

Reasoning and Problem Solving

Step 2: Multiply by 10, 100 and 1,000

National Curriculum Objectives:

Mathematics Year 5: (5C6b) [Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing To calculate an answer based on 3 and 4 digit numbers multiplied by 10, 100 and 1,000.

Expected To calculate an answer based on 4 and 5 digit numbers multiplied by 10, 100 and 1,000.

Greater Depth To calculate an answer based on 5 digit numbers or more multiplied by 10, 100 and 1,000.

Questions 2, 5 and 8 (Reasoning)

Developing Explain why a statement regarding 3 and 4 digit numbers being multiplied by 10, 100 and 1,000 is correct or incorrect.

Expected Explain why a statement regarding 4 and 5 digit numbers being multiplied by 10, 100 and 1,000 is correct or incorrect.

Greater Depth Explain why a statement regarding 5 digit numbers or more being multiplied by 10, 100 and 1,000 is correct or incorrect.

Questions 3, 6 and 9 (Reasoning)

Developing Find the odd number out of three by relating 3 and 4 digit numbers being multiplied by 10, 100 and 1,000.

Expected Find the odd number out of five by relating 4 and 5 digit numbers being multiplied by 10, 100 and 1,000.

Greater Depth Find the odd number out of seven by relating 5 digit numbers or more being multiplied by 10, 100 and 1,000.

[More resources](#) which follow the same small steps as White Rose.

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Reasoning and Problem Solving – Multiply by 10, 100 and 1,000

1a. Jasmine has 25 shells.

Kayden has 10 times as many shells as Jasmine.

Elliot has 100 times as many shells as Jasmine.

How many do they have altogether?



5 PS

1b. Macauley has 55 lollies.

Stephen has 10 times as many lollies as Macauley.

Rhianna has 100 times as many lollies as Macauley.

How many do they have altogether?



5 PS

2a. Rach has 143 flowers in her garden.

Suma has 1,430 flowers in her garden.

Suma says,



I have 1,000 times as many flowers as you.

Is Suma correct? Explain your answer.



5 R

2b. Feroze has 543 sweets in a jar.

Katie has 5,430 sweets in a jar.

Katie says,



I have 100 times as many sweets as you.

Is Katie correct? Explain your answer.



5 R

3a. Which number does not belong? Convince me.

A. 760

B. 67

C. 6,700



5 R

3b. Which number does not belong? Convince me.

A. 850

B. 580

C. 8,500



5 R

Reasoning and Problem Solving – Multiply by 10, 100 and 1,000

4a. Jamie has 450 building blocks.

Olivia has 10 times as many blocks as Jamie.

Sasha has 10 times as many blocks as Olivia.

How many do they have altogether?



5 PS

4b. Karris has 650 stickers.

Elijah has 10 times as many stickers as Karris.

Sophie has 10 times as many stickers as Elijah.

How many do they have altogether?



5 PS

5a. Amir has 2,532 pennies.

Justin has 23,552 pennies.

Justin says,



I have 10 times as many pennies as you.

Is Justin correct? Explain your answer.



5 R

5b. Logan has 1,766 marbles.

Nan has 100,766 marbles.

Nan says,



I have 100 times as many marbles as you.

Is Nan correct? Explain your answer.



5 R

6a. Which number does not belong? Convince me.

A. 664

B. 960

C. 9,600

D. 9,662

E. 66,400



5 R

6b. Which number does not belong? Convince me.

A. 954

B. 139

C. 95,400

D. 1,390

E. 1,930



5 R

Reasoning and Problem Solving – Multiply by 10, 100 and 1,000

7a. Carlos has 3,897 grains of rice.

Tayla has 10 times as many grains of rice as Carlos.

Mike has 100 times as many grains of rice as Tayla.

How many do they have altogether?



5 PS

7b. Zara has 8,534 petals.

Kane has 10 times as many petals as Zara.

Usamah has 100 times as many petals as Zara.

How many do they have altogether?



5 PS

8a. Vanita has 75,876 beads.

Jack has 750,876 beads.

Jack says,



I have 10 times as many beads as you.

Is Jack correct? Explain your answer.



5 R

8b. Jade has 98,385 threads in her jumper.

Mort has 983,850 threads in his jumper.

Mort says,



I have 100 times as many threads as you.

Is Mort correct? Explain your answer.



5 R

9a. Which number does not belong? Convince me.

A. 4,710,000

B. 74,120

C. 7,412

D. 471,000

E. 741,200

F. 47,100

G. 417



5 R

9b. Which number does not belong? Convince me.

A. 6,324

B. 2,897

C. 632,400

D. 54,236

E. 542,360

F. 28,970

G. 280,970



5 R

Reasoning and Problem Solving – Multiply by 10, 100 and 1,000

Developing

1a. $25 + 250 + 2,500 = 2,775$

1b. $55 + 550 + 5,500 = 6,105$

2a. Suma is incorrect because $1,000 \times 143 = 143,000$. Suma has 10 times more than Rach.

2b. Katie is incorrect because 100×543 would be 54,300. Katie has 10 times more than Feroze.

3a. A is the odd one out because $67 \times 100 = 6,700$

3b. B is the odd one out because $850 \times 10 = 8,500$

Expected

4a. $450 + 4,500 + 45,000 = 49,950$

4b. $650 + 6,500 + 65,000 = 72,150$

5a. Justin is incorrect because $10 \times 2,532 = 25,320$

5b. Nan is incorrect because $100 \times 1,766 = 176,600$

6a. D is the odd one out because $664 \times 100 = 66,400$ and $1960 \times 10 = 9,600$

6b. E is the odd one out because $954 \times 100 = 95,400$ and $139 \times 10 = 1,390$

Greater Depth

7a. $3,897 + 38,970 + 3,897,000 = 3,939,867$

7b. $8,534 + 85,340 + 8,534,000 = 8,627,874$

8a. Jack is incorrect because $75,876 \times 10 = 758,760$

8b. Mort is incorrect because $98,385 \times 100 = 9,838,500$

9a. G is the odd one out because $47,100 \times 10 = 471,000$; $47,100 \times 100 = 4,710,000$; $7,412 \times 10 = 74,120$ and $7,412 \times 100 = 741,200$

9b. G is the odd one out because $6,324 \times 100 = 632,400$; $2,897 \times 10 = 28,970$; $54,236 \times 10 = 542,360$