

Y5/6 Multiplication and Division Unit 1 (56508)

Additional teacher instructions for practice sheets

These notes indicate which practice sheets are most appropriate for which groups.

Day 1 Y5 Common multiples and factors Sheets 1 and 2

Working towards ARE / Working at ARE / Greater Depth
Greater Depth to complete the Challenge.

Day 1 Y6 Finding common factors and multiples Sheet 3

Working towards ARE

Day 1 Y6 Finding common factors and multiples Sheet 4

Working at ARE / Greater Depth

Day 2 Y5 Mental multiplication Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Day 2 Y6 Mental decimal multiplication Sheet 2

Working towards ARE

Day 2 Y6 Mental decimal multiplication Sheet 3

Working at ARE / Greater Depth

Common multiples and factors

Sheet 1

Which of these numbers are common multiples of 3 and 4?

9, 12, 15, 16, 18, 20, 24, 30, 34, 36

Which of these numbers are common multiples of 3 and 5?

9, 12, 15, 16, 18, 20, 24, 30, 34, 36

Which of these numbers are common multiples of 4 and 6?

9, 12, 15, 16, 18, 20, 24, 30, 34, 36

Challenge

What is the lowest common multiple of 6 and 9? And of 6 and 15?

Common multiples and factors

Sheet 2

Which of these numbers are common factors of 12 and 16?

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

Which of these numbers are common factors of 24 and 30?

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

Which of these numbers are common factors of 18 and 27?

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

Challenge

What is the highest common factor of 24 and 32? And of 45 and 48?

Finding common factors and multiples

Sheet 3

Find the highest common factor of these pairs of numbers:

1. 24 and 36
2. 14 and 28
3. 16 and 20
4. 18 and 27
5. 12 and 24

Find the lowest common multiple of these pairs of numbers:

6. 2 and 5
7. 4 and 5
8. 6 and 9
9. 4 and 6
10. 4 and 8

Challenge

Choose any three consecutive numbers between 2 and 9. Can you find the lowest common multiple of the numbers?
Repeat for another three numbers.

Finding common factors and multiples

Sheet 4

Find the highest common factor of these sets of numbers:

1. 24, 36 and 48
2. 14, 28 and 35
3. 16, 20 and 32
4. 18, 24 and 27
5. 12, 24 and 33

Find the lowest common multiple of these sets of numbers:

1. 2, 3, 5
2. 2, 4, 5
3. 3, 6, 9
4. 3, 5, 6
5. 4, 6, 8

Challenge

Choose any four consecutive numbers between 2 and 9. Can you find the lowest common multiple of the four numbers?
Repeat for another four numbers.

Mental multiplication

Sheet 1

Choose at least 10 pairs of numbers, one from each set, to multiply together.

16 23 54 35 42 28

3 7 4 6 5 8

Challenge

What is the biggest possible answer? And the smallest? What was your mental strategy for each of these two calculations?

Challenge 2

What is your mental strategy for multiplying by 7? Would it be different for 25×7 and 29×7 ?

Mental decimal multiplication

Sheet 2

Use place value and the 3 times table to calculate facts for the 0.3 times table.

$$1 \times 0.3 =$$

$$2 \times 0.3 =$$

$$3 \times 0.3 =$$

...

$$12 \times 0.3 =$$

Now use the facts above to calculate the following:

1. 4×2.3

2. 3×7.3

3. 6×2.3

4. 5×4.3

5. 8×1.3

6. 4×3.3

7. 7×5.3

8. 4×6.3

Mental decimal multiplication

Sheet 3

Choose at least 10 pairs of numbers, one from each set, to multiply together.

1.6 2.3 5.4 3.5 4.2 2.8

3 7 4 6 5 8

Challenge

1. What is the biggest possible answer? And the smallest?
2. Write at least three multiplications in the form $\square.\square \times \square$, with answers between: 70 and 80
50 and 60.

Multiplication and division

Answers

Day 1 Y5 Common multiples and factors Sheet 1

Common multiples of 3 and 4: 12, 24, 36

Common multiples of 3 and 5: 15, 30

Common multiples of 4 and 6: 12, 24, 36

Challenge

18 and 30

Day 1 Y5 Common multiples and factors Sheet 2

Common factors of 12 and 16: 2, 4

Common factors of 24 and 30: 2, 3, 6

Common factors of 18 and 27: 3, 9

Challenge

8 and 3

Day 1 Y6 Finding common factors and multiples Sheet 3

The highest common factors are:

- 12
- 14
- 4
- 9
- 12

The lowest common multiples are:

- 10
- 20
- 18
- 12
- 8

Challenge

e.g. Lowest common multiple for:

$2, 3, 4 = 12$

$3, 4, 5 = 60$

$4, 5, 6 = 60$

$5, 6, 7 = 210$

$6, 7, 8 = 168$

$7, 8, 9 = 504$

Day 1 Y6 Finding common factors and multiples Sheet 4

The highest common factors are:

- 12
- 7
- 4
- 3
- 3

The lowest common multiples are:

- 2, 3, 5 = 30
- 2, 4, 5 = 20
- 3, 6, 9 = 18
- 3, 5, 6 = 30
- 4, 6, 8 = 24

Challenge

2, 3, 4, 5 = 60 and 3, 4, 5, 6 = 60 are lowest.

$4, 5, 6, 7 = 420$

$5, 6, 7, 8 = 840$

$6, 7, 8, 9 = 504$

Multiplication and division

Answers

Day 2 Y5 Mental multiplication Sheet 1

Children should complete at least 10 multiplications using one number from each set of numbers.

Challenge 1

Biggest answer: $54 \times 8 = 432$

Smallest answer: $16 \times 3 = 48$

The most efficient strategy for these is probably partitioning, e.g. $(50 \times 8) + (4 \times 8)$, but other strategies are no less valid. Some children may build on knowledge of the 3x table to do $(12 \times 3) + (4 \times 3)$, for example.

Challenge 2

Discuss and probe children's strategies. Two different approaches could be:

$$\begin{aligned} 25 \times 7 &= (100 \times 7) \div 4 \\ &= 700 \div 4 \\ &= 175 \end{aligned}$$

$$\begin{aligned} 29 \times 7 &= (30 \times 7) - 7 \\ &= 210 - 7 \\ &= 203 \end{aligned}$$

Day 2 Y6 Mental decimal multiplication Sheet 2

$1 \times 0.3 = 0.3$

$2 \times 0.3 = 0.6$

$3 \times 0.3 = 0.9$

$4 \times 0.3 = 1.2$

$5 \times 0.3 = 1.5$

$6 \times 0.3 = 1.8$

$7 \times 0.3 = 2.1$

$8 \times 0.3 = 2.4$

$9 \times 0.3 = 2.7$

$10 \times 0.3 = 3$

- $4 \times 2.3 = 9.2$ [i.e. $(4 \times 2) + (4 \times 0.3)$]
- $3 \times 7.3 = 21.9$
- $6 \times 2.3 = 13.8$
- $5 \times 4.3 = 21.5$
- $8 \times 1.3 = 10.4$
- $4 \times 3.3 = 13.2$
- $7 \times 5.3 = 37.1$
- $4 \times 6.3 = 25.2$

Day 2 Y6 Mental decimal multiplication Sheet 3

Children should complete at least 10 multiplications using one number from each set of numbers.

Challenge

1. Biggest answer: $5.4 \times 8 = 43.2$

Smallest answer: $1.6 \times 3 = 4.8$

2. e.g. $7.8 \times 9 = 70.2$

$8.7 \times 9 = 78.3$

$9.2 \times 8 = 73.6$

$5.6 \times 9 = 50.4$

$6.9 \times 8 = 55.2$

$7.4 \times 8 = 59.2$