Reasoning and Problem Solving
Step 7: Adding – Different Decimal Places

National Curriculum Objectives:

Mathematics Year 5: (5F10) Solve problems involving number up to 3dp.
Mathematics Year 5: (5M9a) Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Solve addition word problems involving minimal exchanges with decimal places, tenth and hundredths.
Expected Solve addition word problems involving some exchanges with decimal places, tenth, hundredths and thousandths.
Greater Depth Solve addition word problems involving multiple exchanges with decimal places, tenth, hundredths and thousandths.

Questions 2, 5 and 8 (Problem Solving)
Developing Find missing digits in column addition involving minimal exchanges with decimal places, tenths and hundredths.
Expected Find missing digits in column addition involving some exchanges with decimal places, tenths, hundredths and thousandths.
Greater Depth Find missing digits in column addition involving multiple exchanges with decimal places, tenths, hundredths and thousandths.

Questions 3, 6 and 9 (Reasoning)
Developing Evaluate a simple statement about addition of decimals. Decide if it is correct or incorrect, giving reasons for the decision.
Expected Evaluate a statement about addition of decimals. Decide if it is correct or incorrect, giving reasons for the decision.
Greater Depth Evaluate a complex statement about addition of decimals. Decide if it is correct or incorrect, giving reasons for the decision.

More Year 5 Decimals resources.

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

Adding – Different Decimal Places

1a. Maliyah takes a taxi 2.4 miles to collect her friend, then a further 1.39 miles to the station.

How far did she travel by taxi?

D PS

Adding – Different Decimal Places

1b. Sheldon tees off for the first hole and hits his golf ball 4.9 metres. When he finds his ball, he then hits it a further 7.05 metres.

How far did he hit his ball in his first two strokes?

D PS

2a. Find the missing digits in the calculation below.

	3	●	✸
+	2	●	0
	✸	●	8	3

D PS

2b. Find the missing digits in the calculation below.

	1	●	6
+	2_1	●	✸	6
	✸	●	5	9

D PS

3a. Hadassah says,

If you line up the decimal points before adding, it will help calculate accurately.

Is he correct?
Explain your answer.

D R

3b. Marcus says,

When adding decimals it doesn't matter if you miss a zero out.

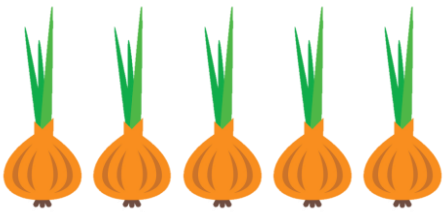
Is he correct?
Explain your answer

D R

Adding – Different Decimal Places

4a. Duncan weighs out 0.567kg of onions, he checks his recipe and sees he needs to add 0.98kg.

How much onion did the recipe need?



PS

4b. On average an immature oak tree grows 0.069m in winter and 1.83m in summer.

How much does the tree grow in a full year?

PS

5a. Find the missing digits in the calculation below.

	2	●	0	7
+		●	7	9
	1			
	5	●	3	9

PS

5b. Find the missing digits in the calculation below.

		●		
+	3_1	●	7_1	2
	4	●	7	1

PS

6a. Eddie says,

Exchanges in the decimal columns work just the same as in the ones and tens.

Is he correct?
Explain your answer.

R

6b. Natalya says,

If you add a number with 3 decimal places to one with 2 decimal places your answer will always have 3 decimal places.

Is she correct?
Explain your answer

R

Adding – Different Decimal Places

7a. Kayden packs his bag for a plane trip, he checks the weight and it weighs 14.9kg. He adds a further 6.365 kg.

How much does his bag now weigh?

GD PS

7b. Lexie is making a mixed juice drink, she adds 1.893ml of orange and 5.79 ml of blackcurrant juice.

How much will her jug need to be able to hold?

GD PS

8a. Find the missing digits in the calculation below.

	☀	. 8	☀	☀
+	3_1	. ☀	8	
		1		
1	3	. 4	5	3

GD PS

8b. Find the missing digits in the calculation below.

	6	. 3	☀	5
+	4_1	. ☀	6_1	☀
1	☀	. 2	4	2

GD PS

9a. Justine says,

When adding decimals, if you round up to help, you need to add the difference at the end.

Is she correct?
Explain your answer.

GD R

9b. Joanna says,

If you have an empty column, you need to use a place holder.

Is she correct?
Explain your answer

GD R

Reasoning and Problem Solving
Adding – Different Decimal Places

Developing

1a. 3.79 miles

2a.

	3 .	8	
+	2 .	0	3
	5 .	8	3

3a. Hadassah is correct, lining up the decimals will make sure the same value columns are lined up under each other.

Expected

4a. 1.547 kg

5a.

	2 .	6	0	7
+	2_1 .	7	9	2
	5 .	3	9	9

6a. Eddie is correct. If you have 10 in any decimal column you must exchange it for a one in the next column to the left.

Greater Depth

7a. 21.265 kg

8a.

	9 .	8	7	3
+	3 .	5	8	
1	3 .	4	5	3

9a. Justine is incorrect. If you round up to make your addition easier you need to subtract the difference at the end.

Reasoning and Problem Solving
Adding – Different Decimal Places

Developing

1b. 11.95 metres

2b.

	1 .	6	3	
+	2_1 .	9	6	
	4 .	5	9	

3b. Marcus is wrong, the zeros are needed to make sure you don't write a number in the wrong value column, they are place holders.

Expected

4b. 1.899 metres

5b.

	0 .	9	9	9
+	3_1 .	7_1	2	
	4 .	7	1	9

6b. Natalya is incorrect. The number of decimal places in an addition don't correlate with the number of decimal places in the answer e.g. 0.75 + 0.25 = 1.

Greater Depth

7b. 7.683 ml

8b.

	6 .	3	7	5
+	4_1 .	8	6_1	7
1	1 .	2	4	2

9b. Joanna is correct. If you miss a place holder you might change the value of other digits.