



the National Parent
Forum of Scotland

count on us



inspire.innovate.educate

Learning Together

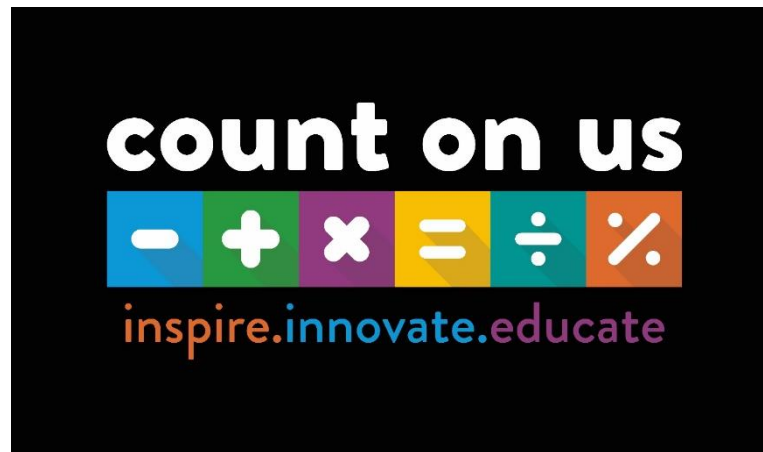
**Online Numeracy and Mathematics sessions for
parents to support Learning at Home**

*With support from Education Scotland and Scottish Government,
building on themes emerging from the 'Making Maths Count'
Group report*



Scottish Government
Riaghaltas na h-Alba
gov.scot

**MAKING
MATHS
COUNT**



Learning Together Session 5

Thursday 18th June 10:00

Decimals

#npfsmaths

Twitter : @CountOnUsEd

Learning Together Session 5

Decimals:

- What is a decimal
- Place value
- Understanding decimals
- Decimals link to fractions
- Ordering decimals

What is a decimal?

What is a decimal?

Decimals are numbers that exist between whole numbers.



What is a decimal?

Decimals are numbers that exist between whole numbers.

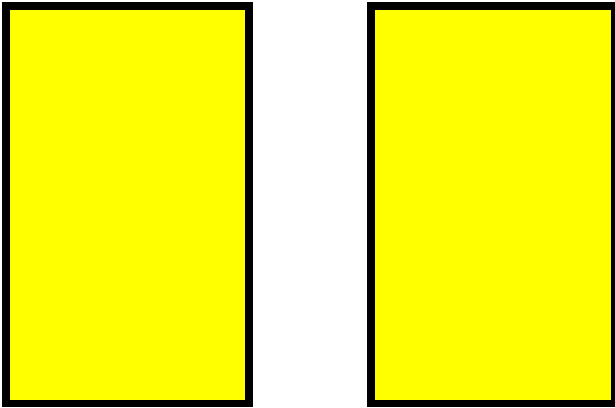


What is a decimal?

Decimals are numbers that exist between whole numbers.

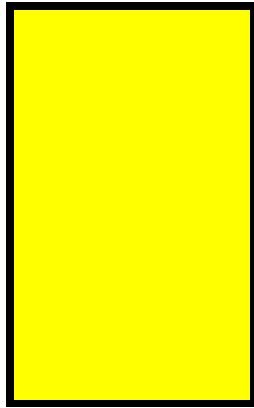
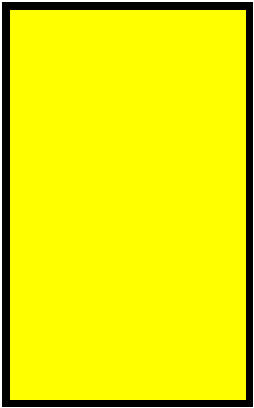


How many coloured blocks are there

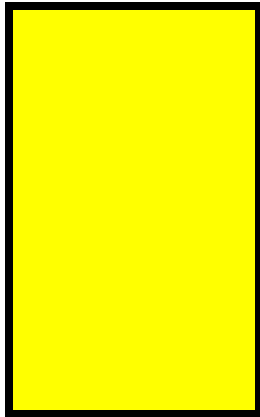
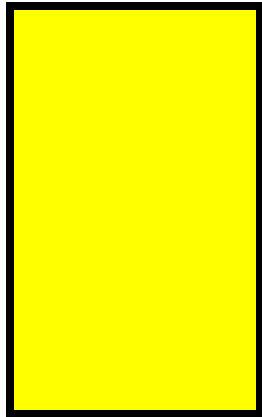


2

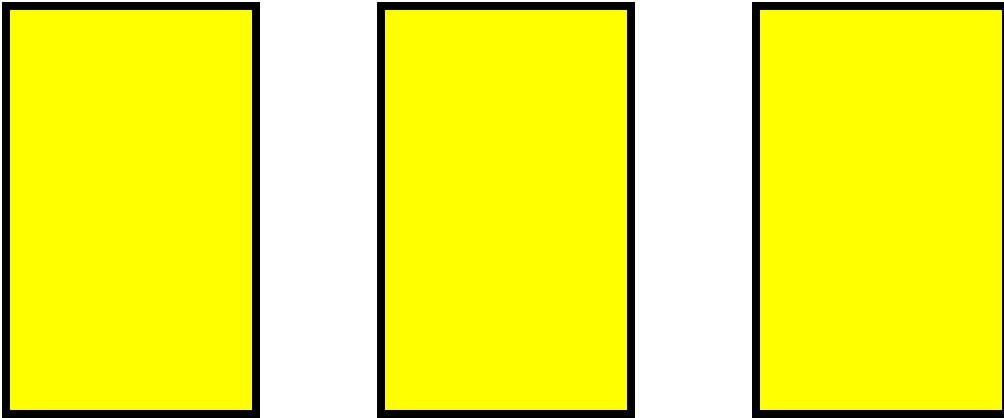
How many coloured blocks are there



4

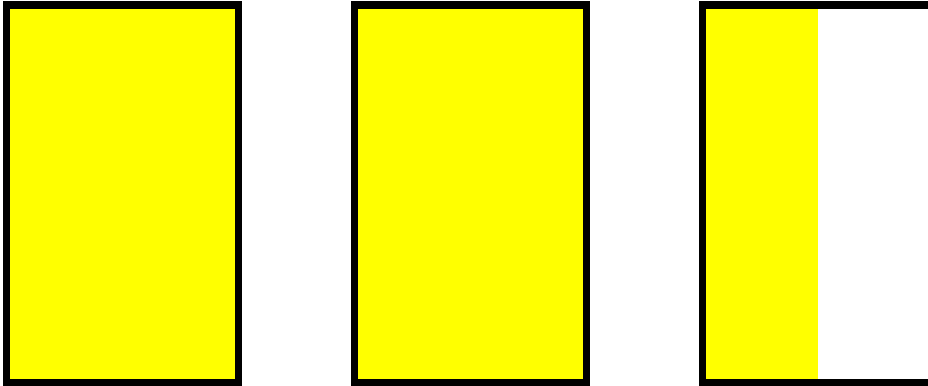


How many coloured blocks are there



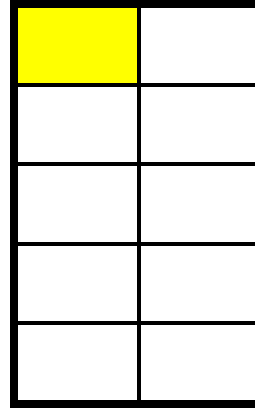
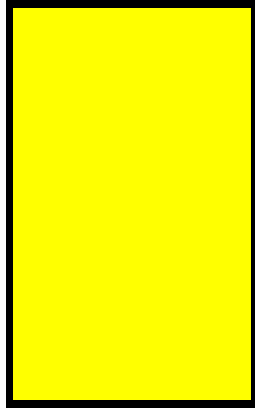
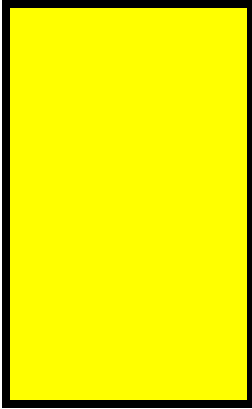
3

How many coloured blocks are there



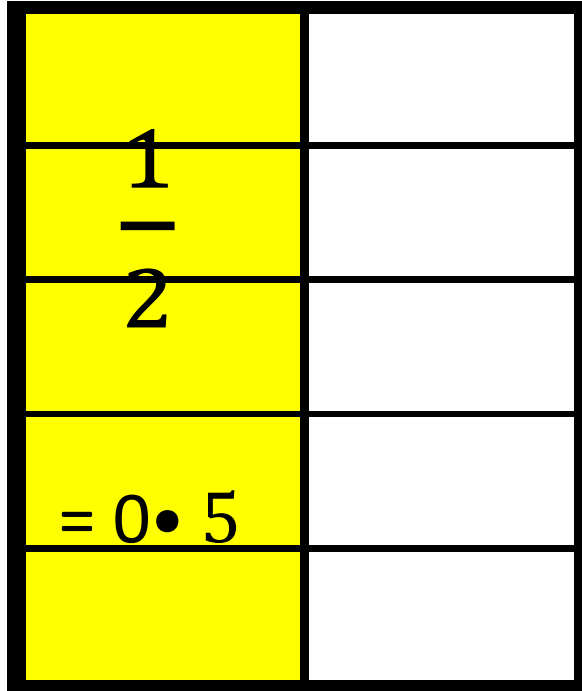
$$2\frac{1}{2}$$

How many coloured blocks are there



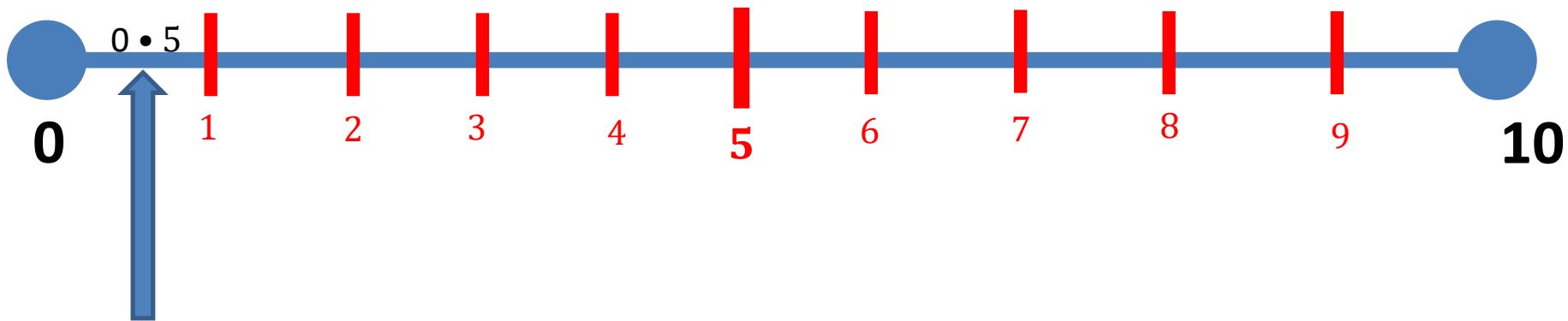
$$2 \frac{1}{10}$$

What decimal fraction is shaded

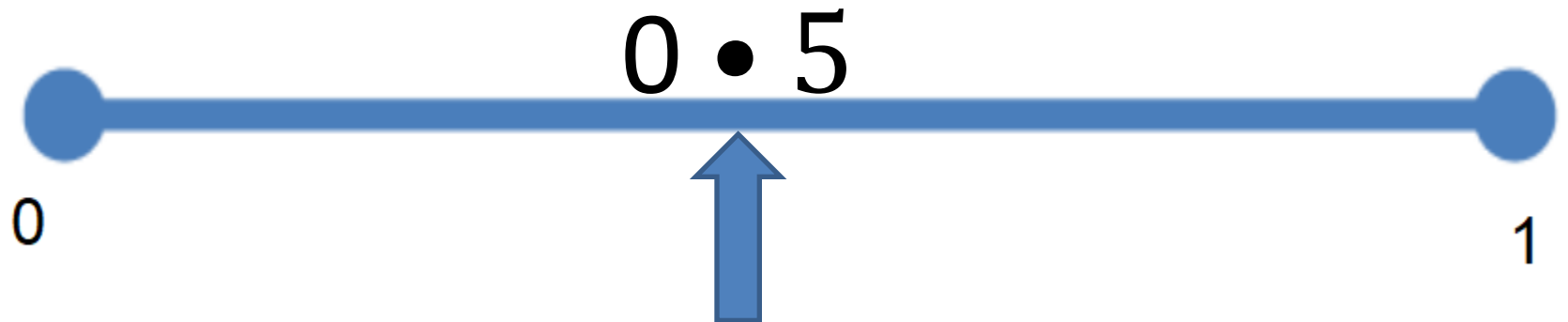
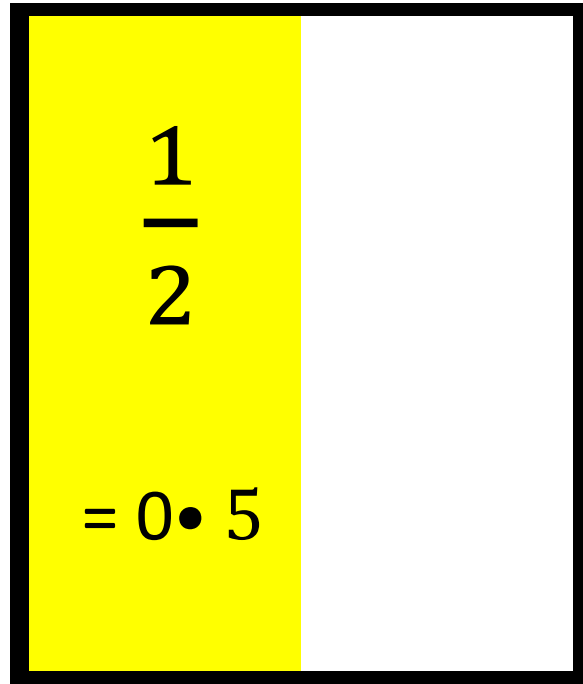


$$\frac{1}{2} = 0.5$$

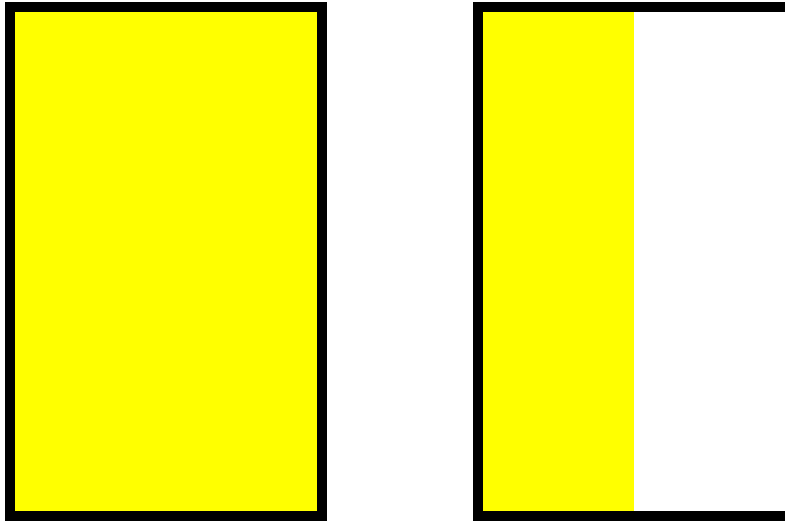
$$\frac{5}{10} = 0.5$$



What decimal fraction is shaded

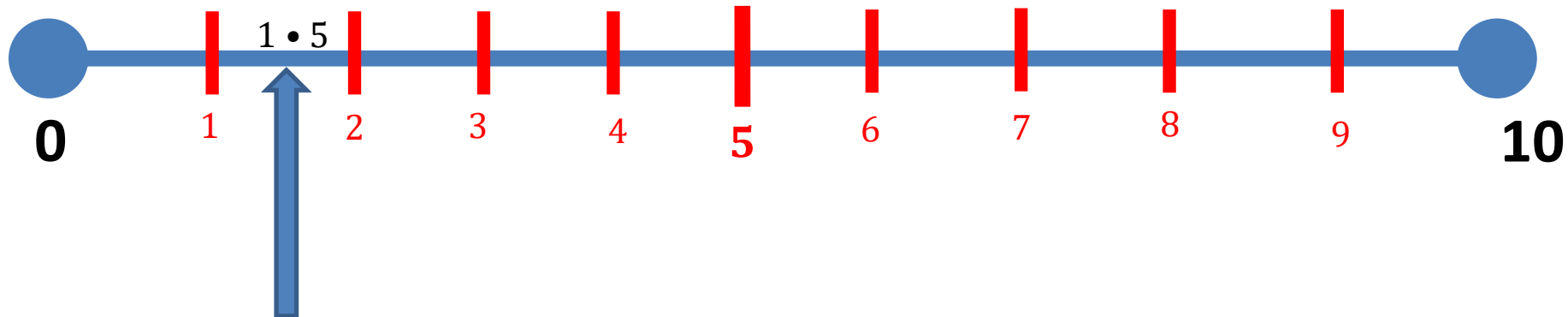


How many coloured blocks are there

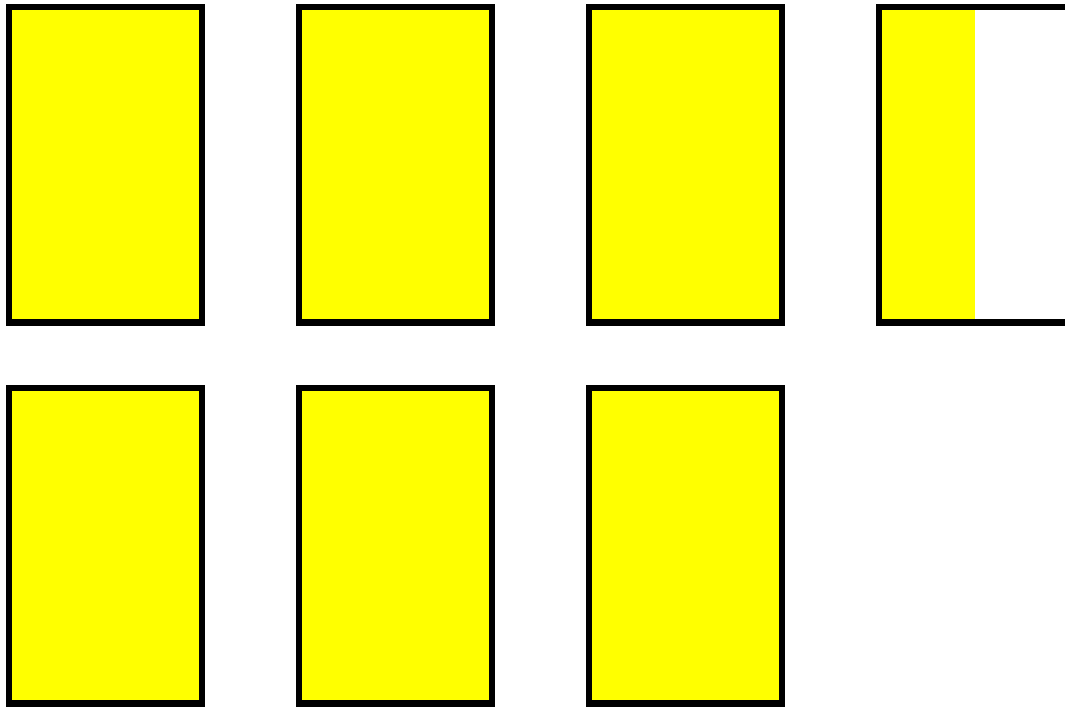


$$1 \frac{1}{2} = 1 \cdot 5$$

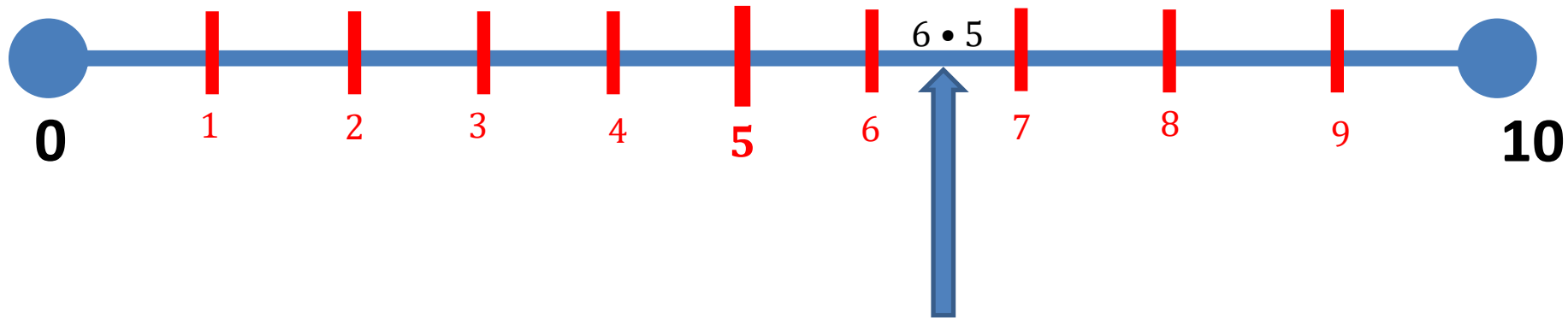
The decimal point separates the whole number part from the fractional part



How many coloured blocks are there

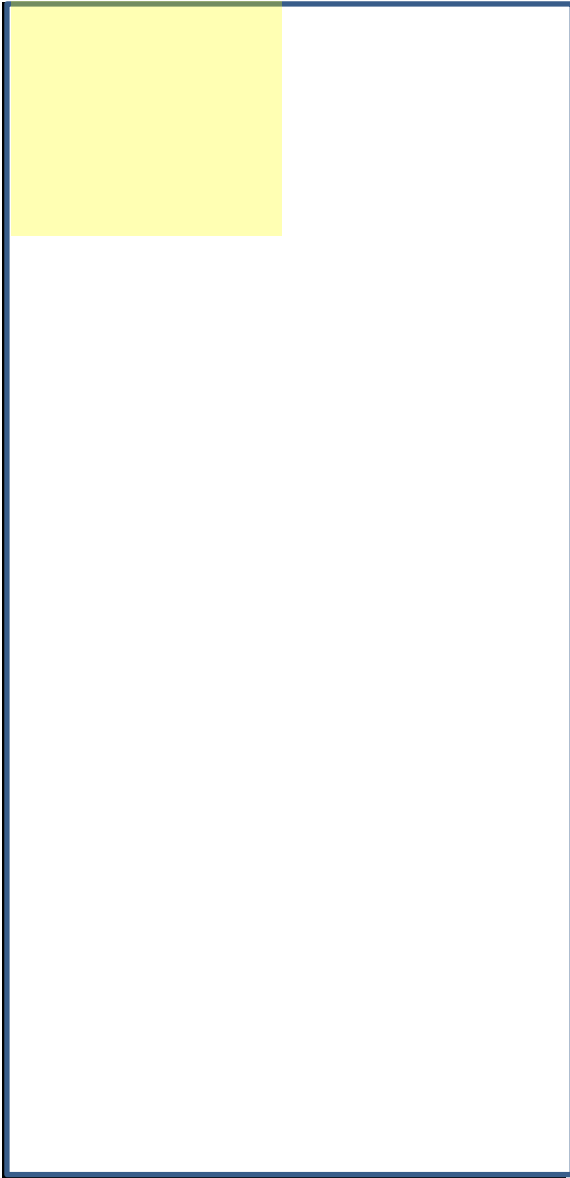


$$6\frac{1}{2} = 6 \cdot 5$$



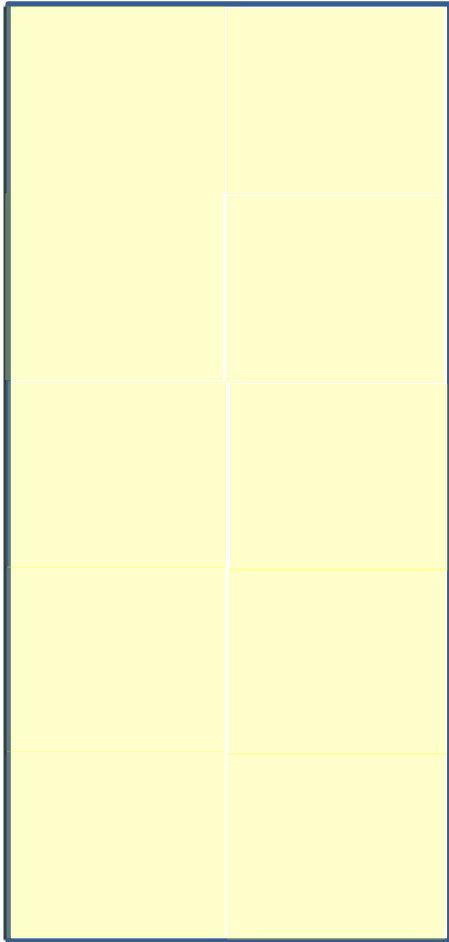
1

=0.1



Ones	Tenths
0	.1

1



$$\frac{1}{10} = 0.1$$

$$\frac{6}{10} = 0.6$$

$$\frac{2}{10} = 0.2$$

$$\frac{7}{10} = 0.7$$

$$\frac{3}{10} = 0.3$$

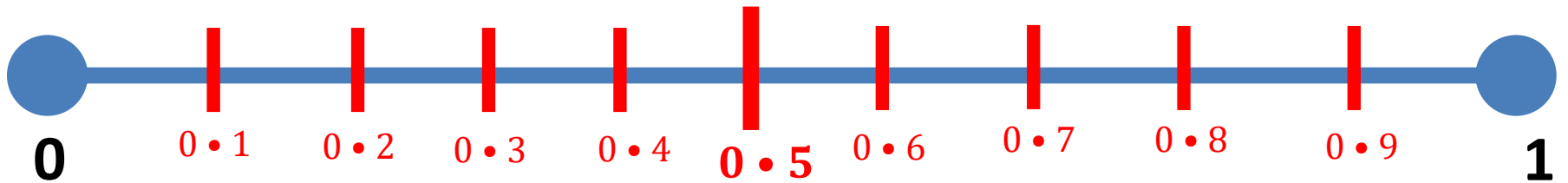
$$\frac{8}{10} = 0.8$$

$$\frac{4}{10} = 0.4$$

$$\frac{9}{10} = 0.9$$

$$\frac{5}{10} = 0.5$$

$$\frac{10}{10} = 1.0$$

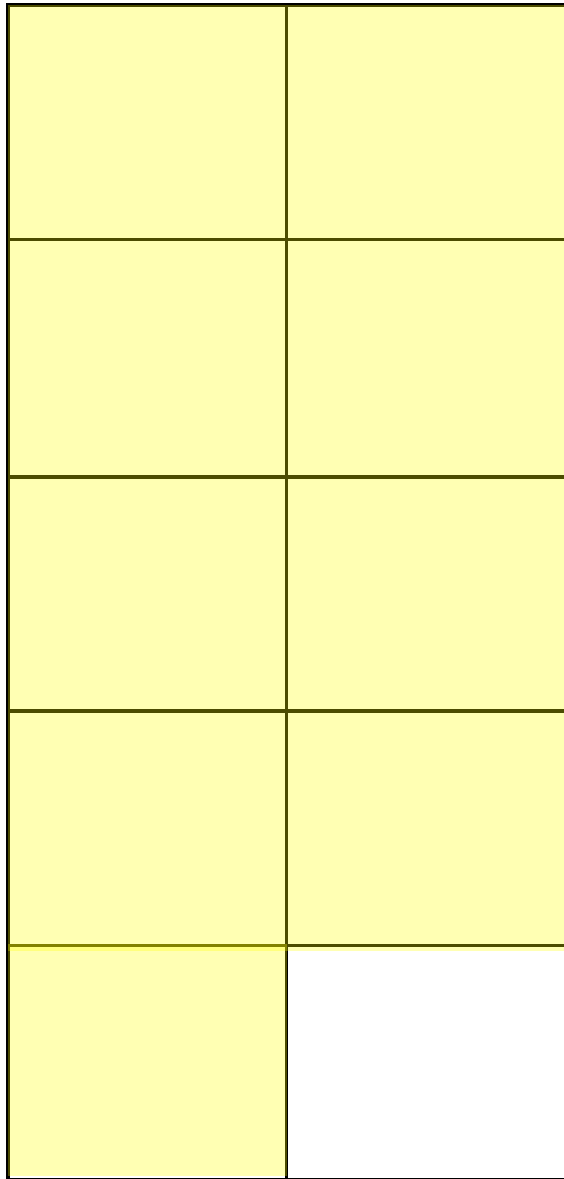


1

Ones	Tenths
0	4

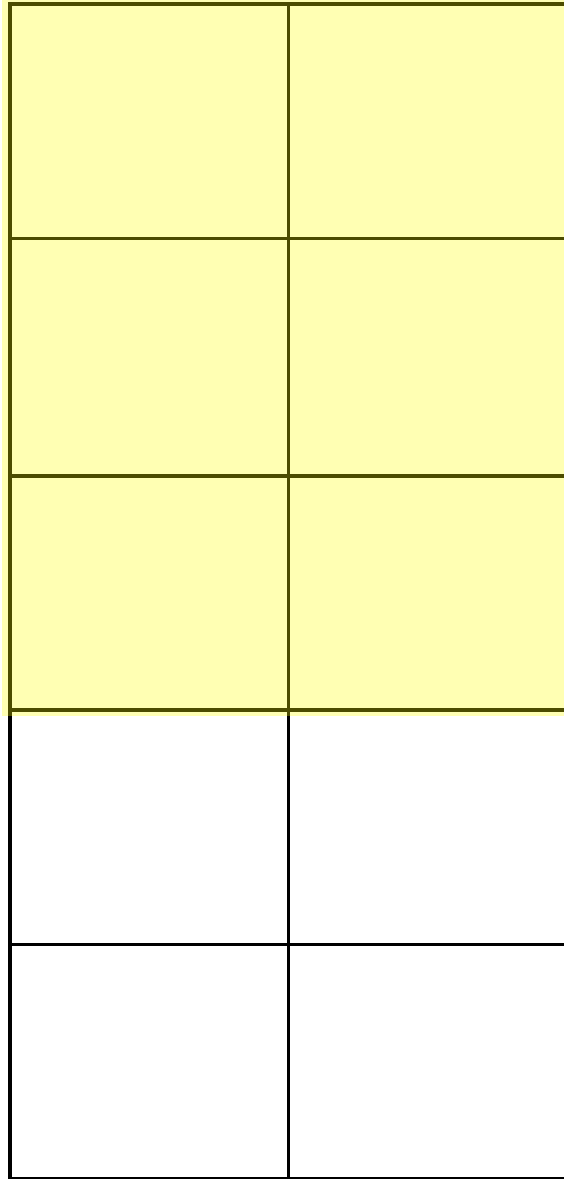
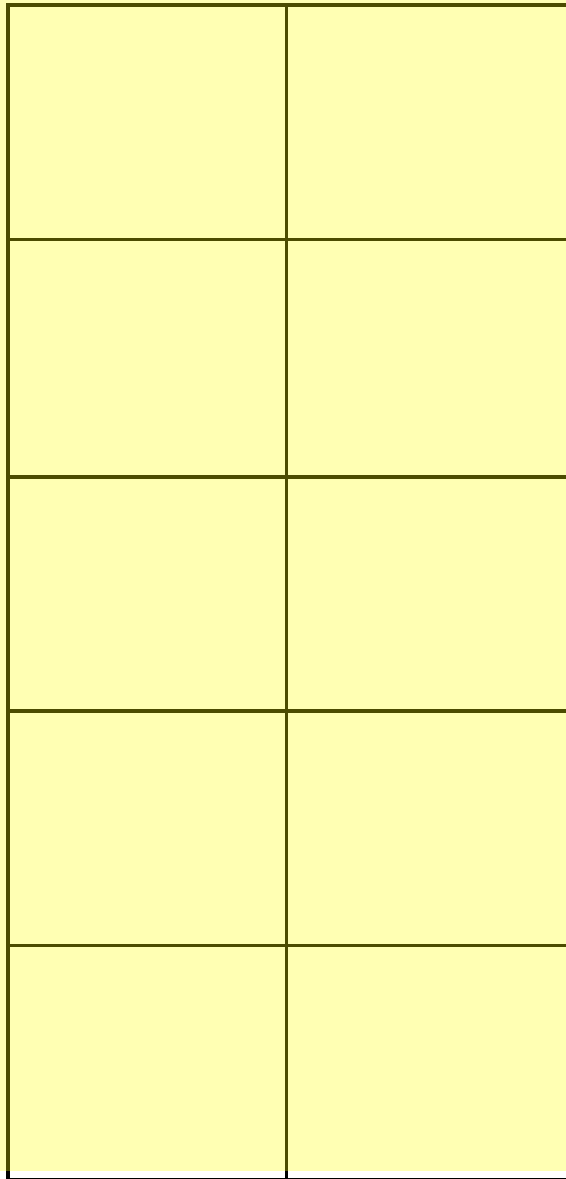
$$\frac{4}{10} = 0.4$$

1



Ones	Tenths
0	• 9

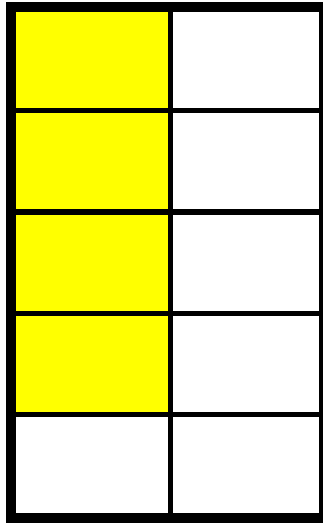
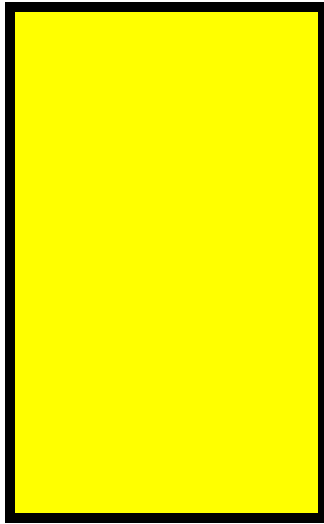
$$\frac{9}{10} = 0.9$$



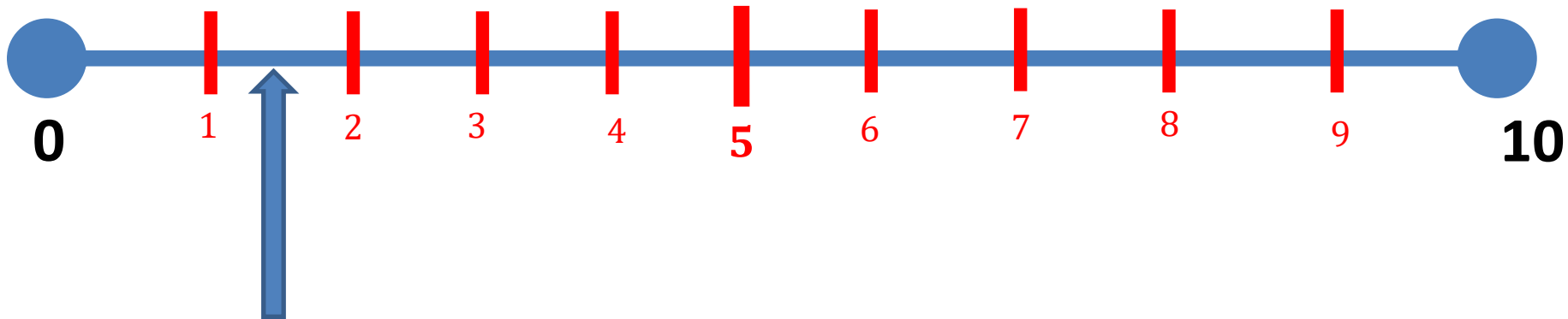
Ones	Tenths
1	6

$$1 \frac{6}{10} = 1 \cdot 6$$

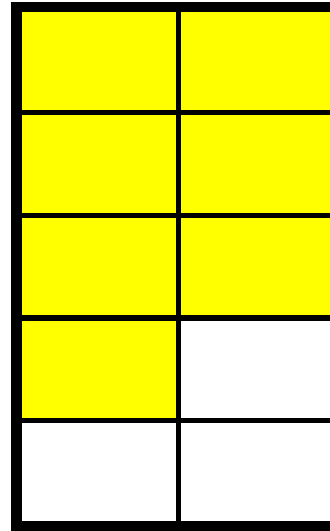
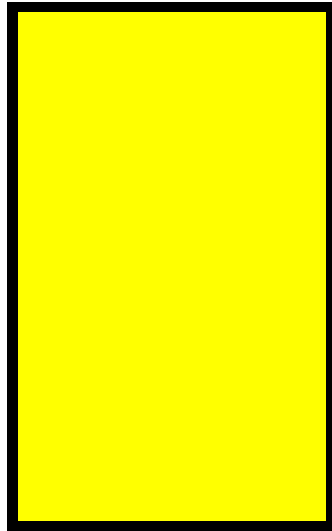
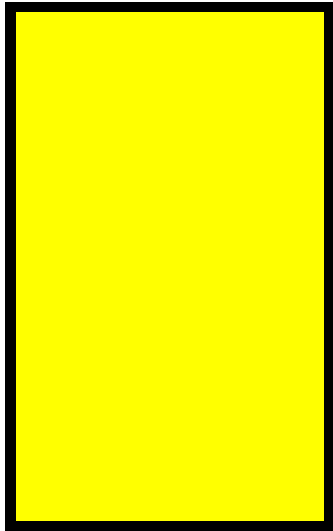
How many coloured blocks are there



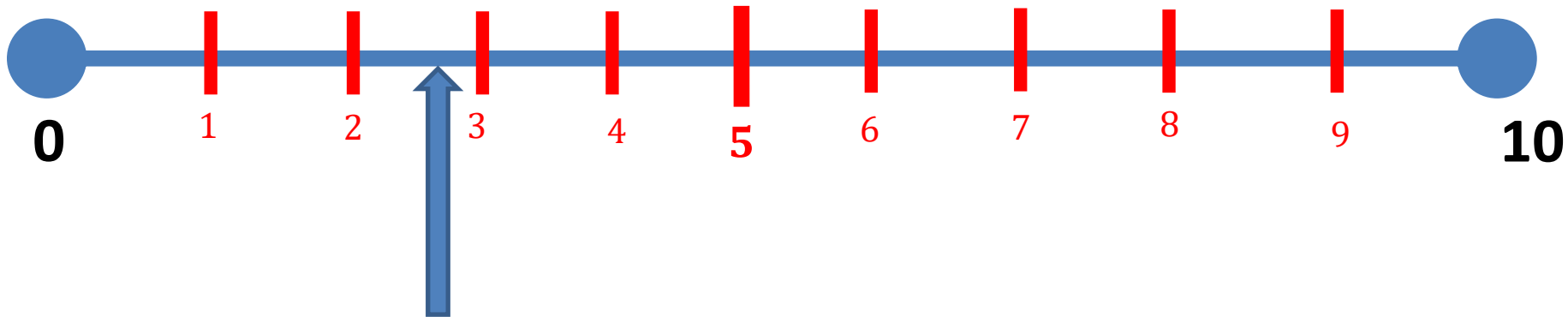
$$1 \frac{4}{10} = 1 \cdot 4$$



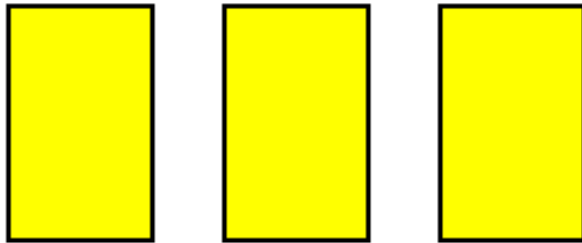
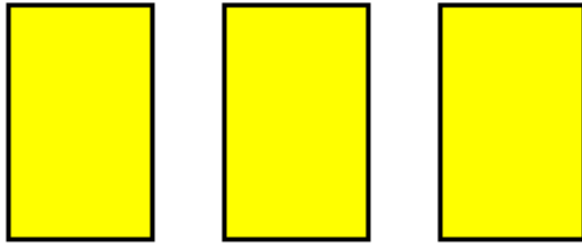
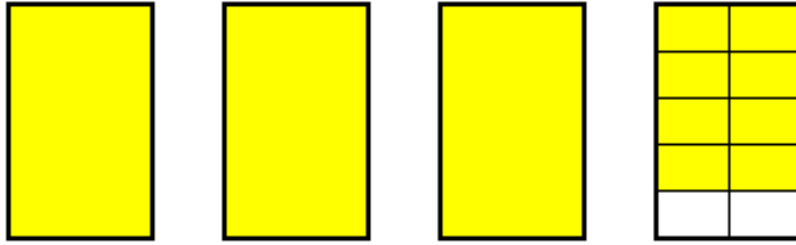
How many coloured blocks are there



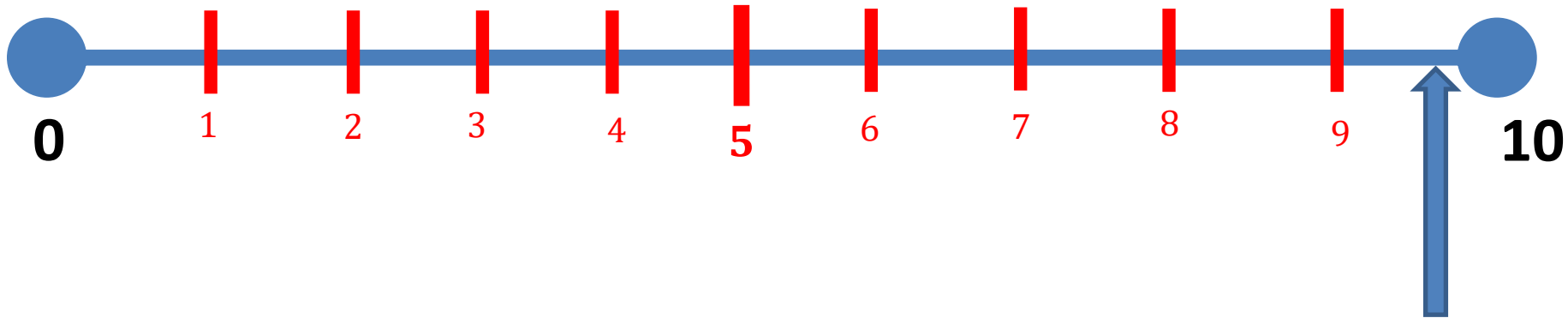
$$2 \frac{7}{10} = 2 \cdot 7$$



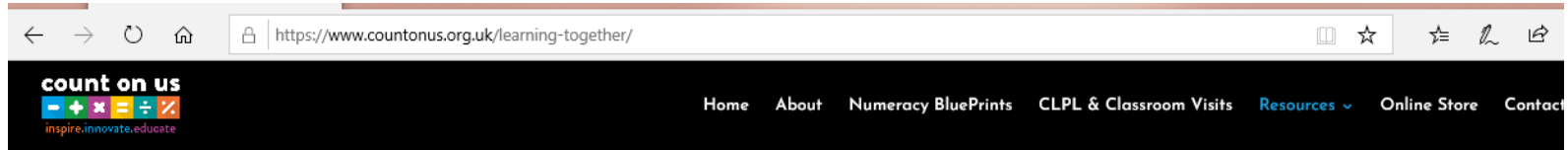
How many coloured blocks are there



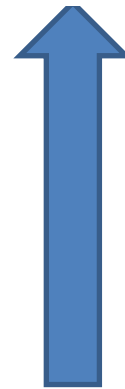
$$9 \frac{8}{10} = 9 \cdot 8$$



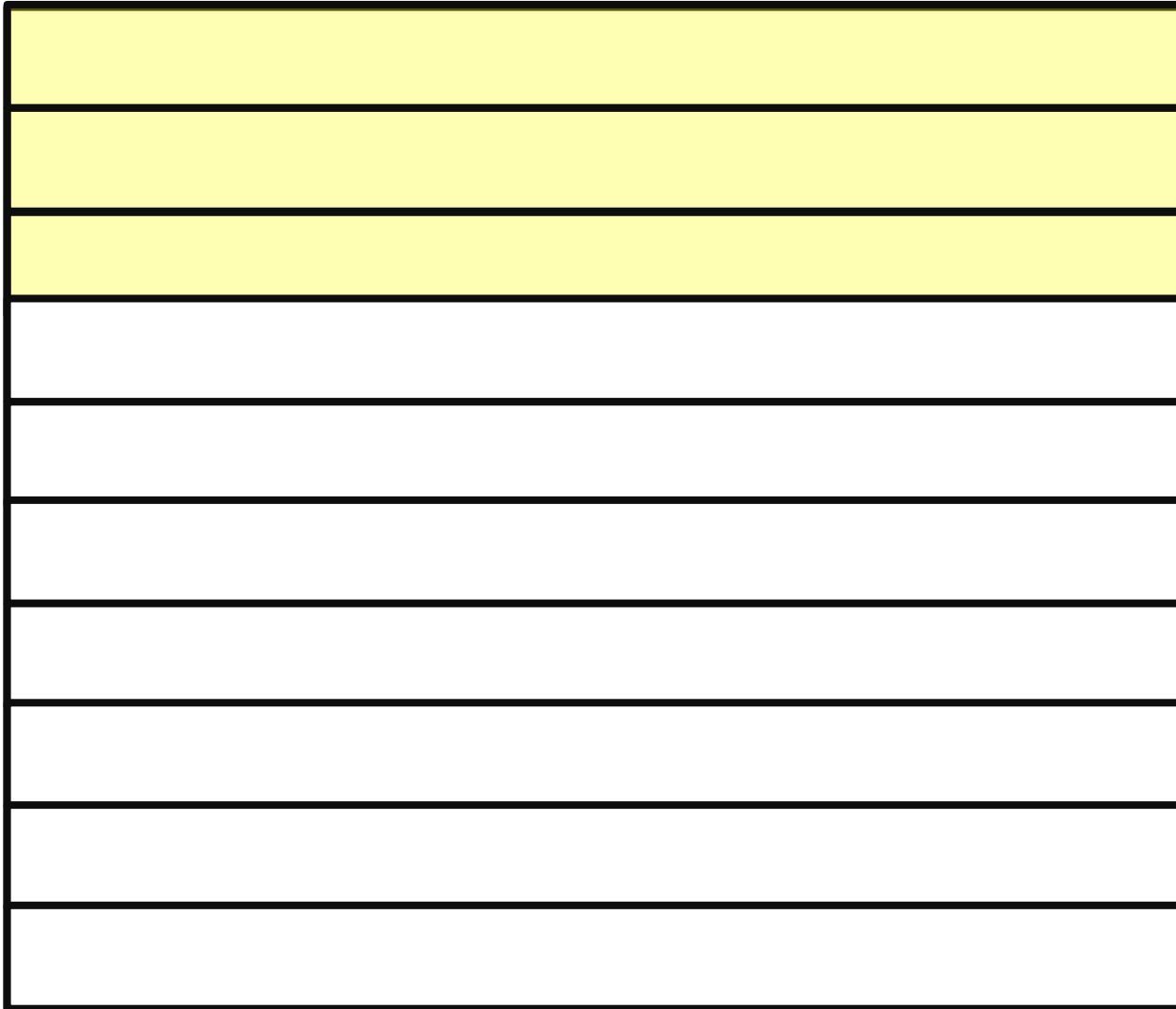
All slides and resources can be found at www.countonus.org.uk/learning-together



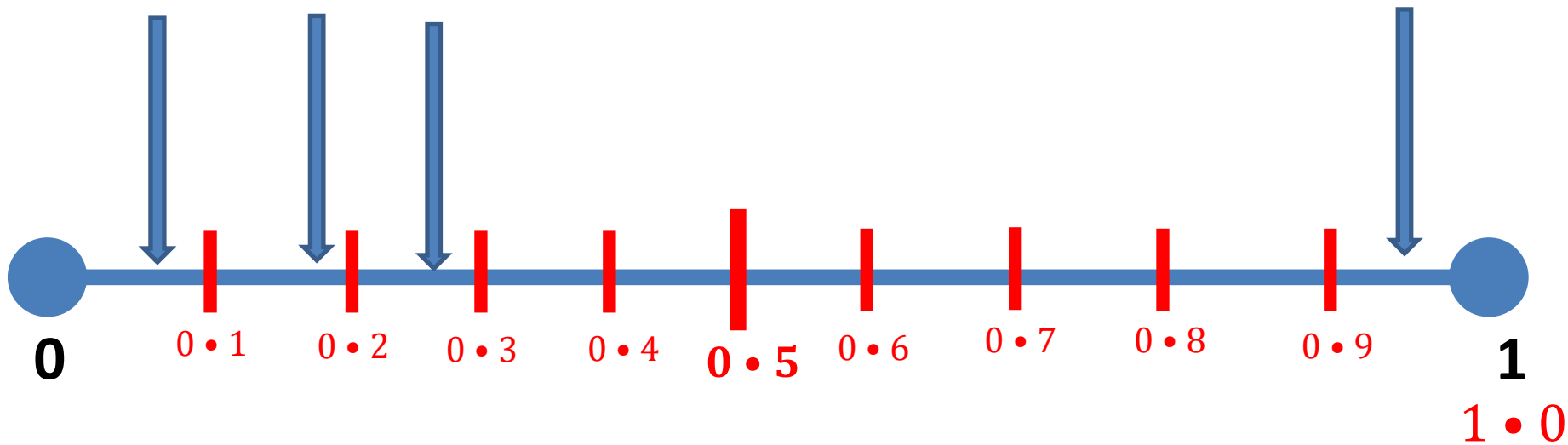
Session 5 18th June 10am - 10.45am	Session 5 18th June 10am - 10.45am	Session 5 18th June 10am - 10.45am
Fractions, Decimal Fractions & Percentages (Part 2)	Fractions, Decimal Fractions & Percentages (Part 2)	Fractions, Decimal Fractions & Percentages (Part 2)
Slides	Tasks	YouTube



1



the shaded section = $0 \cdot 3$



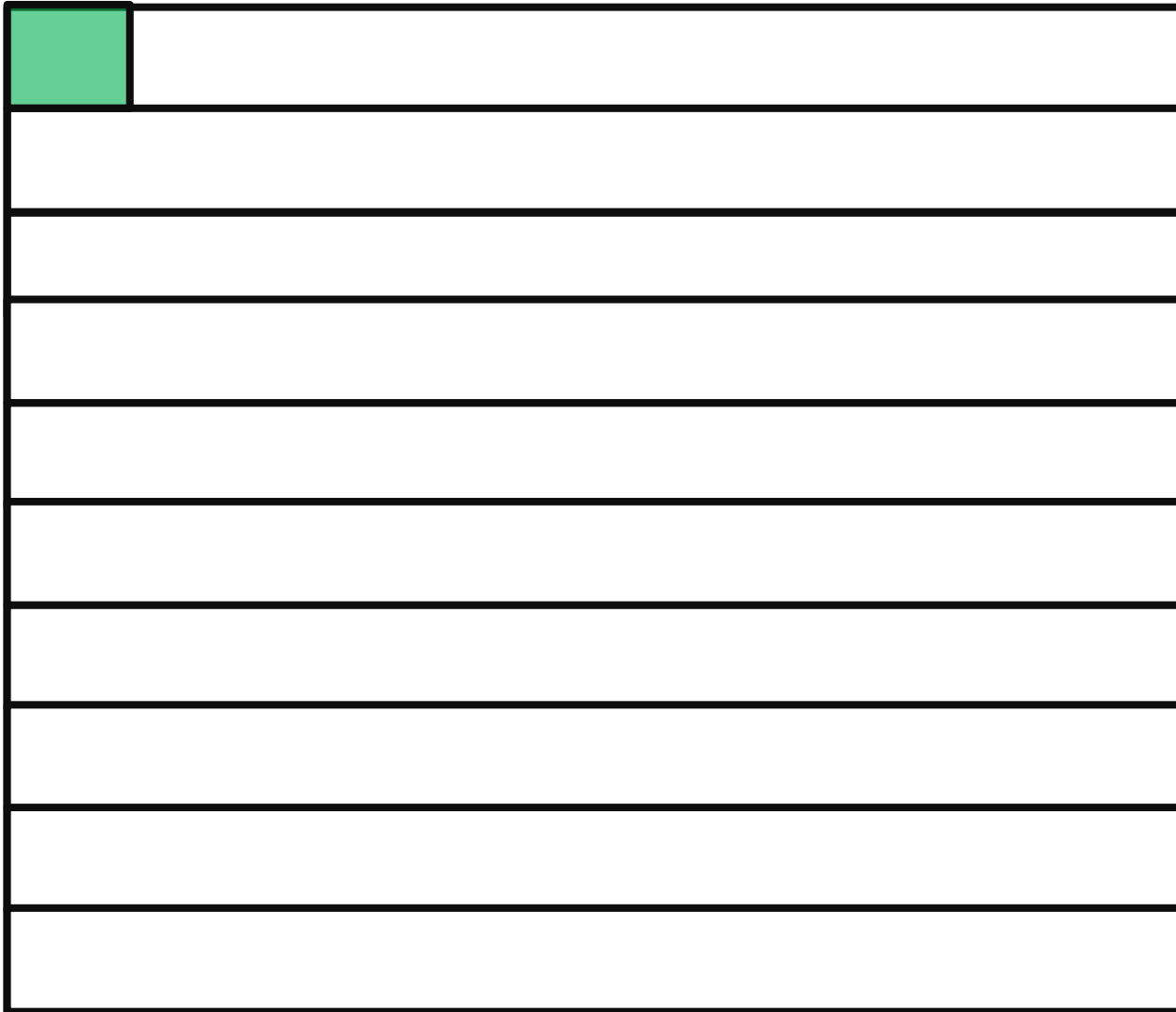
More decimal numbers exist in between

0 and 0.1

0.1 and 0.2

0.2 and 0.3 etc

What does the shaded section represent here?





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

0.01

$$\frac{1}{100} = 0 \cdot 01$$

Ones

Tenths

Hundredths

0

•

0

1

Ones	Tenths	Hundredths
0	0	1

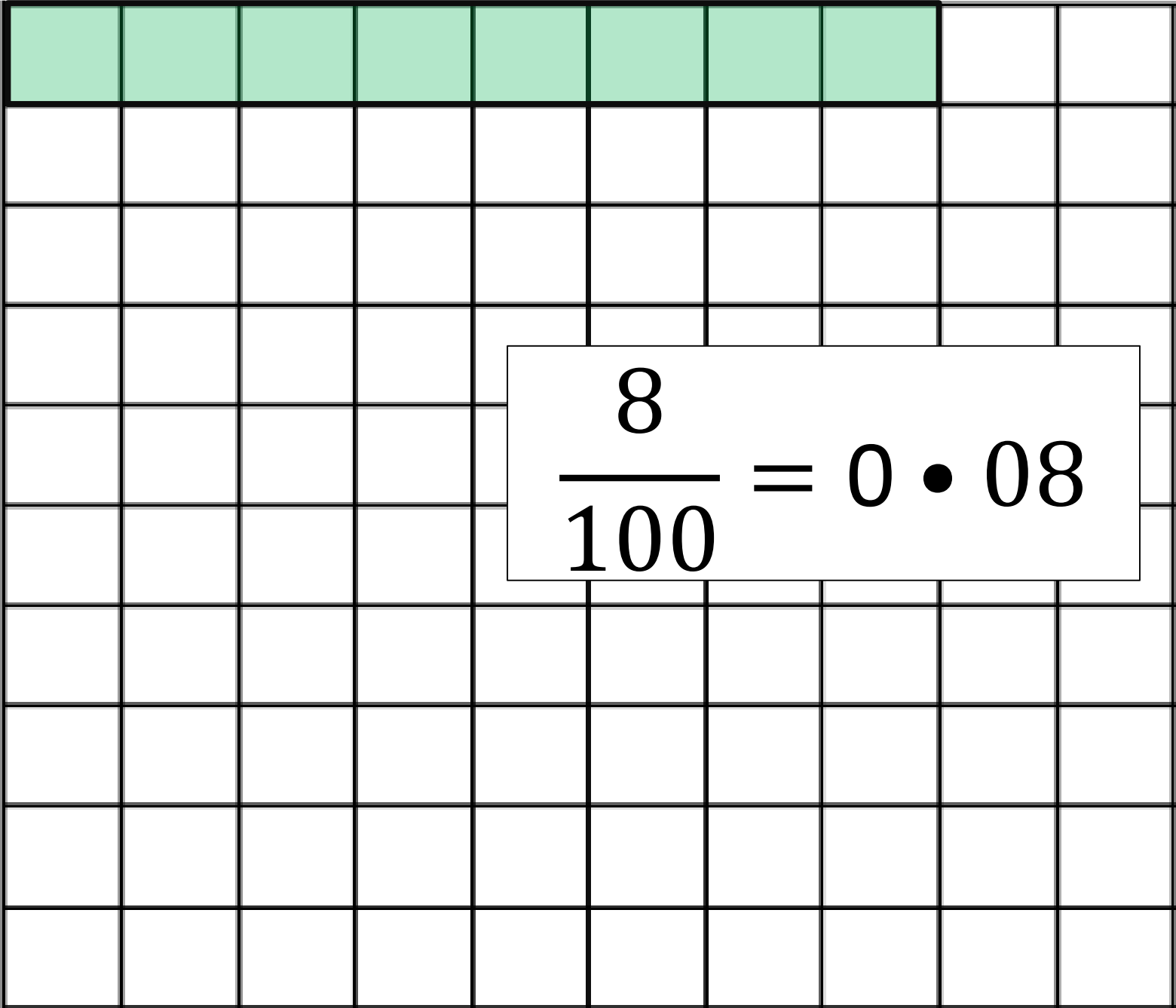
$$\frac{1}{100} = 0.01$$

$$\frac{3}{100} = 0 \cdot 03$$

Ones	Tenths	Hundredths
0	0	3

Ones	Tenths	Hundredths
0	0	3

$$\frac{3}{100} = 0.03$$


$$\frac{8}{100} = 0.08$$

Ones	Tenths	Hundredths
0	0	8

$$\frac{8}{100} = 0.08$$

$$\frac{10}{100} = 0 \cdot 10$$

$$\frac{1}{10} = 0 \cdot 1$$

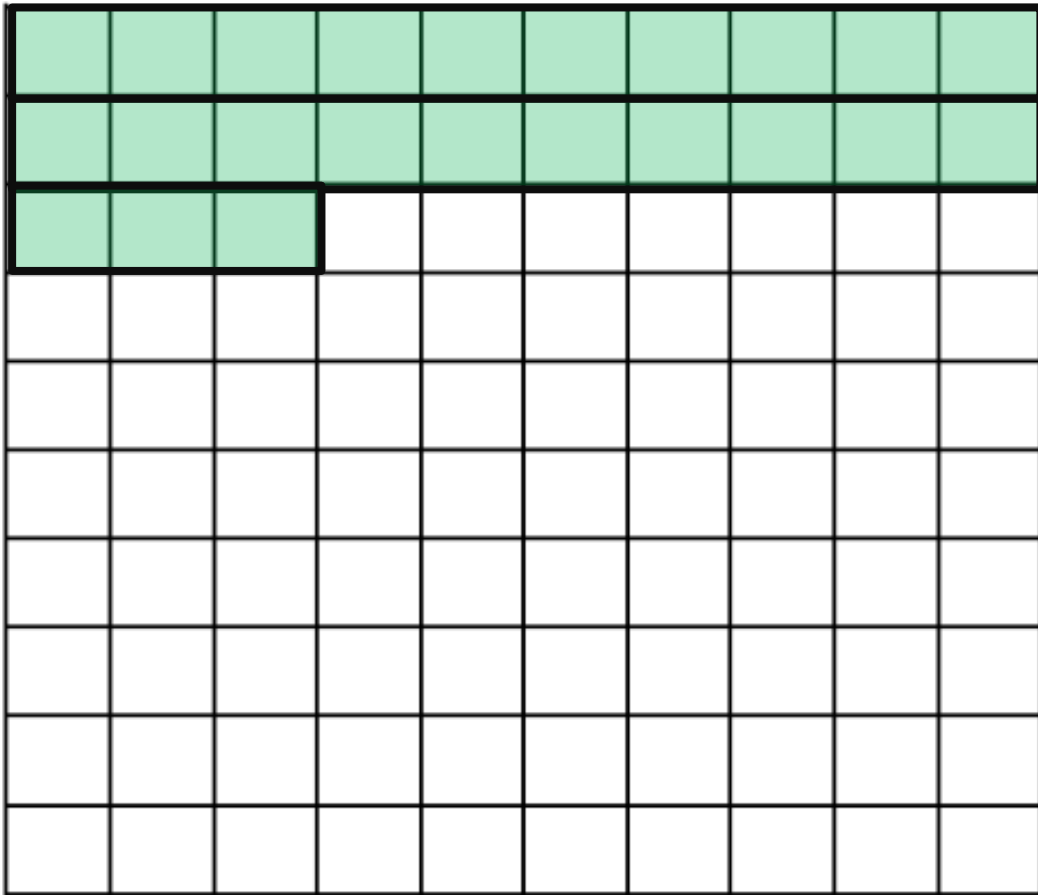
$$\frac{1}{10} = \frac{10}{100} = 0 \cdot 1 = 0 \cdot 10$$

Ones	Tenths	Hundredths
0	1	0

$$\frac{10}{100} = 0 \cdot 10$$

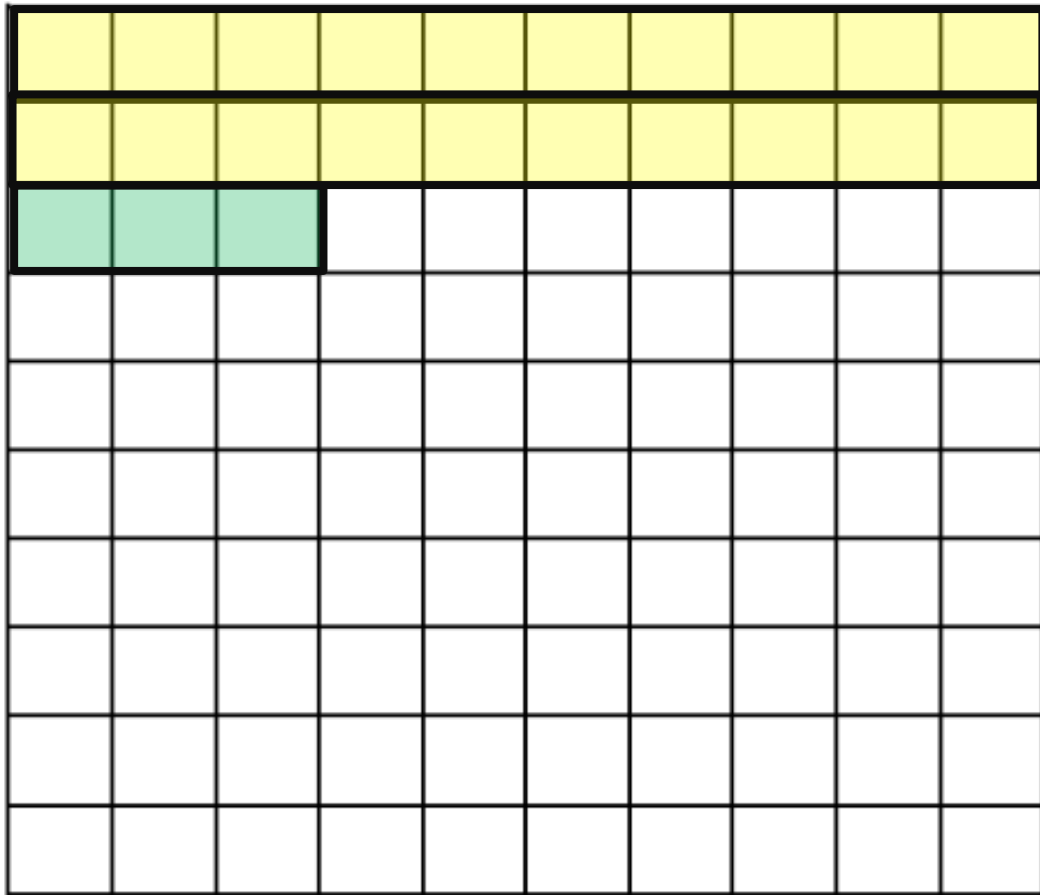
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.2
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.5
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.50
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.70
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.80
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00



$$\frac{23}{100} = 0 \cdot 23$$

Ones	Tenths	Hundredths
0	.	23

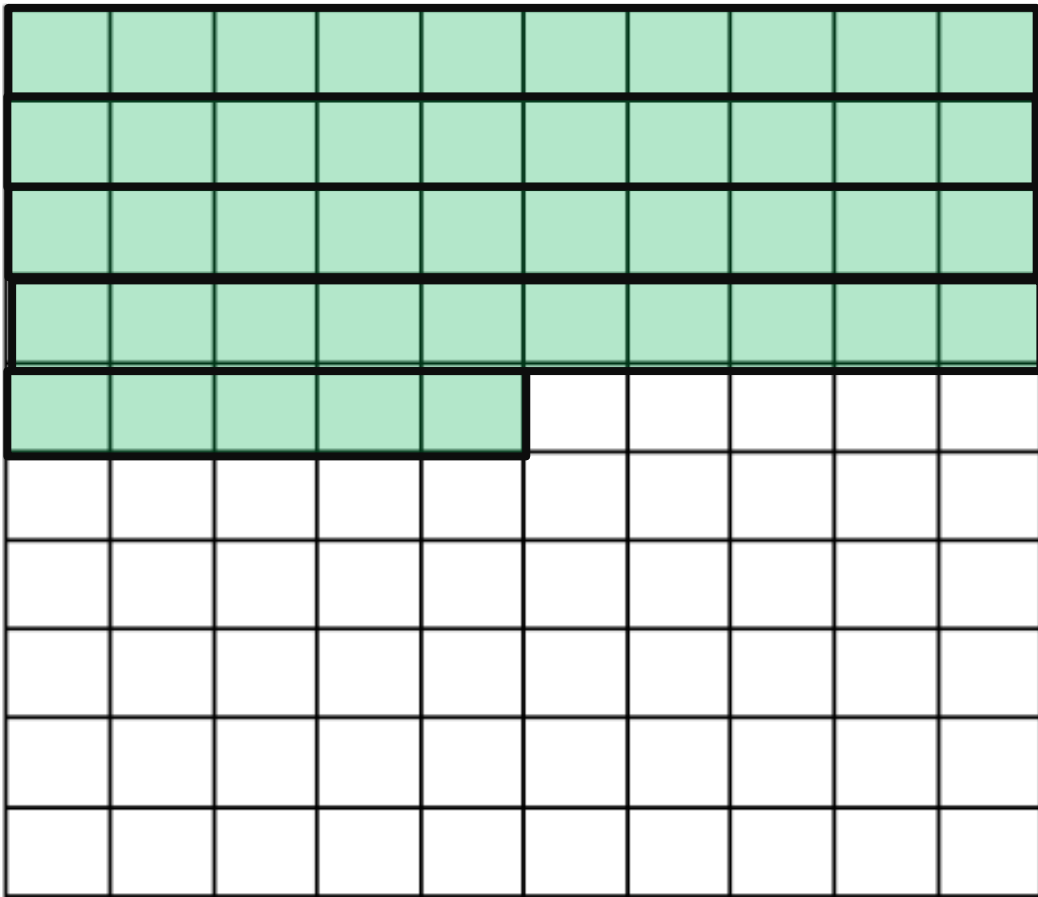


$$\frac{2}{10} = 0 \cdot 2$$

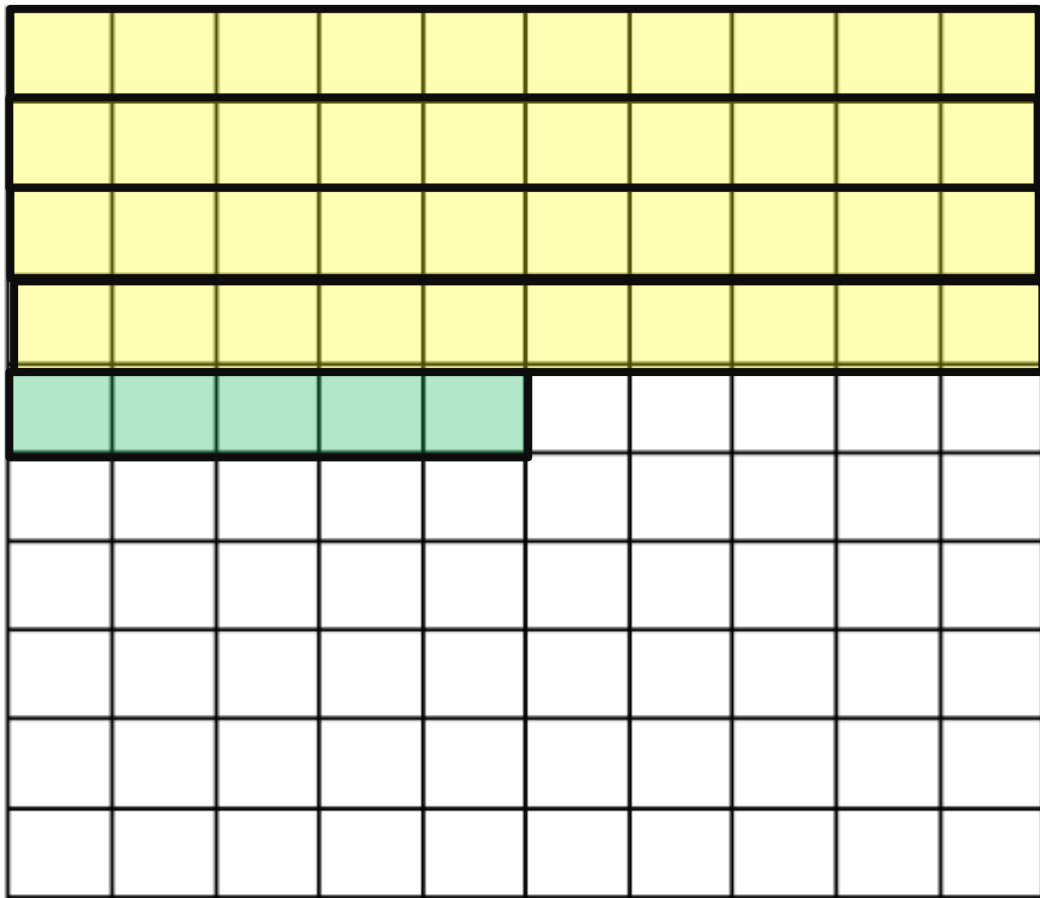
$$\frac{3}{100} = 0 \cdot 03$$

$$0 \cdot 20 + 0 \cdot 03 = 0 \cdot 23$$

Ones	Tenths	Hundredths
0	.	23

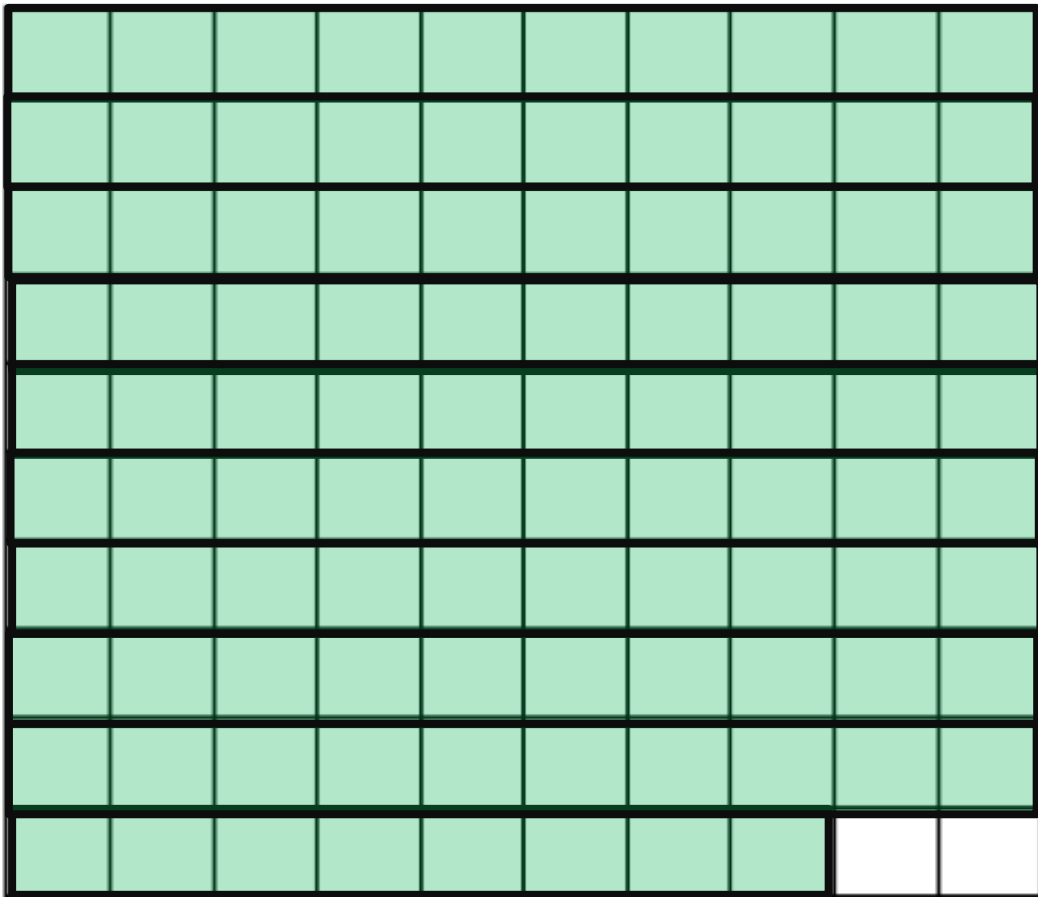


$$\frac{45}{100}$$

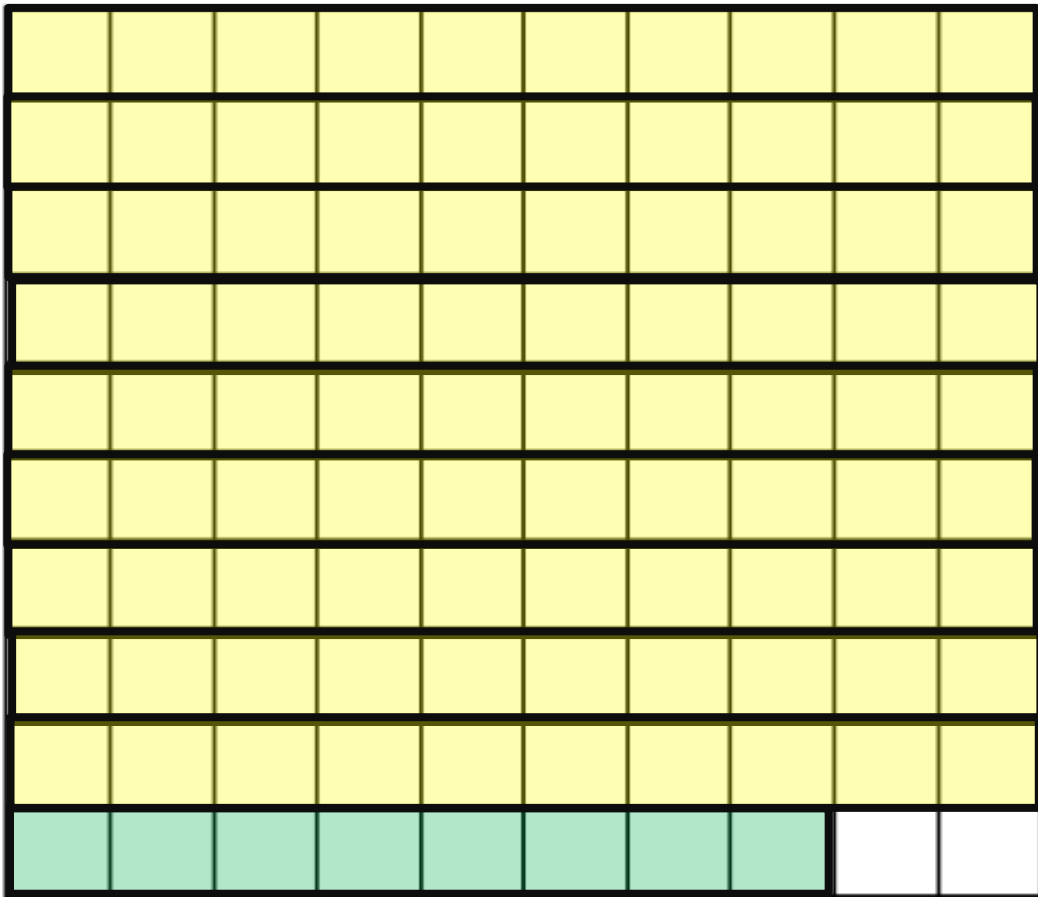


$$\frac{4}{10} + \frac{5}{100}$$

Ones	Tenths	Hundredths
0	4	5



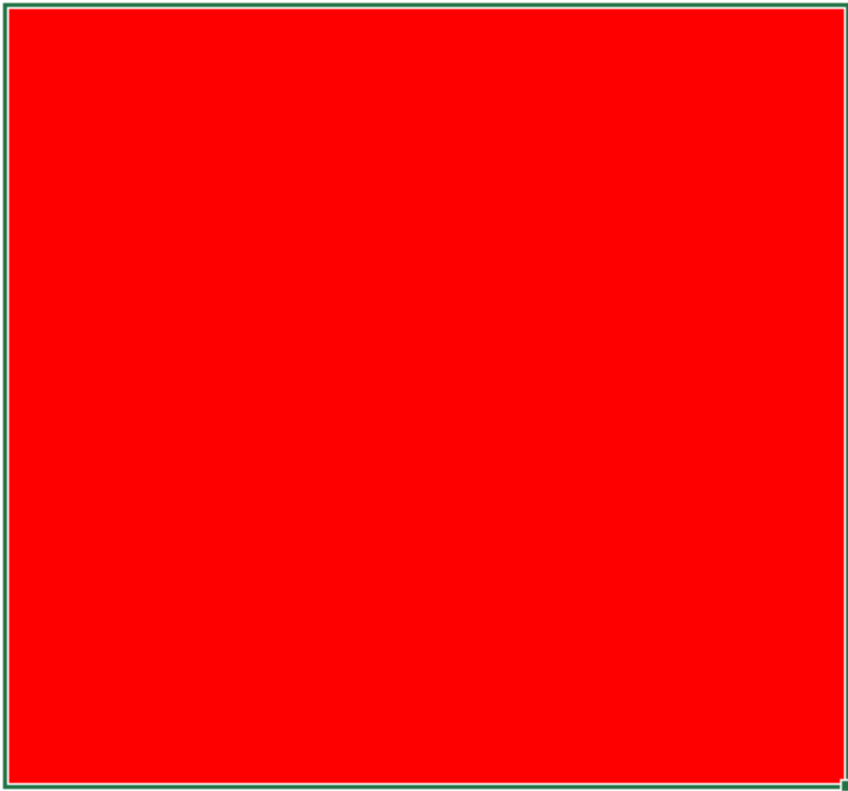
$$\frac{98}{100}$$



$$\frac{9}{10}$$

$$\frac{8}{100}$$

Ones	Tenths	Hundredths
0	9	8



1



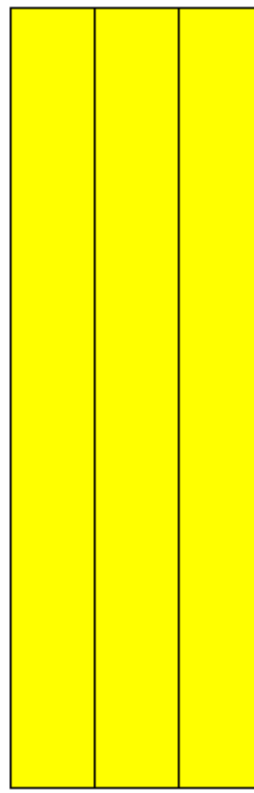
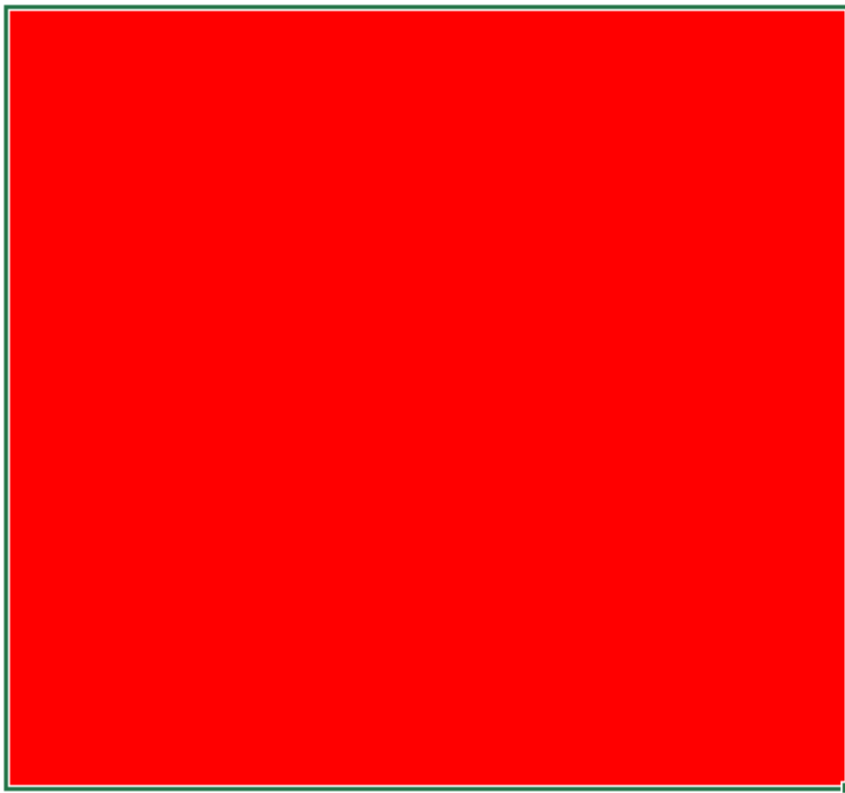
$\frac{1}{10}$

= 0 • 1

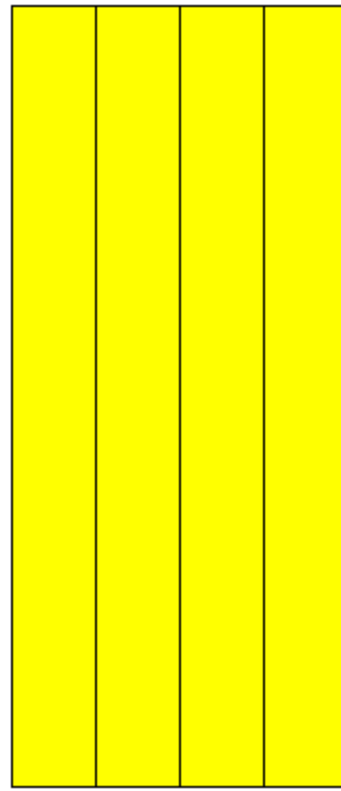
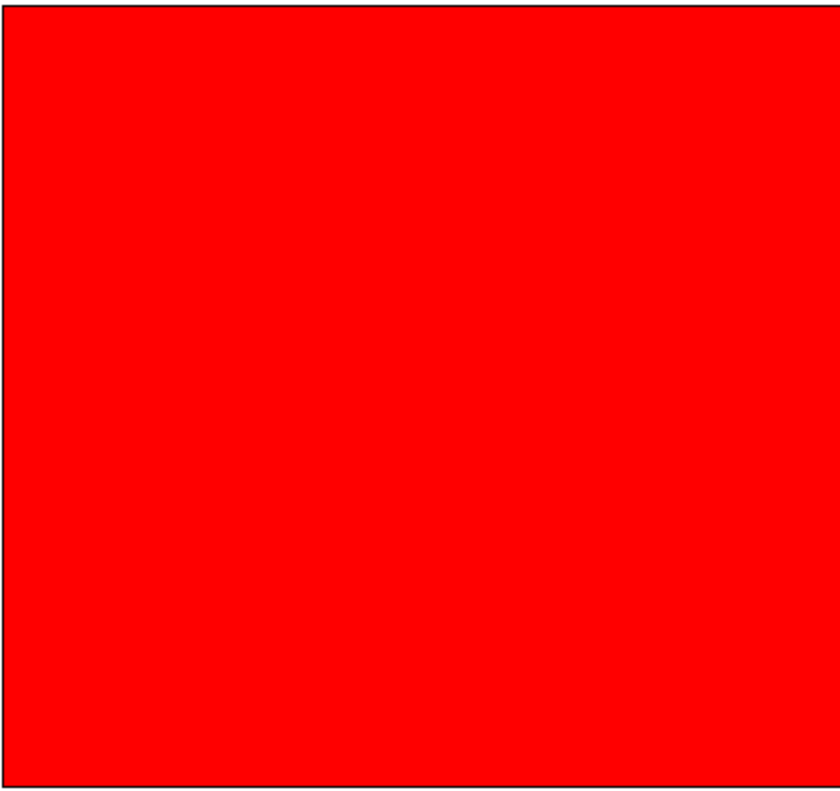


$\frac{1}{100}$

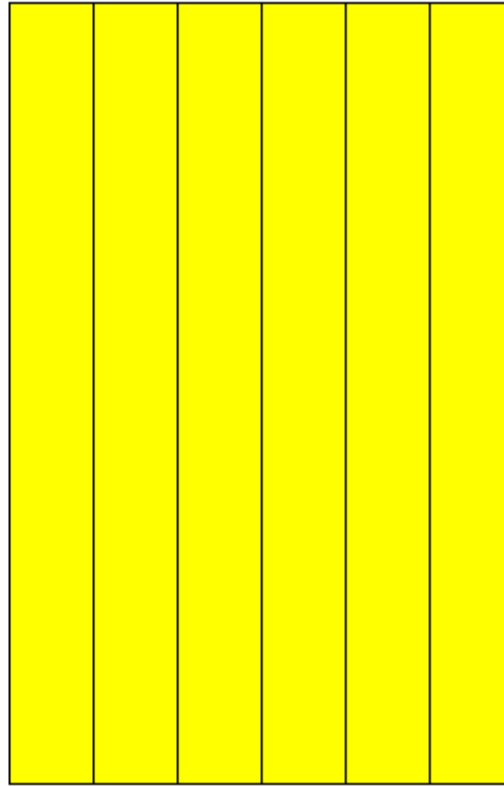
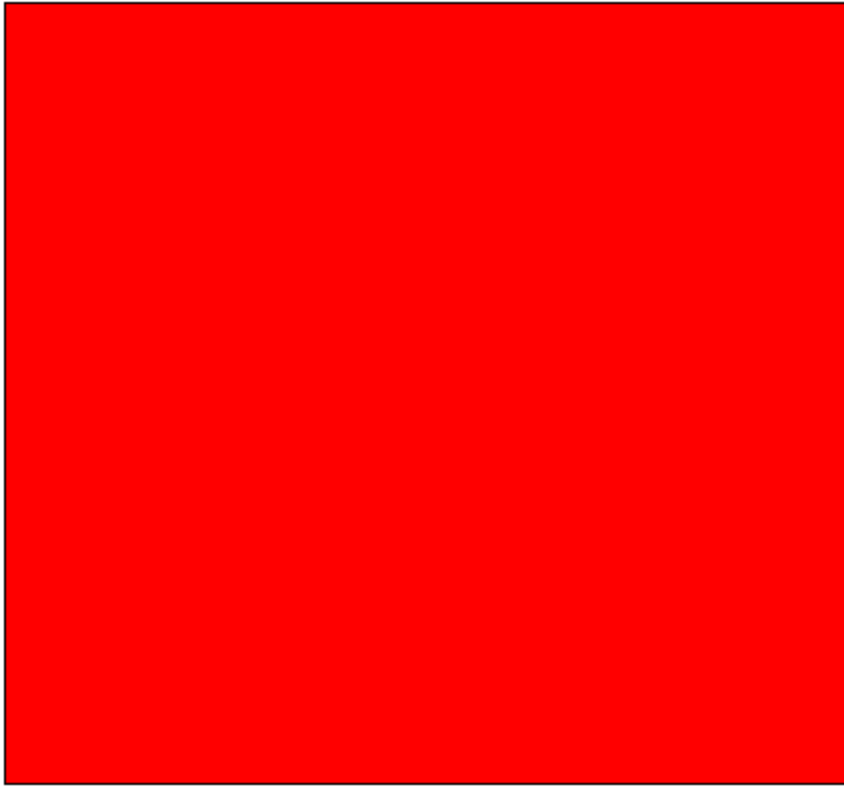
= 0 • 01



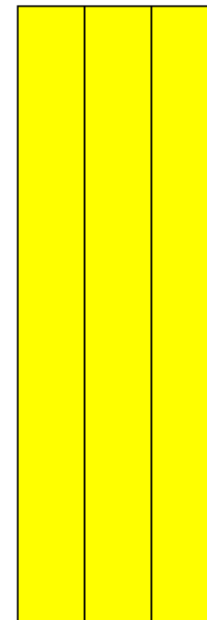
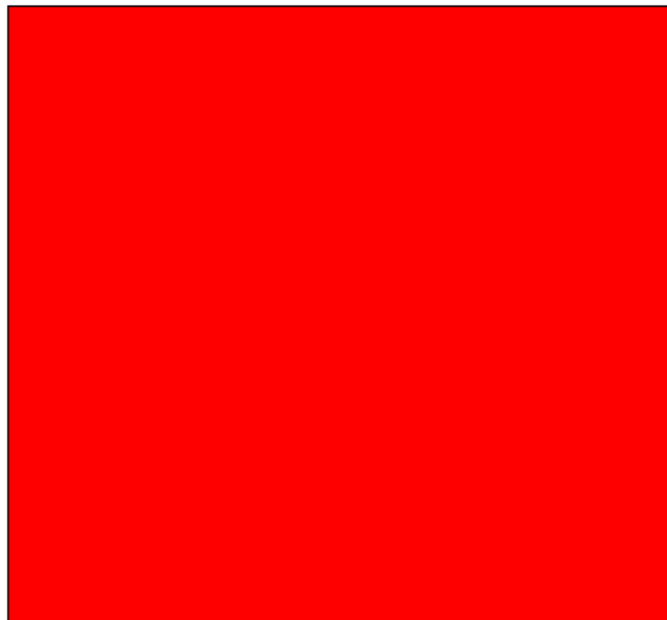
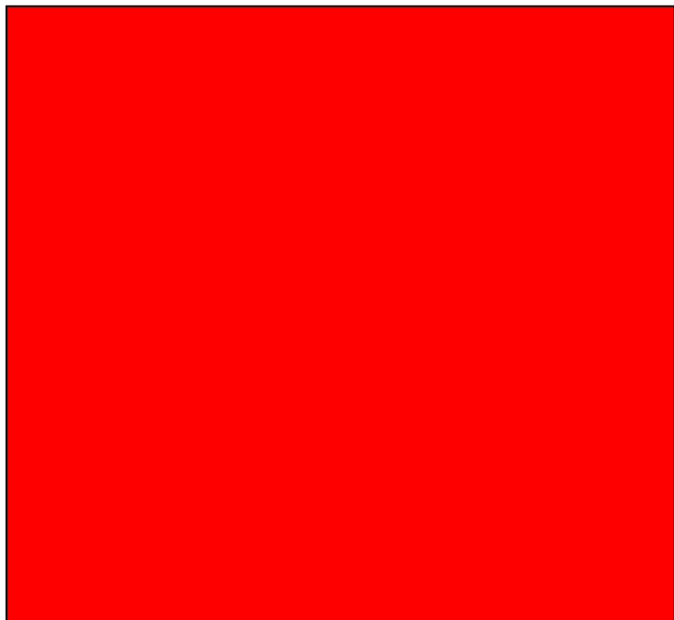
Ones	Tenths	Hundredths
1	3	4



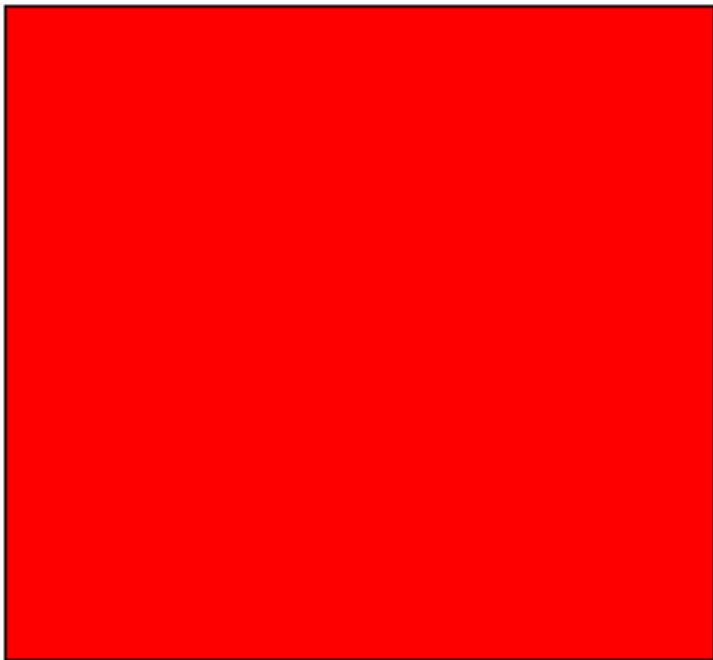
Ones	Tenths	Hundredths
1	4	8



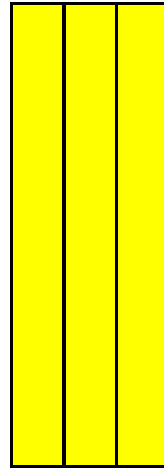
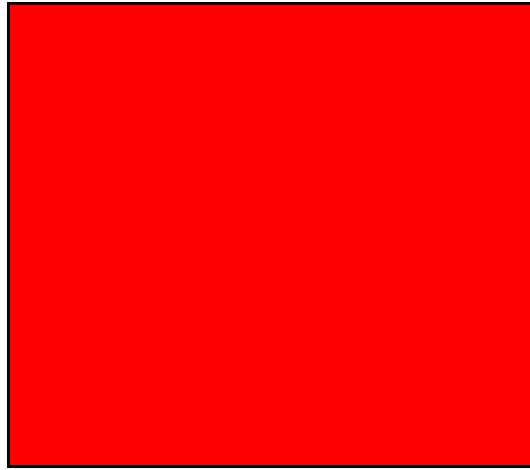
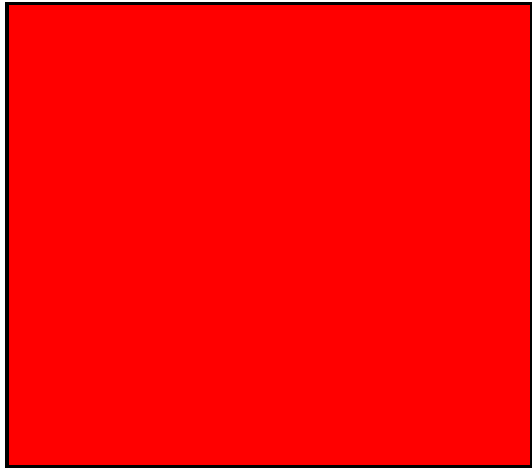
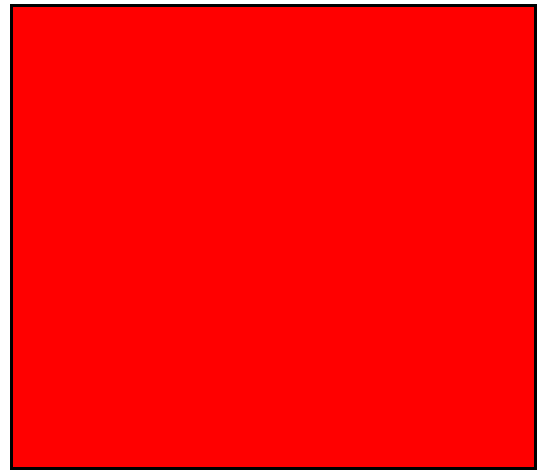
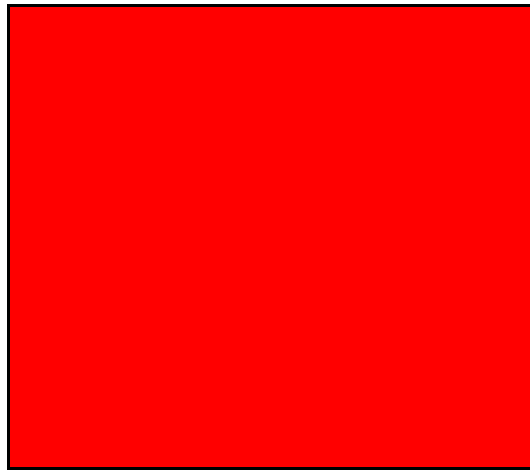
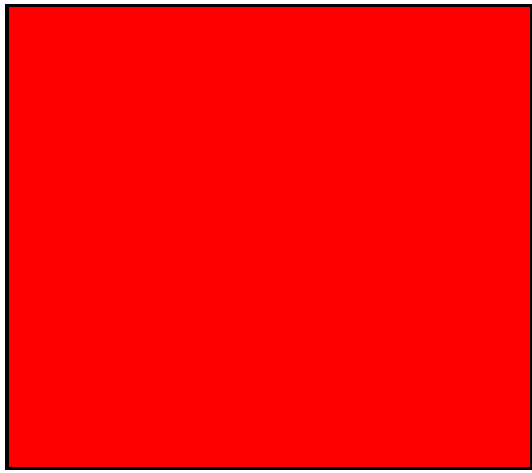
Ones	Tenths	Hundredths
1	6	9



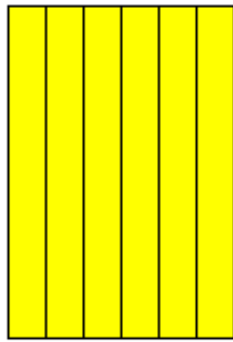
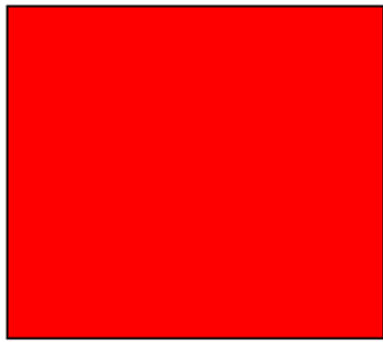
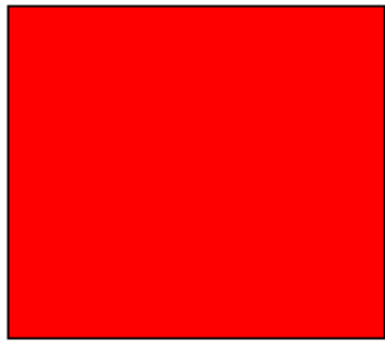
Ones	Tenths	Hundredths
2	3	1



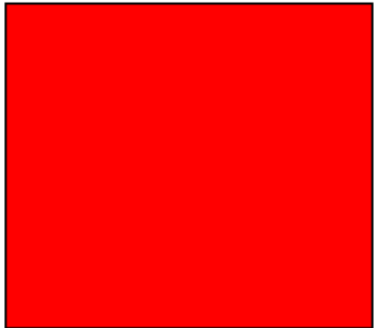
Ones	Tenths	Hundredths
2	1	4



Ones	Tenths	Hundredths
5	3	4



Ones	Tenths	Hundredths
2	6	3



Ones	Tenths	Hundredths
1	2	2

TOTAL =

Ones	Tenths	Hundredths
3	8	5

Ordering decimals

Put these decimals in order of size smallest to biggest

0 • 17

0 • 3

0 • 33

0 • 2

0 • 03

When ordering decimals it is helpful to have all the decimals with the same number of decimal places (pad with zeros to help)

Ordering decimals

Put these decimals in order of size smallest to biggest

0 • 17

0 • 30

0 • 33

0 • 20

0 • 03

When ordering decimals it is helpful to have all the decimals with the same number of decimal places (pad with zeros to help)

0 • 03

0 • 17

0 • 20

0 • 30

0 • 33

Ordering decimals

Put these decimals in order of size smallest to biggest

0.7 0.79 0.007
 0.17 0.07

When ordering decimals it is helpful to have all the decimals with the same number of decimal places (pad with zeros to help)

Ordering decimals

Put these decimals in order of size smallest to biggest

0 • 7**00**

0 • 79**0**

0 • 007

0 • 17**0**

0 • 07**0**

When ordering decimals it is helpful to have all the decimals with the same number of decimal places (pad with zeros to help)

0 • 007

0 • 07**0**

0 • 17**0**

0 • 7**00**

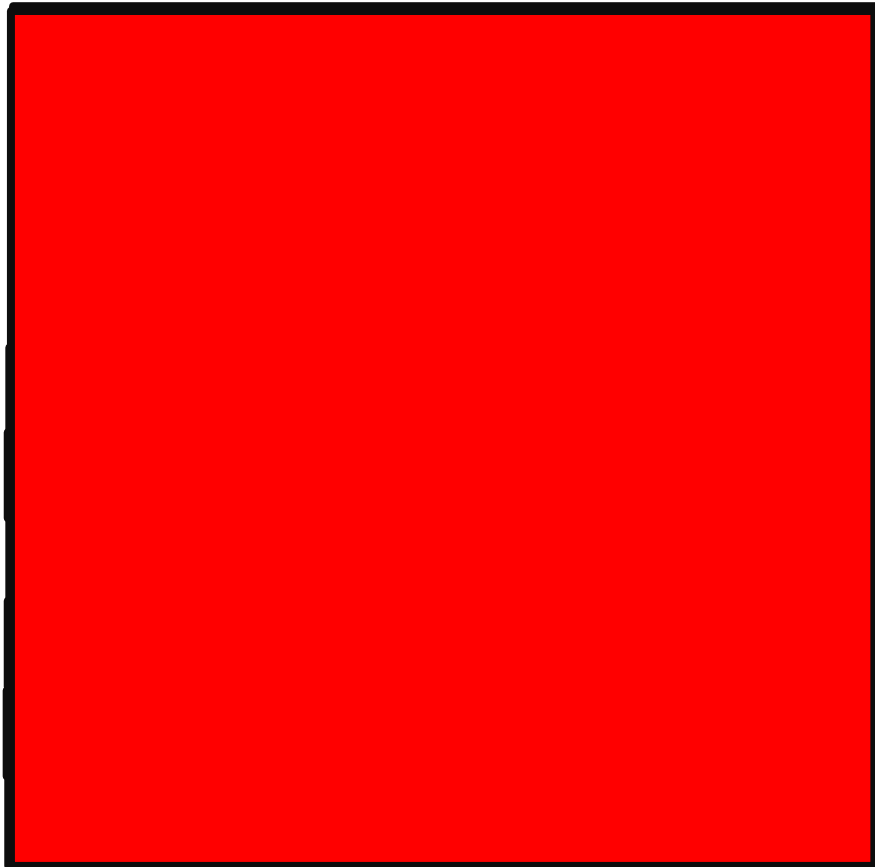
0 • 79**0**

Adding Decimals

$$0 \cdot 9 + 0 \cdot 6$$

Adding Decimals

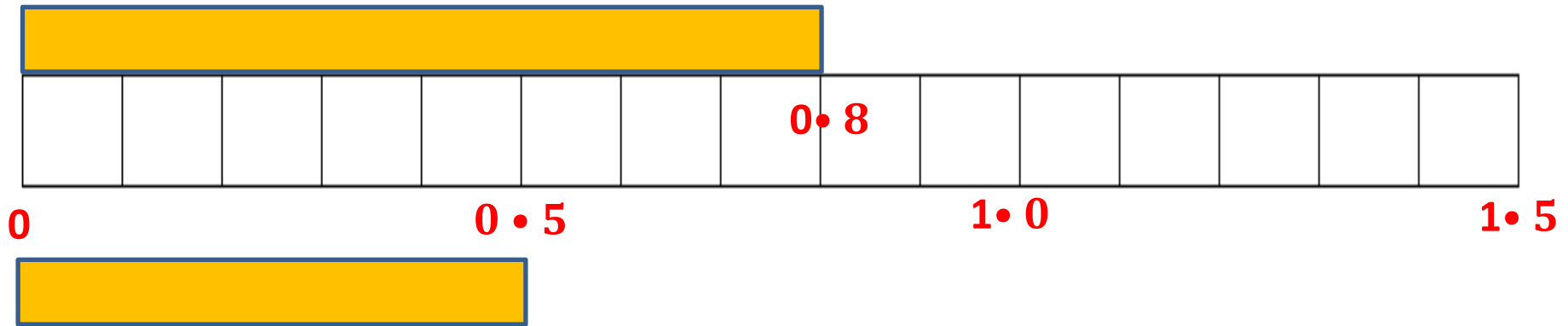
$$0 \cdot 9 + 0 \cdot 6$$



$$1 \cdot 5$$

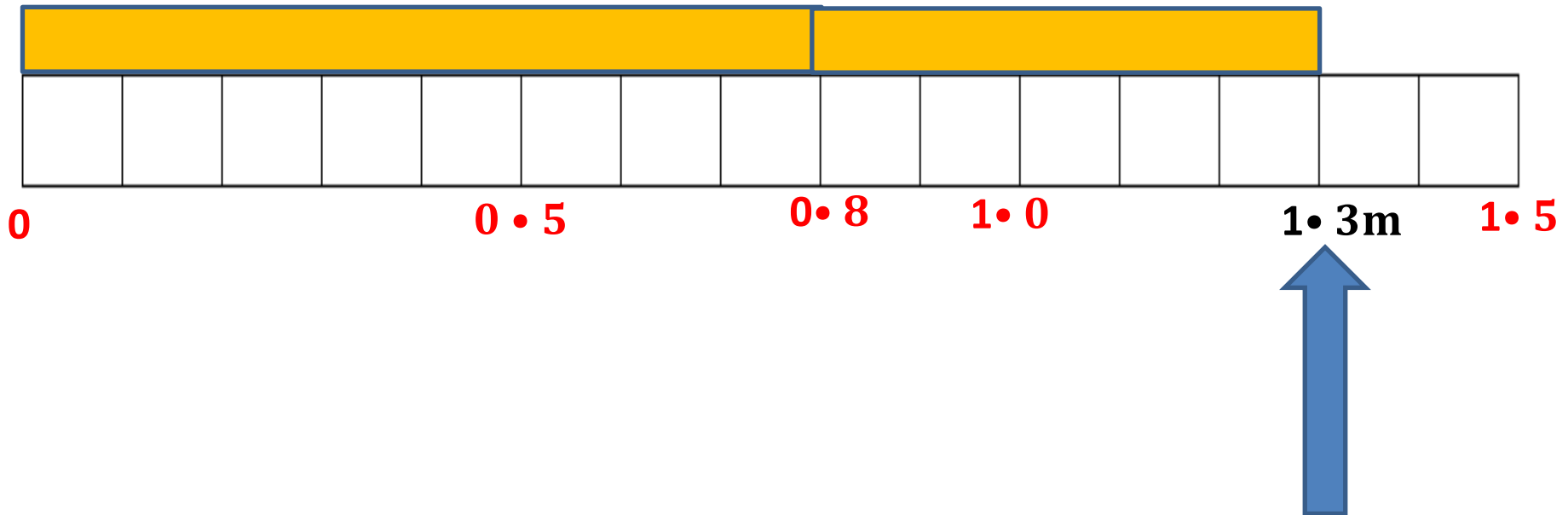
Adding Decimals

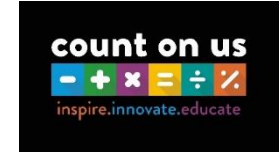
James has a piece of wood that measure 0.8m. He joins another piece that is 0.5 m long. How long is the new piece?



Adding Decimals

James has a piece of wood that measure 0.8m. He joins another piece that is 0.5 m long. How long is the new piece?

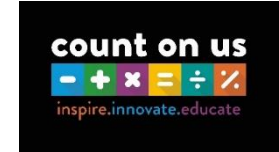




Slides and resources at

www.countonus.org.uk/learning-together/

#npfsmaths



Slides and resources at

www.countonus.org.uk/learning-together/

#npfsmaths

YouTube

Follow us on Twitter and Facebook
@CountOnUsEd



Thank You!

To help us continue to represent parents views, understand yours and your child's experiences of maths and numeracy, and to continue to improve the delivery of these sessions, we would appreciate your feedback.

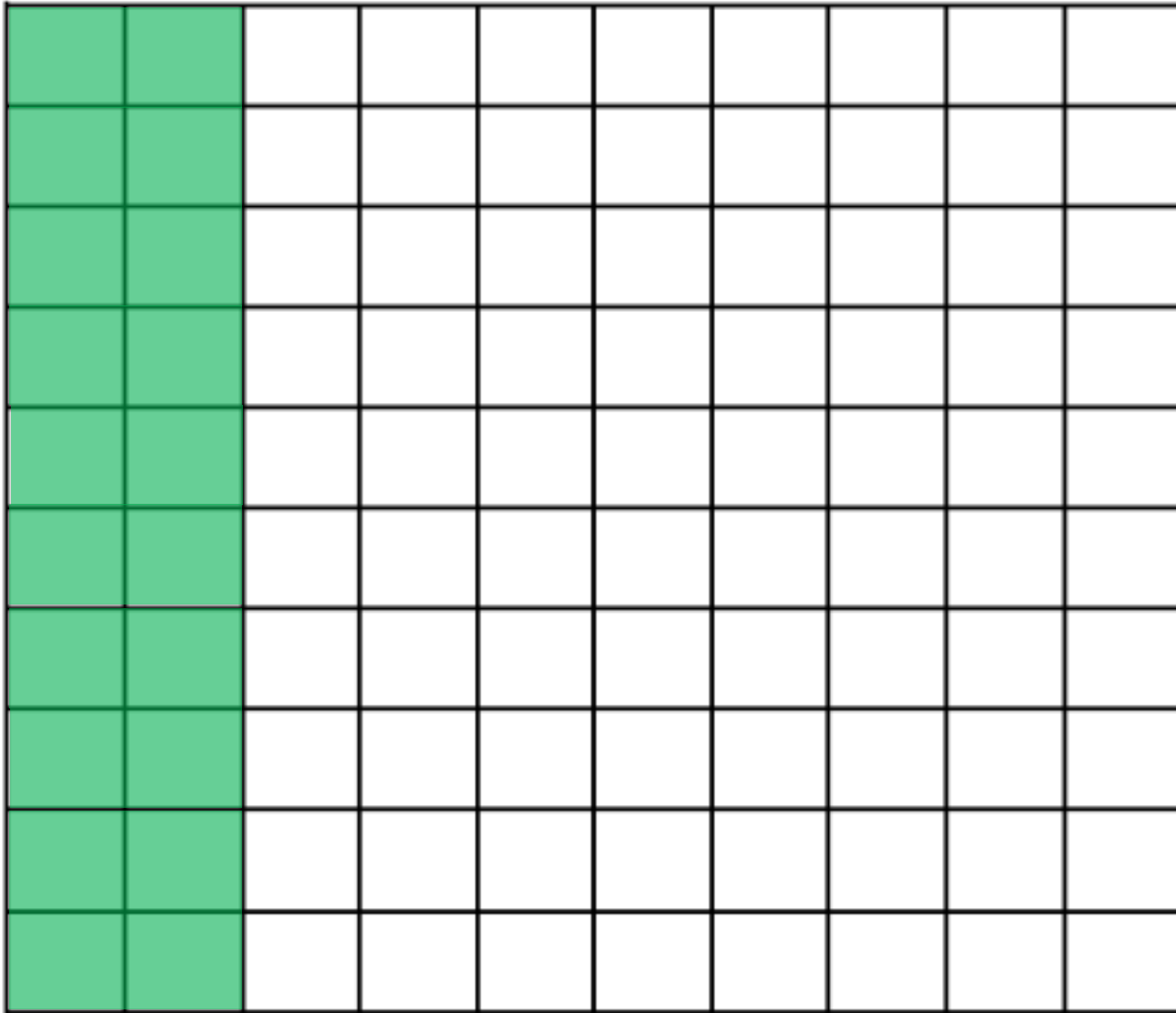
<https://www.surveymonkey.co.uk/r/learningtogetherfeedback>



With support from Education Scotland and Scottish Government, building on themes emerging from the 'Making Maths Count' Group report



Multiplying decimals by 10

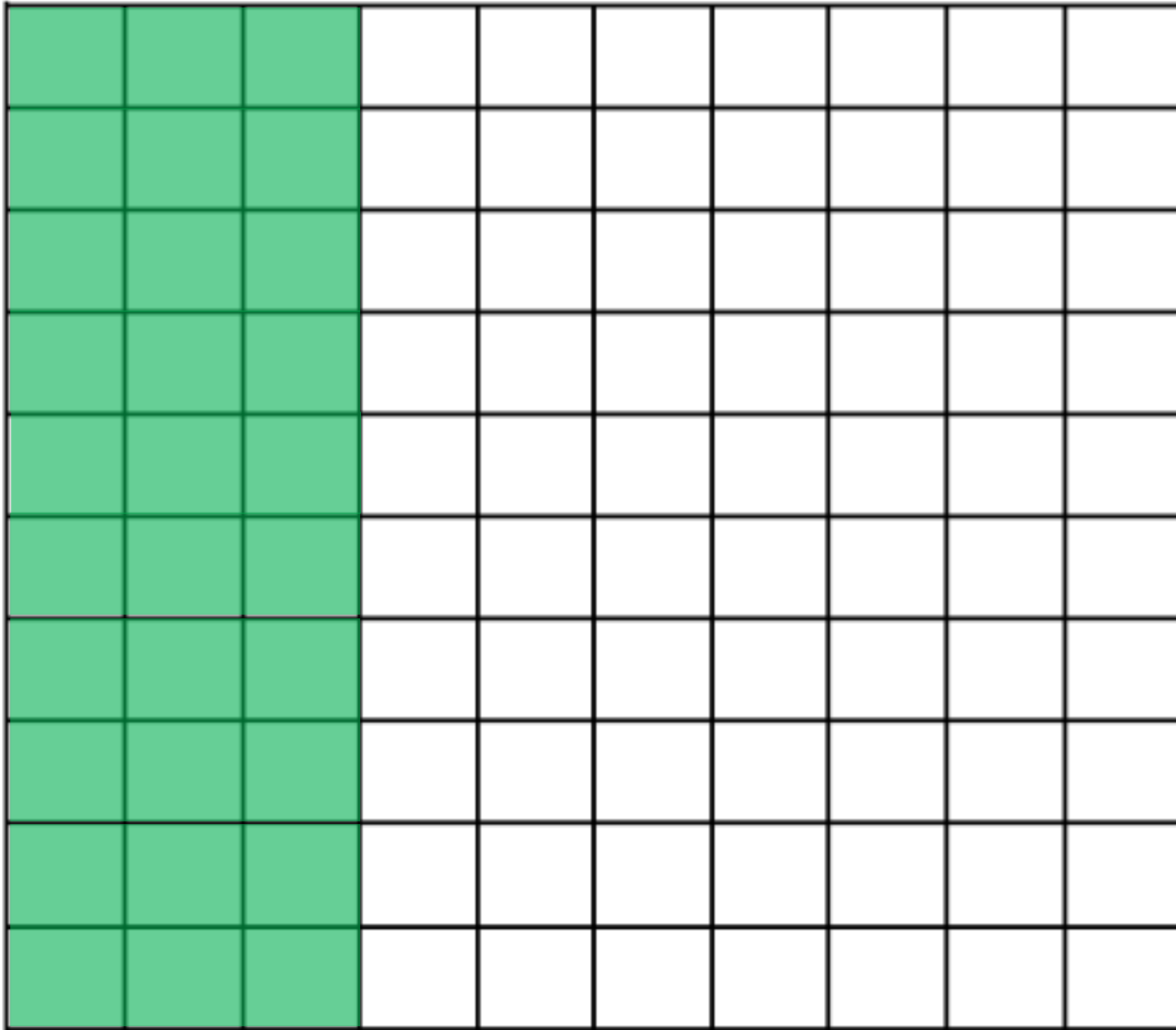


$$0 \cdot 02$$

$$0 \cdot 02 \times 10$$

$$= 0 \cdot 2$$

Multiplying decimals by 10

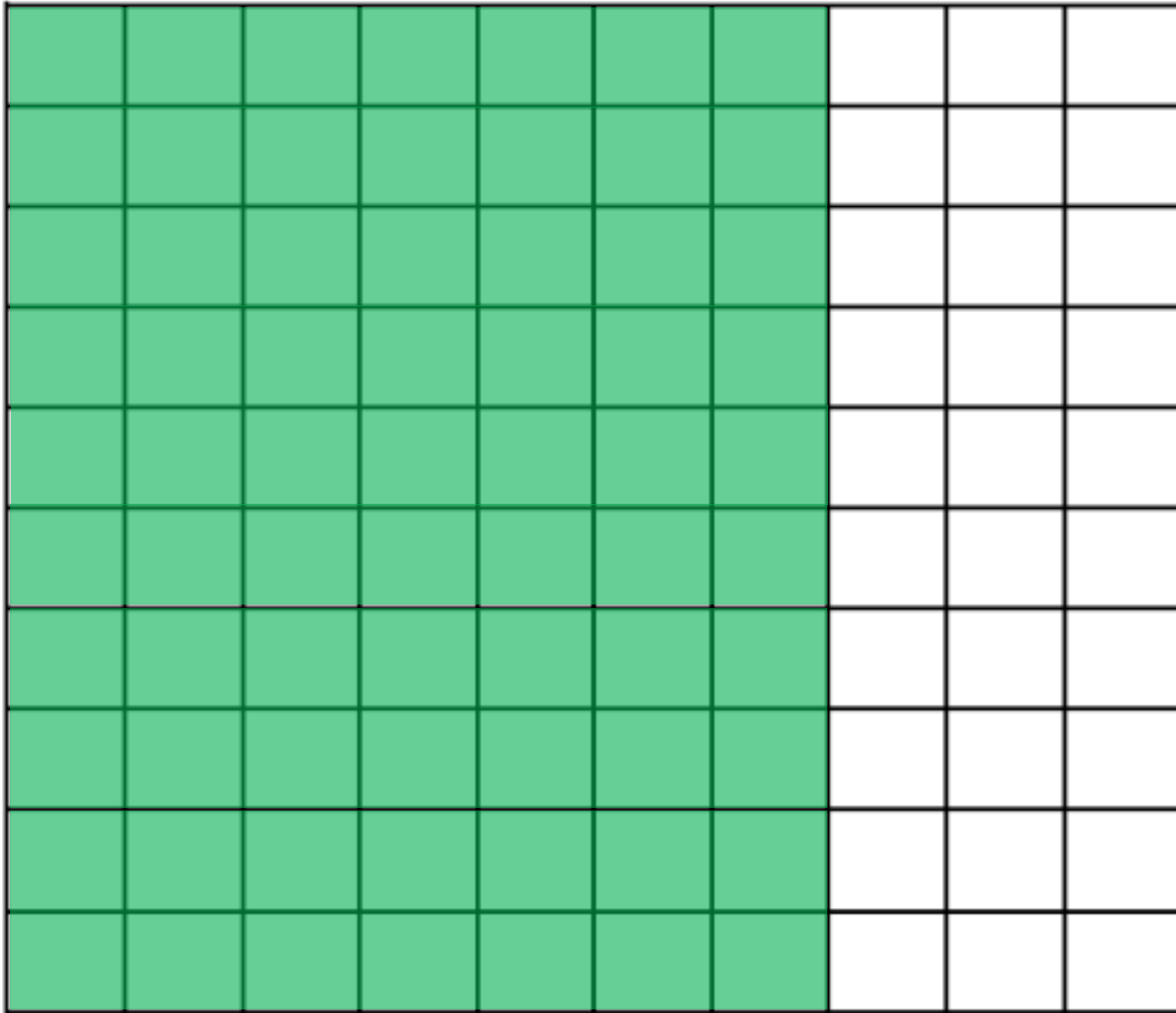


$$0 \cdot 03$$

$$0 \cdot 03 \times 10$$

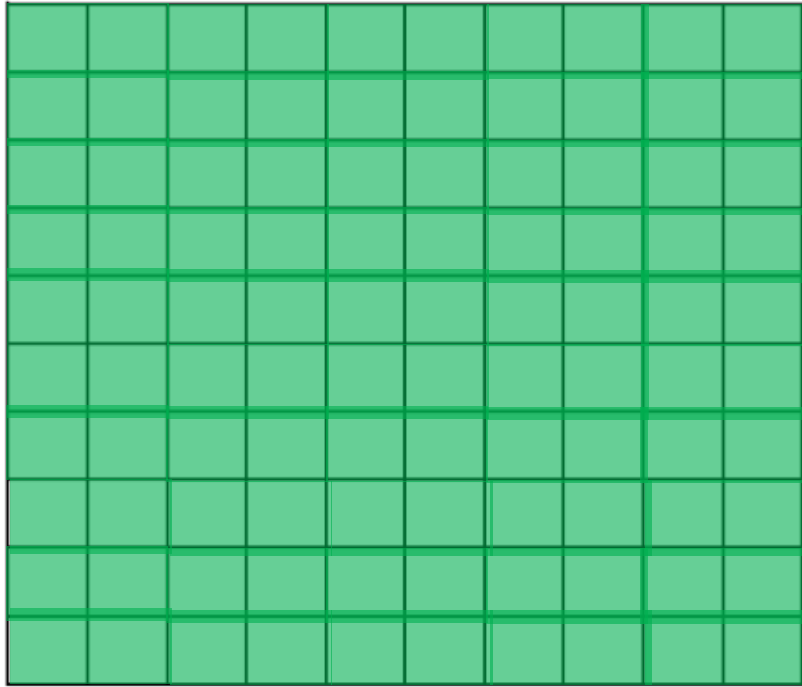
$$= 0 \cdot 3$$

Multiplying decimals by 10

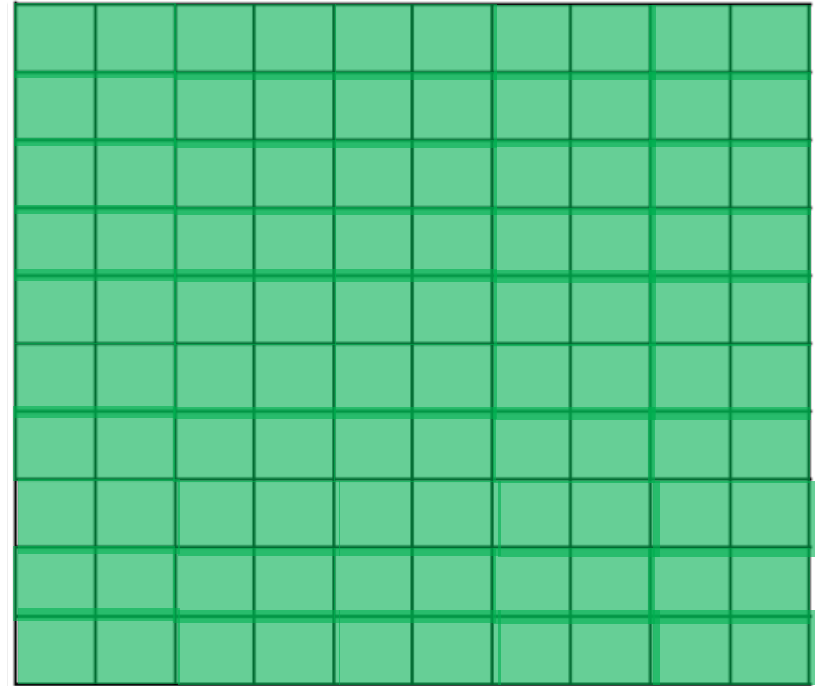


$$0.07 \times 10 = 0.7$$

Multiplying decimals by 100



10 20 30 40 50



60 70 80 90 100

$$\begin{aligned} & 0 \cdot 02 \times 100 \\ & = 2 \cdot 00 \end{aligned}$$

$$0 \cdot 02 \times 100 = 2$$

How would you do

$$90 + 50$$

$$90 + 10 + 40$$

$$140$$

How would you do

$$£0.90 + £0.50$$

$$£0.90 + £0.10 + £0.40$$

$$£1.00 + £0.40$$

$$£1.40$$

Draw 9 dots in the 1st 10 frame

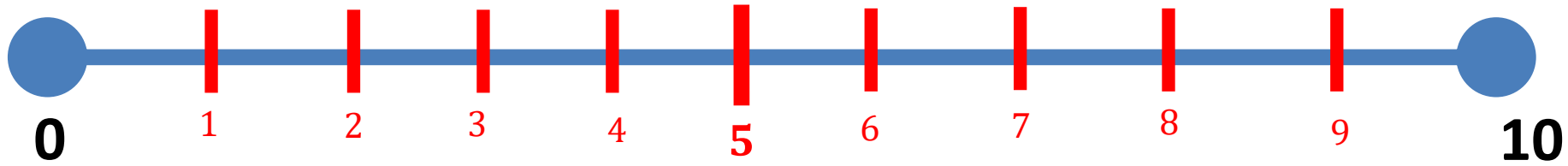
	
	
	
	
	



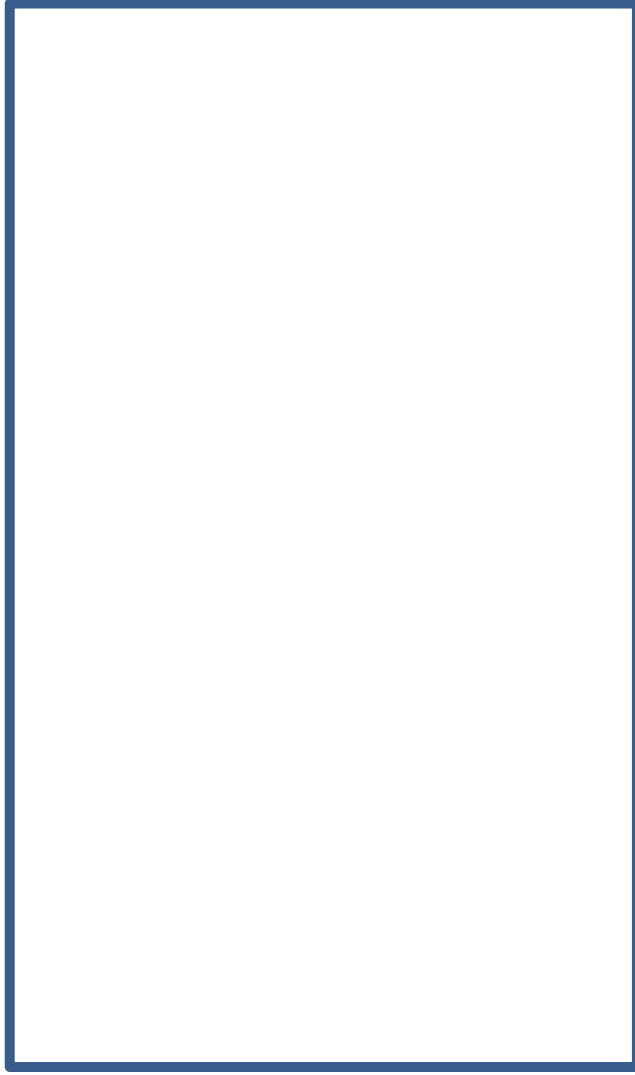
count on us



inspire.innovate.educate




£1



£1





£1

= 10p

£1

10p	60p
20p	70p
30p	80p
40p	90p
50p	100p

£1

£0.10

£1

£0.10	£0.60
£0.20	£0.70
£0.30	£0.80
£0.40	£0.90
£0.50	£1.00

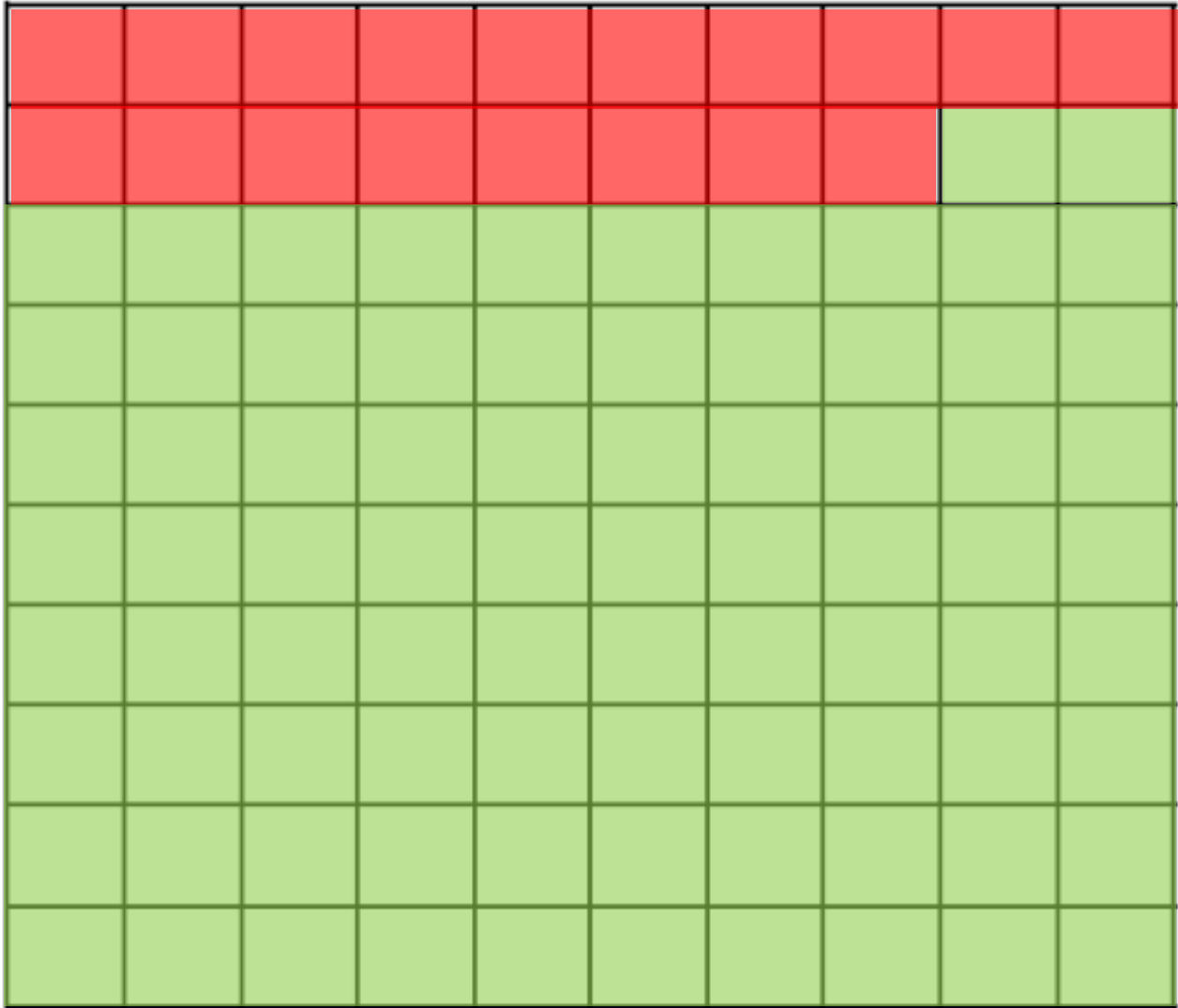
= £1.20



= £2.30



The Big Grid = £1



= £0.18

= £0.82

1p

= £0.01

The Big Grid = £1
