

Week 2

This week in a nutshell:

As well as previously seen topics, here we have some visual strategies for working with ratio and multiplicative relationships. Students should be encouraged to explore these methods beyond simply being diagrammatic aids; they are conceptually advantageous, promoting understanding and developing methods that will eventually become mental processes.

Question 1: Listing multiples

Question 2: Words and numbers

Question 3: Writing expressions

Question 4: Ratio tables

Question 5: Visualising ratio

This week's ideas for class discussion include:

Question 1: **Listing multiples**

- How important is listing as a mathematical skill? Why?

Question 2: **Words and numbers**

- Do you know the words for numbers in any other languages?

Question 3: **Writing expressions**

- Is algebra the “language of maths”?

Question 4: **Ratio tables**

- How can the numbers in a ratio table help with calculations?

Question 5: **Visualising ratio**

- Are there any mathematical ideas that cannot be represented visually?

Week 2: Day 1

1) List the first five multiples of 7.

2) Write using words:

315

3) Write an algebraic expression that means “a number multiplied by seven”.

4) Find the missing number in this ratio table.

	$\xrightarrow{\times 3}$	
$\downarrow \times 4$	2	6
	8	—

5) Indicate shaded to unshaded for the ratio 3:7

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Week 2: Day 1 Answers

- 1) List the first five multiples of 7. **7, 14, 21, 28, 35**

- 2) Write using words:

315 **three hundred and fifteen**

- 3) Write an algebraic expression that means “a number multiplied by seven”.

$7n$ (a different letter could be used)

- 4) Find the missing number in this ratio table.

		$\times 3$	\rightarrow
	2	6	
$\times 4$	\downarrow	8	<u>24</u>

- 5) Indicate shaded to unshaded for the ratio 3:7

3 boxes shaded, eg

--	--	--	--	--	--	--	--	--	--

Week 2: Day 2

1) List the first five multiples of 9.

2) Write using figures:

eight hundred and seventy one

3) Write an algebraic expression that means “six divided by a number”.

4) Find the missing number in this ratio table.

\downarrow

1	5
3	—

\rightarrow

5) Indicate shaded to unshaded for the ratio 2:3

Week 2: Day 2 Answers

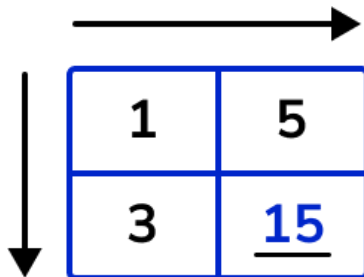
- 1) List the first five multiples of 9. **9, 18, 27, 36, 45**

- 2) Write using figures:

eight hundred and seventy one **871**

- 3) Write an algebraic expression that means “six divided by a number”. $\frac{6}{n}$

- 4) Find the missing number in this ratio table.

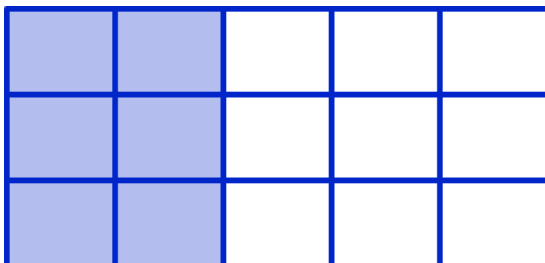


A ratio table with two rows and two columns. The first row contains the numbers 1 and 5. The second row contains the numbers 3 and 15. A horizontal arrow points from the first row to the second row, and a vertical arrow points from the first column to the second column. The number 15 in the second row is underlined.

1	5
3	<u>15</u>

- 5) Indicate shaded to unshaded for the ratio 2:3

6 boxes shaded, eg



A 3x5 grid of boxes. The first two columns are shaded blue, representing 6 boxes shaded.

Week 2: Day 3

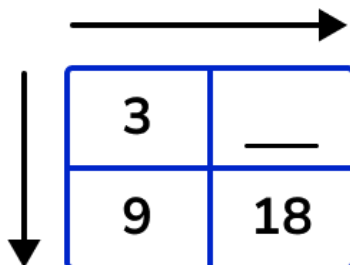
- 1) List the first five multiples of 15.

- 2) Write using words:

5012

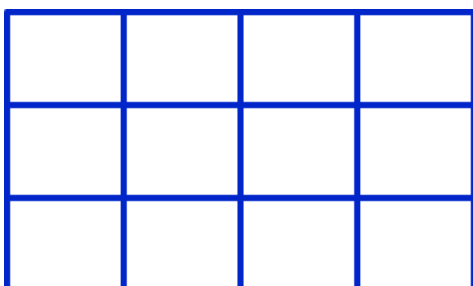
- 3) Write an algebraic expression that means “the sum of two different numbers”.

- 4) Find the missing number in this ratio table.



3	—
9	18

- 5) Indicate shaded to unshaded for the ratio 1:3



Week 2: Day 3 Answers

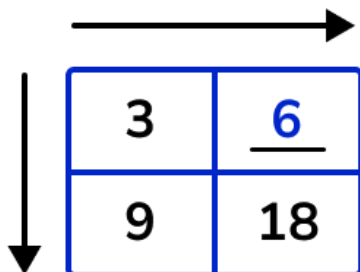
- 1) List the first five multiples of 15. **15, 30, 45, 60, 75**

- 2) Write using words:

5012 **Five thousand and twelve**

- 3) Write an algebraic expression that means “the sum of two different numbers”. **$m + n$**
(the letters must be different but any letters can be used)

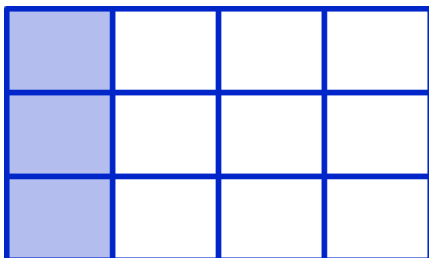
- 4) Find the missing number in this ratio table.



A ratio table with two rows and two columns. The top row contains the numbers 3 and 6. The bottom row contains the numbers 9 and 18. A horizontal arrow points from the first column to the second column above the table. A vertical arrow points from the top row to the bottom row to the left of the table.

3	<u>6</u>
9	18

- 5) Indicate shaded to unshaded for the ratio 1:3
3 boxes shaded, E.g.



A 3x4 grid of boxes. The first column of three boxes is shaded light blue.

Week 2: Day 4

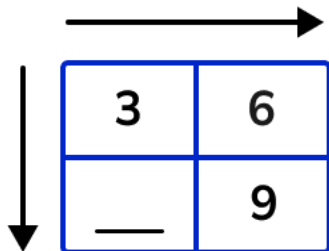
1) List the first five multiples of 8.

2) Write using words:

6060

3) Write an algebraic expression that means “an odd number”.

4) Find the missing number in this ratio table.



3	6
—	9

5) Indicate black to shaded to unshaded for the ratio 2:3:5

Week 2: Day 4 Answers

Week 2: Day 5

1) List the first five multiples of 19.

2) Write using figures:

sixteen thousand and eleven

3) Write an algebraic expression that means “five plus a number all multiplied by two”.

4) Find the missing number in this ratio table.

—	7
8	28

5) Indicate black to shaded to unshaded for the ratio 1:2:3

Week 2: Day 5 Answers

- 1) List the first five multiples of 19. **19, 38, 57, 76, 95**

- 2) Write using figures:

sixteen thousand and eleven **16011**

- 3) Write an algebraic expression that means “five plus a number all multiplied by two”. **$2(5 + n)$**

(Any letter can be used although 'n' is the standard letter used)

- 4) Find the missing number in this ratio table.

<u>2</u>	7
8	28

- 5) Indicate black to shaded to unshaded for the ratio 1:2:3

2 black, 4 shaded, 6 unshaded, eg

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