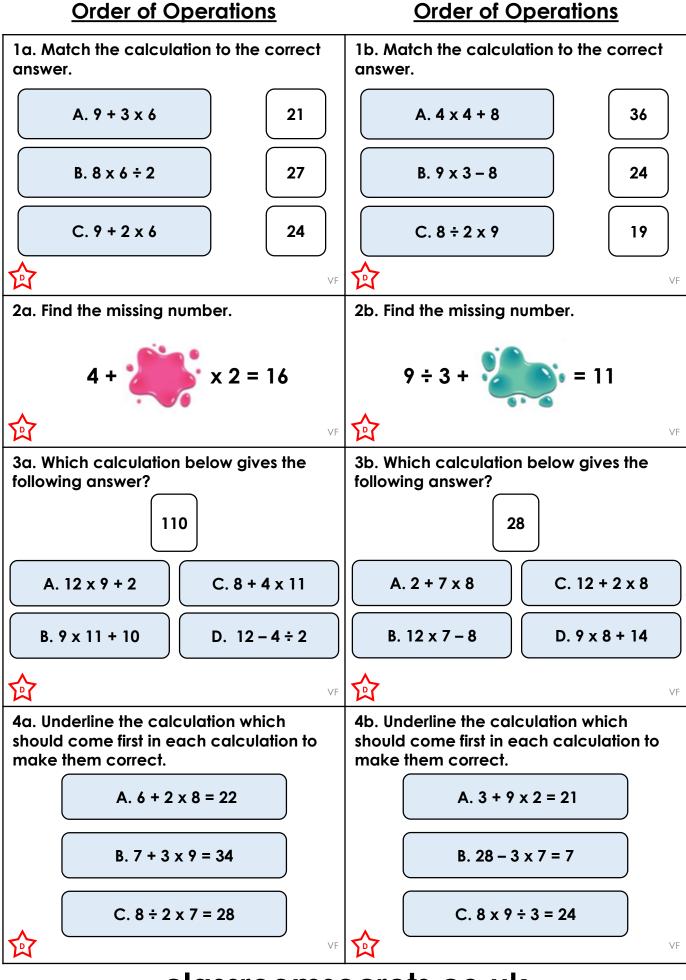
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Order of Operations

Order of Operations

1a. Match the calculation to the correct answer.

A. 9 + 3 x 6		21
B. 8 x 6 ÷ 2		27
C. 9 + 2 x 6		24

VF

1b. Match the calculation to the correct answer.

A. 4 x 4 + 8		36
B. 9 x 3 – 8		24
C. 8 ÷ 2 x 9		19

VF

2a. Find the missing number.

4 + ⬡ x 2 = 16

VF

2b. Find the missing number.

9 ÷ 3 + ⬡ = 11

VF

3a. Which calculation below gives the following answer?

110

A. 12 x 9 + 2   C. 8 + 4 x 11

B. 9 x 11 + 10   D. 12 – 4 ÷ 2

VF

3b. Which calculation below gives the following answer?

28

A. 2 + 7 x 8   C. 12 + 2 x 8

B. 12 x 7 – 8   D. 9 x 8 + 14

VF

4a. Underline the calculation which should come first in each calculation to make them correct.

A. 6 + 2 x 8 = 22

B. 7 + 3 x 9 = 34

C. 8 ÷ 2 x 7 = 28

VF

4b. Underline the calculation which should come first in each calculation to make them correct.

A. 3 + 9 x 2 = 21

B. 28 – 3 x 7 = 7

C. 8 x 9 ÷ 3 = 24

VF

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Varied Fluency – Order of Operations – Year 6 Developing

Order of Operations

Order of Operations

5a. Match the calculation to the correct answer.

A. 10 x (16 – 4)	35
B. 12 x 9 – 18	120
C. 45 ÷ 9 x 7	90

VF

5b. Match the calculation to the correct answer.

A. 9 x 6 + 22	64
B. 7 x 12 – 20	9
C. 72 ÷ (4 x 2)	76

VF

6a. Find the missing number.

$12 + 36 ÷ = 18$

VF

6b. Find the missing number.

$ – 49 ÷ 7 = 23$

VF

7a. Which calculation below gives the following answer?

130

A. 12 x 7 + (9 x 2)   C. (8 + 4) x 11 – 2

B. 9 x 11 + 10   D. 12 x (12 – 4) + 2

VF

7b. Which calculation below gives the following answer?

76

A. (2 + 7) x 8 + 10   C. (10 + 2) x 8 – 2

B. 12 x 7 – 8   D. 9 x (8 – 2) + 14

VF

8a. Add brackets to each calculation to make them correct.

A. 12 + 14 ÷ 2 = 13

B. 11 x 12 – 5 = 77

C. 9 ÷ 3 x 22 – 12 = 30

VF

8b. Add brackets to each calculation to make them correct.

A. 12 x 4 + 8 = 144

B. 9 x 18 – 7 = 99

C. 48 ÷ 12 x 6 – 2 = 16

VF

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Varied Fluency – Order of Operations – Year 6 Expected

Order of Operations

Order of Operations

9a. Match the calculation to the correct answer.

A. $48 \div 4 + 4^2$	54
B. $0.5 \times (12 \times 6) + 18$	43
C. $\frac{1}{2} \times 6^2 + 25$	28

VF

9b. Match the calculation to the correct answer.

A. $12 \times 2^2 + 32$	74
B. $9 \times 11 - 5^2$	8
C. $64 \div (\frac{1}{4} \times 32)$	80

VF

10a. Find the missing number.

$8^2 - 28 \div \text{(splat)} = 60$

VF

10b. Find the missing number.

$\text{(splat)} \div 3^2 + 12 = 20$

VF

11a. Which calculation below gives the following answer?

110

A. $40 + 8^2 - 14$ C. $(9^2 - 9) + 40$

B. $(\frac{1}{2} \times 20) \times 11$ D. $12 \times (6 + 4) + 2$

VF

11b. Which calculation below gives the following answer?

152

A. $(4 + 7) \times 8 + 12$ C. $12 \times 11 + 4 \times 5$

B. $(9 + 7) \div 2 \times 12$ D. $11 \times (7 - 2) + 3$

VF

12a. Add brackets to each calculation to make them correct.

A. $20 - 8 \times 12 \div 4 = 36$

B. $9^2 - 31 \div 10 = 5$

C. $12 \div 3 \times 2 + 20 = 22$

VF

12b. Add brackets to each calculation to make them correct.

A. $18 - 6 \times 48 \div 4 = 144$

B. $28 \div 7 \times 8 - 5 = 12$

C. $4^2 - 8 \times 12 = 96$

VF

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Varied Fluency – Order of Operations – Year 6 Greater Depth

Varied Fluency
Order of Operations

Developing

1a. A. 27; B. 24; C. 21
2a. 6
3a. A
4a. A. 2 x 8; B. 3 x 9; C. 8 ÷ 2

Developing

1b. A. 24; B. 19; C. 36
2b. 8
3b. C
4b. A. 9 x 2; B. 3 x 7; C. 9 ÷ 3

Expected

5a. A. 120; B. 90; C. 35
6a. 6
7a. C
8a. A. $(12 + 14) ÷ 2 = 13$;
B. $11 x (12 – 5) = 77$;
C. $9 ÷ 3 x (22 – 12) = 30$

Expected

5b. A. 76; B. 64; C. 9
6b. 30
7b. B
8b. A. $12 x (4 + 8) = 144$;
B. $9 x (18 – 7) = 99$;
C. $48 ÷ 12 x (6 – 2) = 16$

Greater Depth

9a. A. 28; B. 54; C. 43
10a. 7
11a. B
12a. A. $(20 – 8) x 12 ÷ 4 = 36$
B. $(9^2 – 31) ÷ 10 = 5$
C. $12 ÷ (3 x 2) + 20 = 22$

Greater Depth

9b. A. 80; B. 74; C. 8
10b. 72
11b. C
12b. A. $(18 – 6) x 48 ÷ 4 = 144$
B. $28 ÷ 7 x (8 – 5) = 12$
C. $(4^2 – 8) x 12 = 96$

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Varied Fluency – Order of Operations ANSWERS