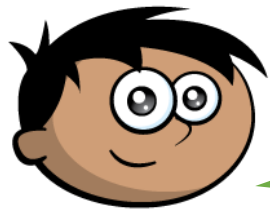# White Rose Maths

Year 4

Decimals

Who is correct?

Dora: 5 hundredths is equivalent to 50 tenths.
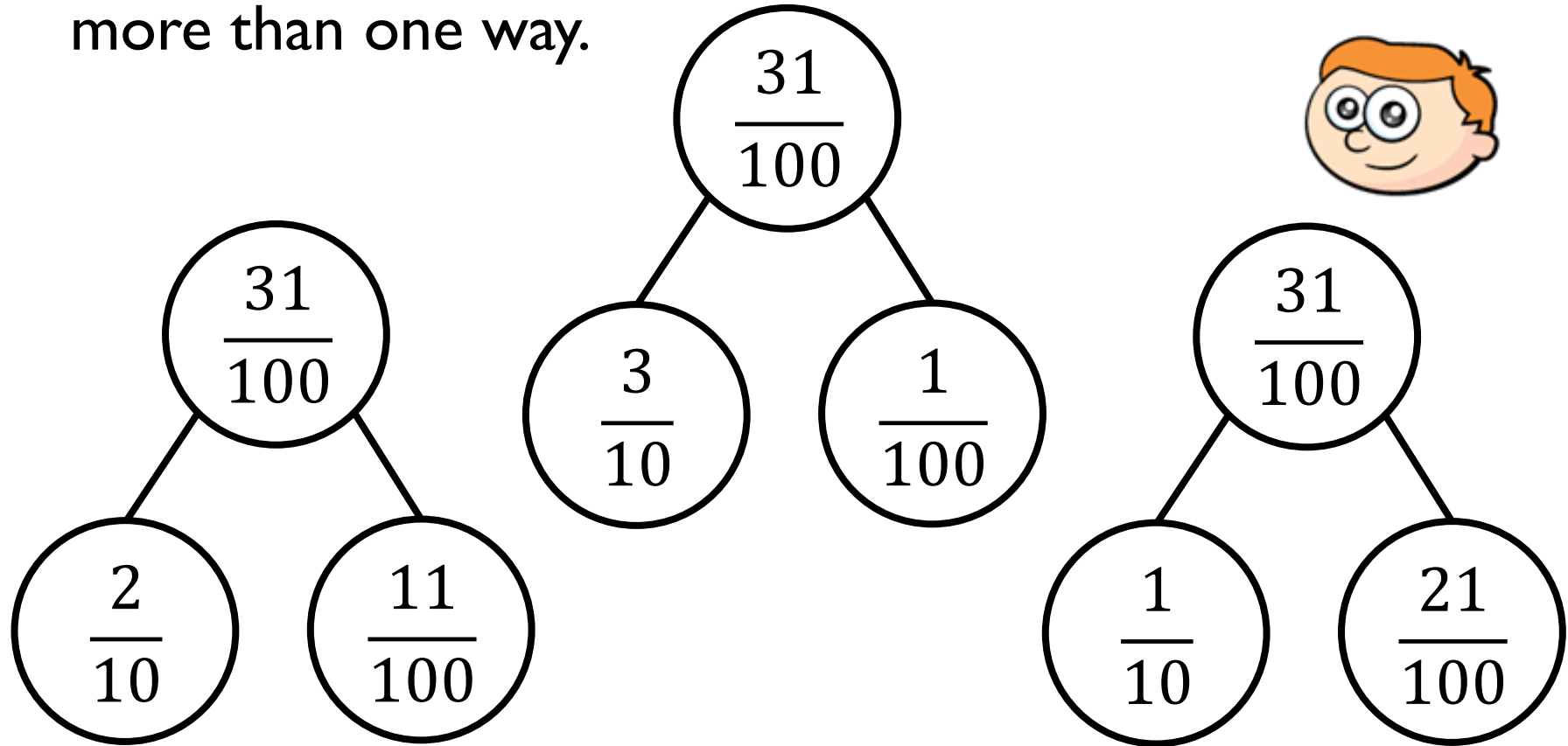
Amir: 50 hundredths is equivalent to 5 tenths.

Explain why.

Ron says he can partition tenths and hundredths in more than one way.

$$\frac{31}{100}$$

$$\frac{31}{100}$$

$$\frac{2}{10}$$

$$\frac{11}{100}$$

$$\frac{31}{100}$$

$$\frac{3}{10}$$

$$\frac{1}{100}$$

$$\frac{31}{100}$$

$$\frac{1}{10}$$

$$\frac{21}{100}$$

Use Ron's method to partition 42 hundredths in more than one way.

Who is correct?

Annie

1.2 is equivalent to 1 whole and 2 tenths.

1.2 is equivalent to 12 tenths.
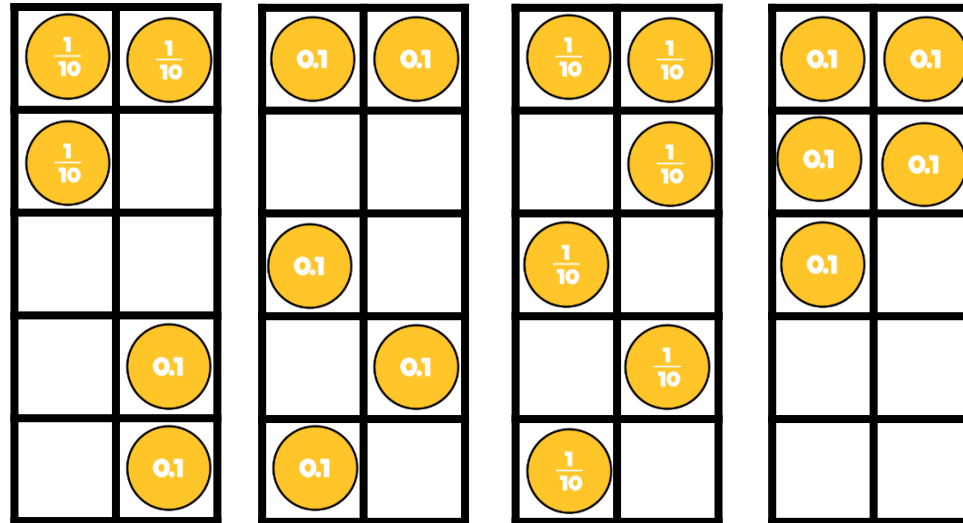
Dexter

Explain why.

Six tens

Six tenths

What is the same? What's different?

Show me.

Which ten frame is the odd one out?

Explain your answer.

Use five counters and a place value grid.
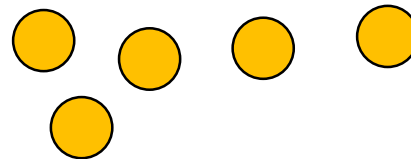Place all five counters in either the ones or the tenths column.
How many different numbers can you make?
Describe the numbers you have made by completing the stem sentences.

There are ☐ ones and ☐ tenths.

☐ ones + ☐ tenths = ☐

Ones	Tenths

Two children are making eleven tenths.

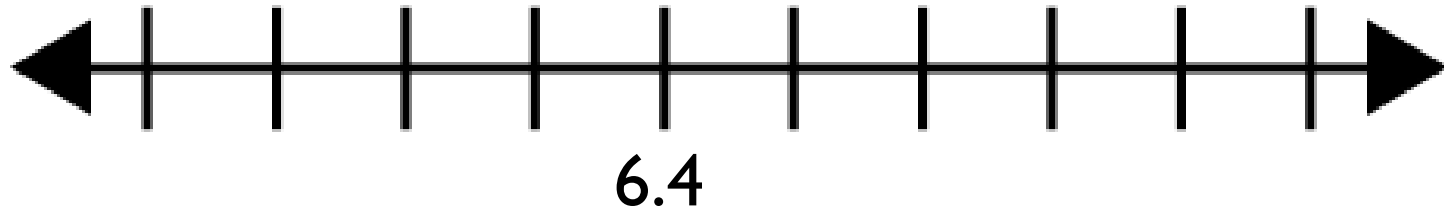| Ones	Tenths
	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1

Rosie

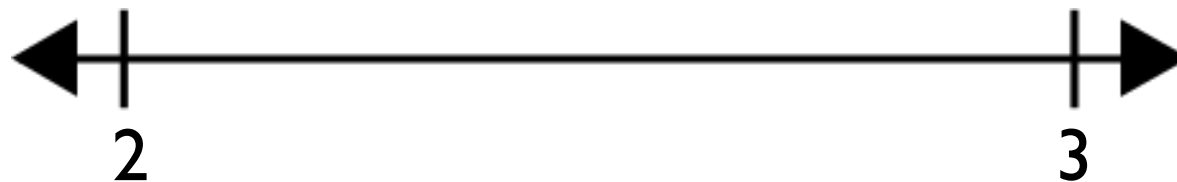| Ones	Tenths
1	0.1

Amir

Who has made it correctly?
Explain your answer.

What could the start and end numbers on the number line be?

6.4

Explain your reasons.

Place the decimals on the number line.

2   3

2.7   2.3   1.9   2.5   2.9   3.2

Which order did you place your numbers on the number line?

Choose a digit card from 1 – 9 and place a counter over the top of that number on the Gattegno chart.

100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

Ron says,

To divide by 10, you need to move the counters to the right.

Do you agree? Use the Gattegno chart to explain your reason.

100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

Complete the number sentences.

$$4 \div 10 = 8 \div \boxed{} \div 10$$

$$15 \div 3 \div 10 = \boxed{} \div 10$$

$$64 \div \boxed{} \div 10 = 32 \div 4 \div 10$$

Jack has used a Gattegno chart to divide a 2-digit number by 10
He has placed counters over the numbers in his answer.

100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	⬤	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	⬤	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What was Jack's original number?
How can you use the chart to help you?
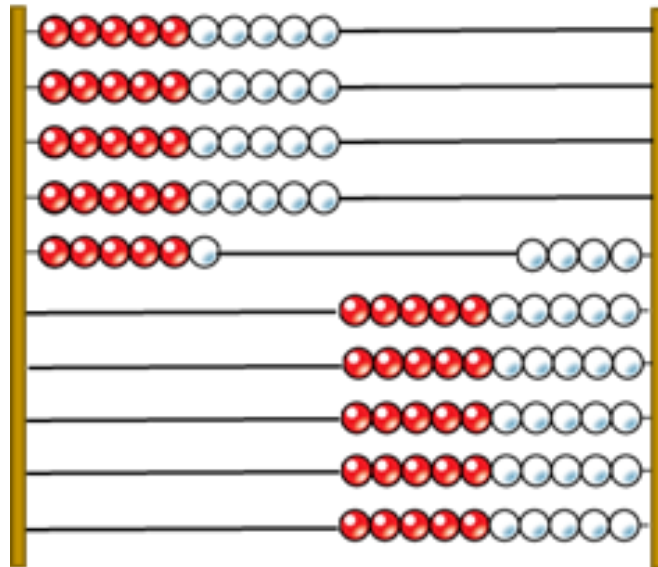
Dexter says,
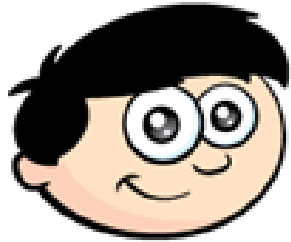
When I divide a 2-digit number by 10, my answer will always have digits in the ones and tenths columns.

Show that Dexter is incorrect.

Here is a Rekenrek made from 100 beads.

If the Rekenrek represents one whole, what fractions have been made on the left and on the right?

Can you partition both of the fractions into tenths and hundredths?

Complete the statements.

3 tenths and 2 hundredths = 2 tenths and ☐ hundredths

14 hundredths and 3 tenths = 4 tenths and ☐ hundredths

5 tenths and 1 hundredth < 5 tenths and ☐ hundredths

5 tenths and 1 hundredth > ☐ tenths and 5 hundredths

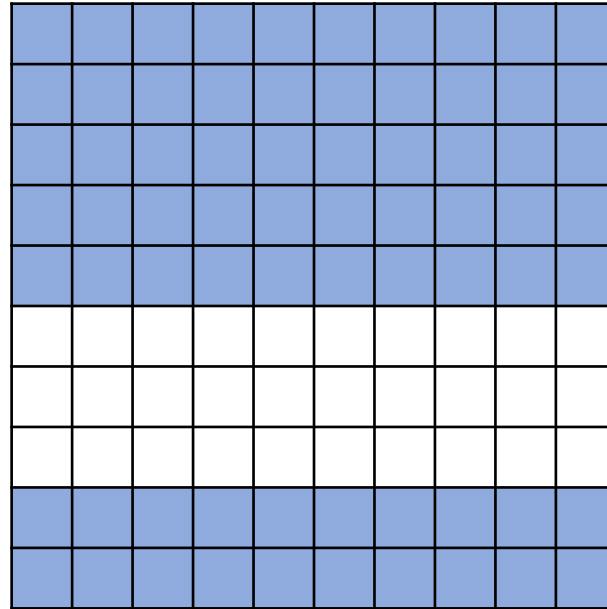Can you list all the possibilities?

Dora says,

17 hundredths is the same as 1,700

Is she correct?
Explain your answer.

Alex and Eva have been asked to write the decimal shaded on the 100 grid.

Alex says the grid shows 0.70

Eva says the grid shows 0.7

Who do you agree with?

Explain your answer.

Use four counters and a place value grid.
Place all four counters in either the ones, tenths or hundredths column.
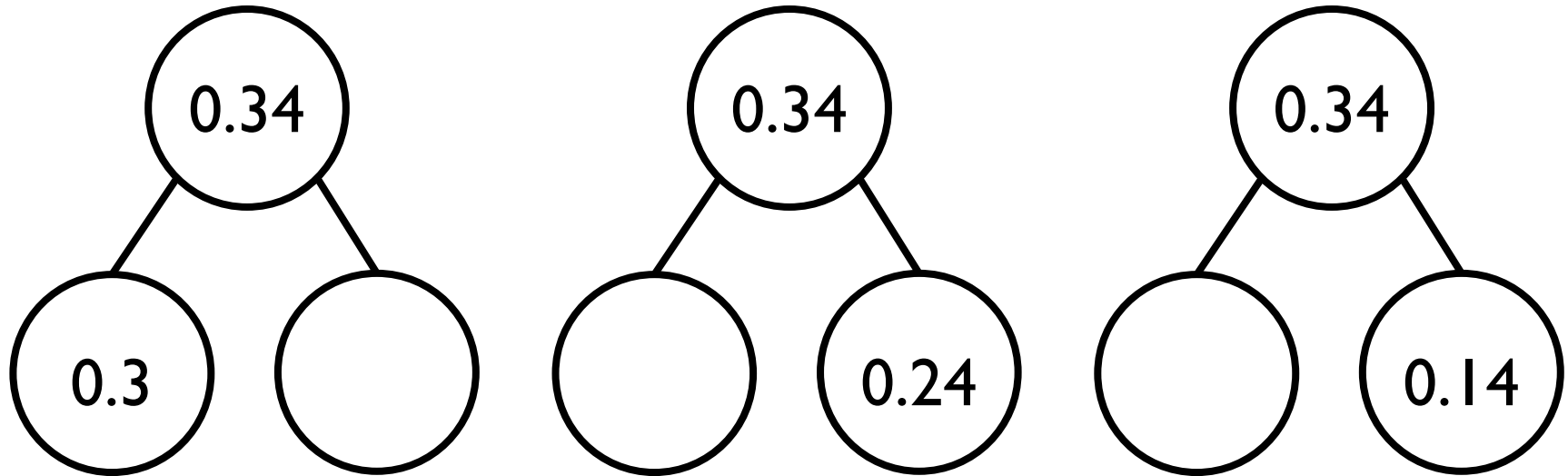
How many different numbers can you make?

Describe the numbers you have made by completing the sentences.

There are ☐ ones, ☐ tenths and ☐ hundredths.

☐ ones + ☐ tenths + ☐ hundredths = ☐

Ron says he can partition 0.34 in more than one way.

Use Ron's method to partition 0.45 in more than one way.

Describe the pattern.

$$7{,}000 \div 100 = 70$$
$$700 \div 100 = 7$$
$$70 \div 100 = 0.7$$
$$7 \div 100 = 0.07$$

Can you complete the pattern starting with 5,300 divided by 100?

Teddy says,

45 divided by 100 is 0.45 so I know 0.45 is 100 times smaller than 45

Mo says,

45 divided by 100 is 0.45 so I know 45 is 100 times bigger than 0.45

Who is correct?
Explain your answer.