L.O: I am learning to add decimal numbers with a different number of decimal places

Today you will learn how to add decimals with different decimal places. You will apply your knowledge of both place value and the column method of addition to recognise the value of each digit and understand when you will need to exchange. Remember, the key to success is ensuring you line up the decimal points, so each digit is in the correct column.

- Answer the questions on the separate worksheet that comes with this assignment. Turn the completed work in so that the teacher can mark and comment on your work.

Review

You already know how to add decimals with the same number of decimal places….

TEN tenths must be exchanged for **1** one. The answer is: _____

Now we will add decimals with a different number of decimal places.
Examples

We can use visuals to add numbers with different decimal places.

You can see that there are no hundredths in the second number.
- What could you do to the columns to make adding this easier?

Did you think about putting a zero on the end of the second number to make the calculation easier to add? (5.32 + 3.40 = 8.72)

3.4 and 3.40 are the same, but adding the zero can help to ensure you line up the columns correctly!

Let's Practise

Try the following additions. You may have to exchange!

We can add numbers and exchange with different decimal places.

It is important to line up the numbers correctly when using the column method. Remember to think about each digit's place value...

Show me
7.85 + 4.902
on the grid!

Now watch the video to help you before you begin today's tasks. Click on the link below:

Adding decimals with a different number of decimal places

$2.5 + 3.16 = 5.66$

https://vimeo.com/405760679

Today's Tasks

The tasks are arranged in 3 challenges that get progressively more difficult.

- **Challenge 1 is a "mild" challenge, if you are not confident**
- **Challenge 2 is "spicy", a little bit more challenging, if you are feeling confident and find the first challenge too easy.**
- **Challenge 3 is "hot". The questions are designed to challenge you and can be tricky.**

You can choose to do just one challenge or more than one, it is up to you. As a guide, if you are consistently getting everything correct, you should move up a challenge. If you are struggling on every question; move down a challenge.

Challenge 1:

1.

Use the visual to help you add the decimals where there is no need to exchange.

3.45 + 2.3 =

Ones		Tenths	Hundredths
1 1 1	•	0.1 0.1 0.1 0.1	0.01 0.01 0.01 0.01 0.01
1 1	•	0.1 0.1 0.1	
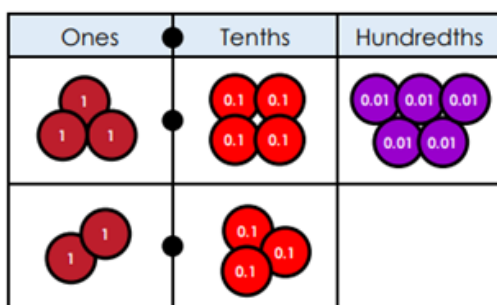
	3	.	4	5
+	2	.	3	
		.		

2.

Use the column method to answer these questions.

```
  4 . 4              4 . 4 2
+ 7 . 0 4 4        + 1 . 6
_____        _____

_____        _____
```

(Add a zero if it helps make it easier)

3.

Filip is adding two numbers together.

He writes it as a column addition.

```
      1   3 · 8
  +   1 · 9   5
      ------------
      3 · 3   3
      1     1
```

a) What mistake has Filip made?

(b) Use the column method to find the correct answer.

Challenge 2:

1.

Work out the additions.

a)
```
    3 · 0   2
  +  1 · 6
  ----------
       ·
```

c)
```
    2 · 8
  +  3 · 4   5
  ----------
       ·
```

b)
```
  1   3 · 5
  +    0 · 2   3
  --------------
         ·
```

d)
```
       6 · 1   5
  +  1   3 · 9
  --------------
         ·
```

2.

Whitney is cycling in a race.
She has cycled 3.145 km so far and has 4.1 km left to go. What is
the total distance of the race?

3.
Use column addition to add the following decimals. (Be sure to line up the decimal points!)
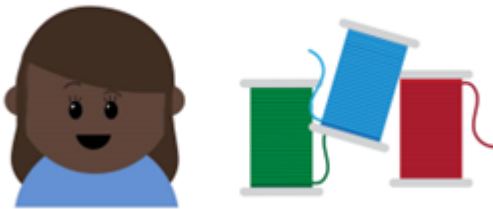
5.289 + 4.3 =

6.02 + 1.859 =

4.5 + 4.08 =

4.

Anita had 2.738m of cotton.

She bought another 1.25 metres for her textiles project.

How much cotton does Anita have altogether?

5.

Millie says...

Yesterday, I read for 2.5 hours and today I read for 1.75 hours. I read for 3.575 hours altogether.

Is she correct? Prove it!

Challenge 3:

1. Use the column method to add the following decimals together:

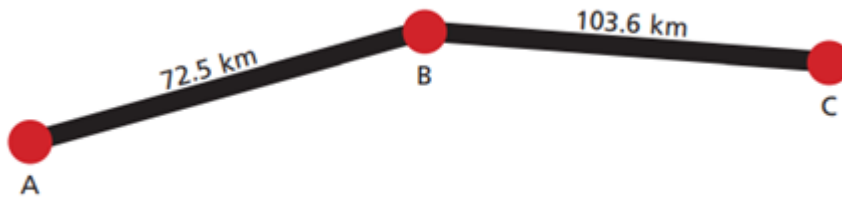   (a) 0.59 + 11.9   (b) 77.34 + 1.82   (c) 0.591 + 1.73   (d) 3.2 + 1.84 + 0.931

2.

Work out the missing digits.

a) __4.3 + 1__.37 = 39.67

b) 4.8__ + __.__ = 12.65

3.

Mr Hall drives from point A to point B, then on to point C.

103.6 km

72.5 km

B

A

C

What is the total distance that Mr Hall drives?

4.

Which is the odd one out?

| 7.84 + 3.062 | 5.602 + 5.3 |

| 2.762 + 8.14 | 6.533 + 4.37 |

Convince me!

Extension:

Asha bought three crates of fruit to donate to a homeless shelter.

The crate of bananas is heavier than the apples.

The crate of oranges is lighter than the apples.

Each crate's weight has a different number of decimal places.

Their total combined weight is 10.005kg.

What could each crate's weight have been?

| 3.055kg | 2.65kg | 2.155kg | 4.15kg | 3.65kg | 4.2kg | 2.8kg |

Is there more than one solution?