

## Week 8

### This week in a nutshell:

Q1 and Q3 both look at datasets. Students may need a reminder of the definitions of median and range before they attempt these questions. Encourage students to write each step of their working out down in Q2 to avoid mistakes. Q4 relies on the various skills that students built up in weeks 1,2,3, and 4. Q5 builds on the use of tally notation seen last week.

**Question 1:** Finding the median

**Question 2:** Order of operations

**Question 3:** Finding the range

**Question 4:** Equivalence of fractions, decimals & percentages

**Question 5:** Frequency tables

The questions aim to develop and deepen understanding over the week. Due to the necessity of the topics covered this week, there is an emphasis on the interchangeability of command words, and language flexibility. It may be worth taking some extra time this week to make sure your students are developing their mathematical literacy.

### This week's ideas for class discussion include:

#### Question 1: Finding the median

- **Simon says "The median is the middle value, therefore if there are 10 data values then the median will be the fifth value, because half of 10 is 5." Explain why Simon is incorrect.**

#### Question 2: Order of operations

- **Add brackets to the following calculations to make the answers that a written correct.**  
**(a)  $10 - 2 \times 3 = 24$  (b)  $20 - 4 \times 2 + 7 = 5$  (c)  $5 \times 2 + 3^2 - 1 = 54$  (d)**  
 **$6 - 15 \div 3 + 10 = 7$**

#### Question 3: Finding the range

- **A teacher wrote the data set; 6, -2, 10, 7, -3. Students attempted to calculate the range as follows. Simon:  $10 - 2 = 8$ . Charity:  $10 + 2 = 12$ . Kane:  $10 - 3 = 7$ . Who is correct? Explain your answer.**

#### Question 4: Equivalence of fractions, decimals & percentages

- **Challenge: Can you write a list of examples where you have seen fractions, decimals or percentages being used in a real life context?**

#### Question 5: Frequency tables

- **Task: Design a table to record people's shoe sizes. Ask the other students in your class their shoe size and record it using tally notation. Finally write down the frequency of each shoe size in the class.**

## Week 8: Day 1

- 1) Find the median of this dataset:

2, 4, 6, 7, 11

- 2) Calculate:

$$15 - 6 \times 2 =$$

- 3) Find the range of this dataset:

7, 9, 14, 15, 19

- 4) Complete:

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = 0.25 = \_\_\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Pet	Tally	Frequency
Dog		
Cat	<del>    </del>	
Fish		

## Week 8: Day 1 Answers

- 1) Find the median of this dataset:

2, 4, 6, 7, 11

- 2) Calculate:

$$15 - 6 \times 2 = 15 - 12 \\ = 3$$

- 3) Find the range of this dataset:

7, 9, 14, 15, 19  
 $19 - 7 = 12$

- 4) Complete:

$$\frac{1}{4} = 0.25 = 25\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Pet	Tally	Frequency
Dog		3
Cat	<del>    </del>	6
Fish		2

## Week 8: Day 2

- 1) Find the median of this dataset:

3, 5, 10, 12, 15, 17

- 2) Calculate:

$$7 \times 3 - 3 \times 4 =$$

- 3) Find the range of this dataset:

8, 6, 14, 4, 17

- 4) Complete:

$$\frac{2}{5} = \underline{\quad} = \underline{\quad}\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Colour	Tally	Frequency
Red		
Blue		
Green		

## Week 8: Day 2 Answers

- 1) Find the median of this dataset: 11

3, 5, 10, 12, 15, 17

- 2) Calculate:

$$7 \times 3 - 3 \times 4 = 21 - 12 \\ = 9$$

- 3) Find the range of this dataset:

8, 6, 14, 4, 17

$$17 - 4 = 13$$

- 4) Complete:

$$\frac{2}{5} = 0.4 = 40\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Colour	Tally	Frequency
Red		9
Blue		10
Green		1

## Week 8: Day 3

- 1) Find the median of this dataset:

8, 9, 2, 11, 9, 6, 7

- 2) Calculate:

$$18 - 5 \times 3 + 5 =$$

- 3) Find the range of this dataset:

87, 89, 84, 95, 79

- 4) Complete:

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \underline{\phantom{00}} = 64\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Transport	Tally	Frequency
Walk		11
Bus		
Cycle		

## Week 8: Day 3 Answers

- 1) Find the median of this dataset: 8

8, 9, 2, 11, 9, 6, 7  
2, 6, 7, 8, 9, 9, 11

- 2) Calculate:

$$18 - 5 \times 3 + 5 = 18 - 15 + 5 \\ = 8$$

- 3) Find the range of this dataset:

87, 89, 84, 95, 79  
 $95 - 79 = 16$

- 4) Complete:

$$\frac{16}{25} = 0.64 = 64\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Transport	Tally	Frequency
Walk		11
Bus		15
Cycle		3

## Week 8: Day 4

- 1) Find the median of this dataset:

22, 18, 17, 12, 10, 20

- 2) Calculate:

$$100 - 4^2 \div 2 =$$

- 3) Find the range of this dataset:

0.7, 0.3, 1.2, 0.5, 1.9

- 4) Complete:

$$\frac{\boxed{7}}{\boxed{20}} = \underline{\quad} = \underline{\quad}\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Lunch	Tally	Frequency
Pasta		6
Pizza	<del>    </del>	
Salad		2



## Week 8: Day 4 Answers

- 1) Find the median of this dataset: 17.5

22, 18, 17, 12, 10, 20

10, 12, 17, 18, 20, 22

- 2) Calculate:

$$\begin{aligned}
 100 - 4^2 \div 2 &= 100 - 16 \div 2 \\
 &= 100 - 8 \\
 &= 92
 \end{aligned}$$

- 3) Find the range of this dataset:

0.7, 0.3, 1.2, 0.5, 1.9

$$1.9 - 0.3 = 1.6$$

- 4) Complete:

$$\frac{7}{20} = 0.35 = 35\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Lunch	Tally	Frequency
Pasta	<del>    </del>	6
Pizza	<del>    </del>	8
Salad		2

## Week 8: Day 5

- 1) Find the median of this dataset:

1, 1, 9, 8, 4, 1, 1, 7

- 2) Calculate:

$$64 \div 8 - (6 - 4)^3 =$$

- 3) Find the range of this dataset:

47, 91, 74, 32, 88, 92

- 4) Complete:

$$\frac{3}{8} = \underline{\quad} = \underline{\quad}\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Genre	Tally	Frequency
Drama		13
Horror		
Sci-fi		7

## Week 8: Day 5 Answers

- 1) Find the median of this dataset: 2.5

1, 1, 9, 8, 4, 1, 1, 7  
 1, 1, 1, 1, 4, 7, 8, 9

- 2) Calculate:

$$\begin{aligned}
 64 \div 8 - (6 - 4)^3 &= 64 \div 8 - 2^3 \\
 &= 8 - 8 \\
 &= 0
 \end{aligned}$$

- 3) Find the range of this dataset:

47, 91, 74, 32, 88, 92  
 $92 - 32 = 60$

- 4) Complete:

$$\frac{3}{8} = 0.375 = 37.5\%$$

(fraction = decimal = percentage)

- 5) Complete the frequency table.

Genre	Tally	Frequency
Drama		13
Horror		4
Sci-fi		7

**Do you have KS4 students who need additional support in maths?**

Our specialist tutors will help them develop the skills they need to succeed at GCSE in weekly one to one online revision lessons. Trusted by secondary schools across the UK. Visit [thirdspacelearning.com](https://thirdspacelearning.com) to find out more.