Reasoning and Problem Solving
Step 4: Multiply Decimals by Integers

National Curriculum Objectives:

Mathematics Year 6: (6F9b) Multiply one-digit numbers with up to two-decimal places by whole numbers

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Identify and explain the odd one out of 3 calculations. Includes multiplying one-digit numbers with one decimal place by 2, 3, 4 and 5.
Expected Identify and explain the odd one out of 3 calculations. Includes multiplying one-digit numbers with two decimal places by one-digit whole numbers.
Greater Depth Identify and explain the odd one out of 3 calculations. Includes multiplying one-digit numbers with three decimal places by one-digit whole numbers and zeroes in decimal places.

Questions 2, 5 and 8 (Problem Solving)
Developing Arrange the number cards to create a calculation and identify the cards which are not needed. Includes multiplying one-digit numbers with one decimal place by 2, 3, 4 and 5.
Expected Arrange the number cards to create a calculation and identify the cards which are not needed. Includes multiplying one-digit numbers with two decimal places by one-digit whole numbers.
Greater Depth Arrange the number cards to create a calculation and identify the cards which are not needed. Includes multiplying one-digit numbers with three decimal places by one-digit whole numbers and zeroes in decimal places.

Questions 3, 6 and 9 (Reasoning)
Developing Explain the mistake made in a multiplication calculation and find the correct answer. Includes multiplying one-digit numbers with one decimal place by 2, 3, 4 and 5.
Expected Explain the mistake made in a multiplication calculation and find the correct answer. Includes multiplying one-digit numbers with two decimal places by one-digit whole numbers.
Greater Depth Explain the mistake made in a multiplication calculation and find the correct answer. Includes multiplying one-digit numbers with three decimal places by one-digit whole numbers and zeroes in decimal places.

More resources which follow the same small steps as White Rose.

Did you like this resource? Don't forget to review it on our website.

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Multiply Decimals by Integers

Multiply Decimals by Integers

1a. Circle the odd one out.

$$5.3 \times 3$$

$$6.8 \times 2$$

$$3.4 \times 4$$

Explain your reasoning.

R

1b. Circle the odd one out.

$$4.4 \times 4$$

$$8.8 \times 2$$

$$9.1 \times 2$$

Explain your reasoning.

R

2a. Select and arrange the cards to create a multiplication calculation.

| 5.2 | 4.1 | 20.5 |
| 5 | 21.5 | 4 |

[ ] x [ ] = [ ]

Which cards are not needed?

PS

2b. Select and arrange the cards to create a multiplication calculation.

| 6.3 | 7.3 | 21.9 |
| 3 | 24.9 | 4 |

[ ] x [ ] = [ ]

Which cards are not needed?

PS

3a. Mr Chen shares the calculation below with Class 6:

$$7.2 \times 4 =$$

Mia says,

> The product is 11.2

What mistake has Mia made?

What is the correct answer?

R

3b. Miss Jones shares the calculation below with Class 6:

$$3.3 \times 5 =$$

Alfie says,

> The product is 15.3

What mistake has Alfie made?

What is the correct answer?

R

Multiply Decimals by Integers

Multiply Decimals by Integers

4a. Circle the odd one out.

$$6.36 \times 4$$

$$4.88 \times 6$$

$$3.18 \times 8$$

Explain your reasoning.

4b. Circle the odd one out.

$$2.78 \times 8$$

$$3.93 \times 7$$

$$5.56 \times 4$$

Explain your reasoning.

5a. Select and arrange the cards to create a multiplication calculation.

| 7.29 | 6 | 8.28 | 5 |
| 35.65 | 7.31 | 8 | 36.55 |

☐ x ☐ = ☐

Which cards are not needed?

5b. Select and arrange the cards to create a multiplication calculation.

| 32.21 | 5.85 | 6 | 8 |
| 8.43 | 5 | 46.71 | 50.58 |

☐ x ☐ = ☐

Which cards are not needed?

6a. Mr Smith shares the calculation below with Class 6:

$$5.47 \times 6 =$$

Fay says,

The product is 30.47

What mistake has Fay made?

What is the correct answer?

6b. Mrs Patel shares the calculation below with Class 6:

$$6.91 \times 7 =$$

Seth says,

The product is 48.73

What mistake has Seth made?

What is the correct answer?

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Reasoning and Problem Solving – Multiply Decimals by Integers – Year 6 Expected

Multiply Decimals by Integers

Multiply Decimals by Integers

7a. Circle the odd one out.

$$8.058 \times 3$$

$$6.043 \times 8$$

$$4.029 \times 6$$

Explain your reasoning.

⭐GD

R

7b. Circle the odd one out.

$$5.031 \times 7$$

$$9.502 \times 4$$

$$4.751 \times 8$$

Explain your reasoning.

⭐GD

R

8a. Select and arrange the cards to create a multiplication calculation.

53.468	7.706	8	7.607
68.463	9	6.706	69.534

☐ x ☐ = ☐

Which cards are not needed?

⭐GD

PS

8b. Select and arrange the cards to create a multiplication calculation.

57.762	6.084	7	6.804
54.756	47.268	6.408	9

☐ x ☐ = ☐

Which cards are not needed?

⭐GD

PS

9a. Mr Hill shares the calculation below with Class 6:

$$5.097 \times 7 =$$

Bella says,

> The product is 35.079

What mistake has Bella made?

What is the correct answer?

⭐GD

R

9b. Mrs Davies shares the calculation below with Class 6:

$$4.002 \times 8 =$$

Jason says,

> The product is 32.16

What mistake has Jason made?

What is the correct answer?

⭐GD

R

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Reasoning and Problem Solving – Multiply Decimals by Integers – Year 6 Greater Depth

Reasoning and Problem Solving
Multiply Decimals by Integers

Developing

1a. 5.3 x 3 is the odd one out because this equals 15.9. The other calculations equal 13.6.

2a. 4.1 x 5 = 20.5. The cards 5.2, 21.5 and 4 are not needed.

3a. Mia has added the numbers instead of multiplying them. The correct answer is 28.8.

Expected

4a. 4.88 x 6 is the odd one out because this equals 29.28. The other calculations equal 25.44.

5a. 7.31 x 5 = 36.55. The cards 7.29, 6, 8.28 35.65 and 8 are not needed.

6a. Fay has not multiplied the tenths and hundredths by 6. She has worked out 5 x 6 = 30 then added the decimal places. The correct answer is 32.82.

Greater Depth

7a. 6.043 x 8 is the odd one out because this equals 48.344. The other calculations equal 24.174.

8a. 7.607 x 9 = 68.463. The cards 53.468, 7.706, 8, 6.706 and 69.534 are not needed.

9a. Bella has 0 tenths in her answer. She has forgotten to carry the 6 tenths over. The correct answer is 35.679.

Reasoning and Problem Solving
Multiply Decimals by Integers

Developing

1b. 9.1 x 2 is the odd one out because this equals 18.2. The other calculations equal 17.6.

2b. 7.3 x 3 = 21.9. The cards 6.3, 24.9 and 4 are not needed.

3b. Alfie has not multiplied the tenths by 5. He has worked out 3 x 5 = 15 then added the decimal place. The correct answer is 16.5.

Expected

4b. 3.93 x 7 is the odd one out because this equal 27.51. The other calculations equal 22.24.

5b. 8.43 x 6 = 50.58. The cards 32.21, 5.85, 8, 5 and 46.71 are not needed.

6b. Seth has written the tenths and hundredths in the incorrect order. The correct answer is 48.37

Greater Depth

7b. 5.031 x 7 is the odd one out because this equals 35.217. The other calculations equal 38.008.

8b. 6.084 x 9 = 54.756. The cards 57.762, 7, 6.804, 47.268 and 6.408 are not needed.

9b. Jason has not included the 0 tenths in his answer. The correct answer is 32.016.

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Reasoning and Problem Solving – Multiply Decimals by Integers ANSWERS