

Lesson 1 - WALT use common factors

LET'S LEARN



Lesson 2 WALT multiply by 10 and 100



Lesson 3 WALT multiply by 10, 100 and 1000



Lesson 4 WALT divide by 10 and 100



Lesson 5 WALT divide by 10, 100 and 1000



WEEK 10 - MATHS

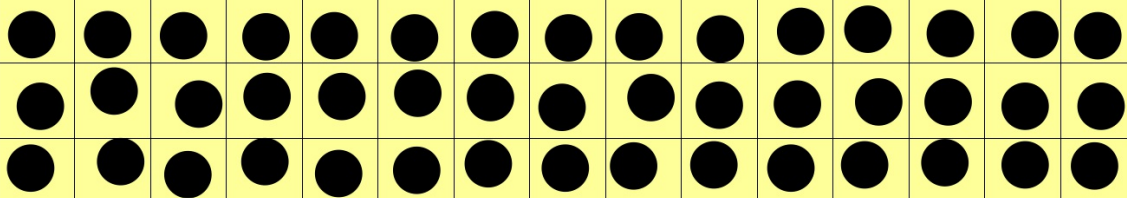


Marking Priority

Best work to indepth
mark

4MD-3 The distributive property of multiplication

Understand and apply the distributive property of multiplication.



How can the distributive law help
us work out how many dots there are?

Day 1

WALT use common factors

Mega Challenge

What are the factors
common to both
15 and 25?

Vocabulary

factors
multiples
common
times tables
lot of

WALT use common factors

What are the factors
common to both
15 and 25?

1, 5

If you correctly answered all of the mega challenge question, move on to the class questions.

If you did not answer all the mega challenge correctly, stay with me to learn more.

Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

Common factors

- 1 Kim is using counters to find factors of 18.

She arranges the counters in one row.



Then she arranges the counters in two rows.



- a) Kim's array shows four numbers that are factors of 18.

Which numbers are they?

- b) What are the two other factors of 18?

- c) Use counters to find the factors of 27.

List the factors of 27

- d) List the common factors of 18 and 27

Why are these numbers common factors?

- 2 Complete the sentences.

a) The factors of 24 are _____

The factors of 36 are _____

The common factors of 24 and 36 are _____

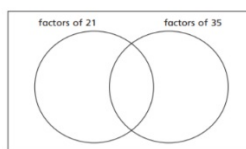
b) The factors of 30 are _____

The factors of 45 are _____

The common factors of 30 and 45 are _____

- 3 a) Write the numbers on the diagram.

1 3 5 7 21 35



- b) What are the common factors of 21 and 35?

- c) How does the Venn diagram help you to list the common factors?

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- 5 Circle the pairs of numbers that have only one common factor.

2 and 6 3 and 8 15 and 12

9 and 11 49 and 21 15 and 22

What do you notice?

- 6



All the factors of 36 are common factors of 36 and 72

Do you agree with Mo? _____

Explain your reasoning.

Why do you think this happens?

- 7 a) List the factors of 60 in order from lowest to highest.

- b) List the factors of 84 in order from smallest to greatest.

- c) What is the highest common factor of 60 and 84?

- 8 Whitney bakes 24 cakes.

Dexter bakes 30 cakes.

Boxes can hold 2, 3, 4, 5, 6 or 10 cakes.

Whitney and Dexter want to share their cakes equally into boxes.

- a) Which boxes could Whitney use?

- b) Which boxes could Dexter use?

- c) Which boxes could they both use?

Compare answers with a partner.

- 9



I am thinking of two numbers between 70 and 80. The common factors are 1, 2, 4 and 8

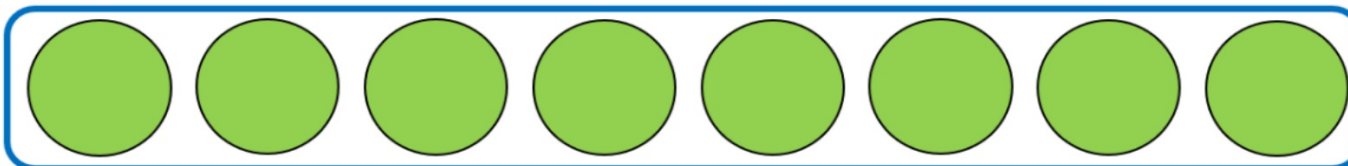
What are the two numbers that Teddy is thinking of?

 and

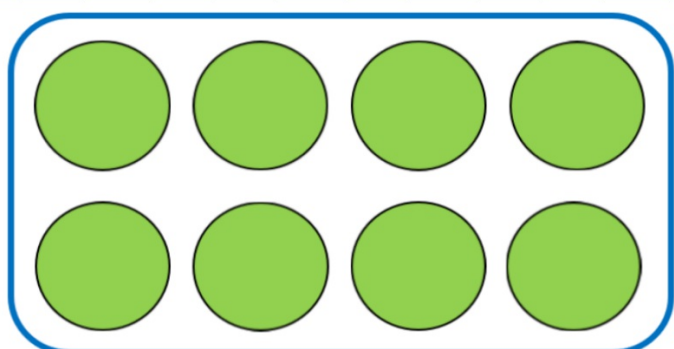
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Nrich



1 row of 8 is equal to 8 and are factors of 8



 (0:44-1:22)

2 rows of 4 are equal to 8 and are factors of 8

I DO

The factors of 8 are:

ANSWERS

Common factors

White
Rose
Maths

- 1 Kim is using counters to find factors of 18

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Then she arranges the counters in two rows.



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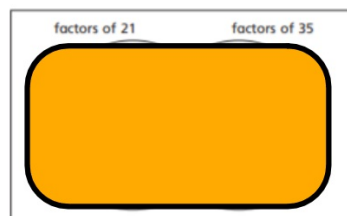
- b) The factors of 30 are

The factors of 45 are

The common factors of 30 and 45 are

- 3 a) Write the numbers on the diagram.

1 3 5 7 21 35



- b) What are the common factors of 21 and 35?

- c) How does the Venn diagram help you to list the common factors?

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ANSWERS

- 4 List the common factors of each pair of numbers.

a)

15 20

b)

9 10

- 5 Circle the pairs of numbers that have only one common factor.

What do you notice?

6



All the factors of 36 are common factors of 36 and 72

Do you agree with Mo?

Explain your reasoning.

Why do you think this happens?

- 7 a) List the factors of 60 in order from lowest to highest.

- b) List the factors of 84 in order from smallest to greatest.

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12

- 8 Whitney bakes 24 cakes.

Dexter bakes 30 cakes.

Boxes can hold 2, 3, 4, 5, 6 or 10 cakes.

Whitney and Dexter want to share their cakes equally into boxes.



- a) Which boxes could Whitney use?

- b) Which boxes could Dexter use?

- c) Which boxes could they both use?

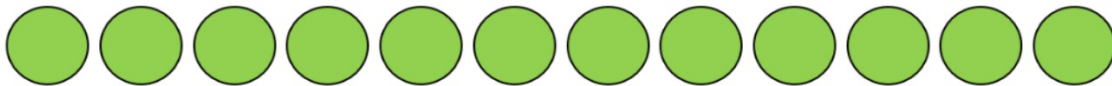
What are the two numbers that Teddy is thinking of?

9



I am thinking of two numbers between 70 and 80. The common factors are 1, 2, 4 and 8

What are the two numbers that Teddy is thinking of?



Have a think



The factors of 12 are

The factors of 8 are

, and are factors of 12 and 8

, and are factors of 12 and 8



Whitney and Dexter both have dark hair.



They have dark hair in

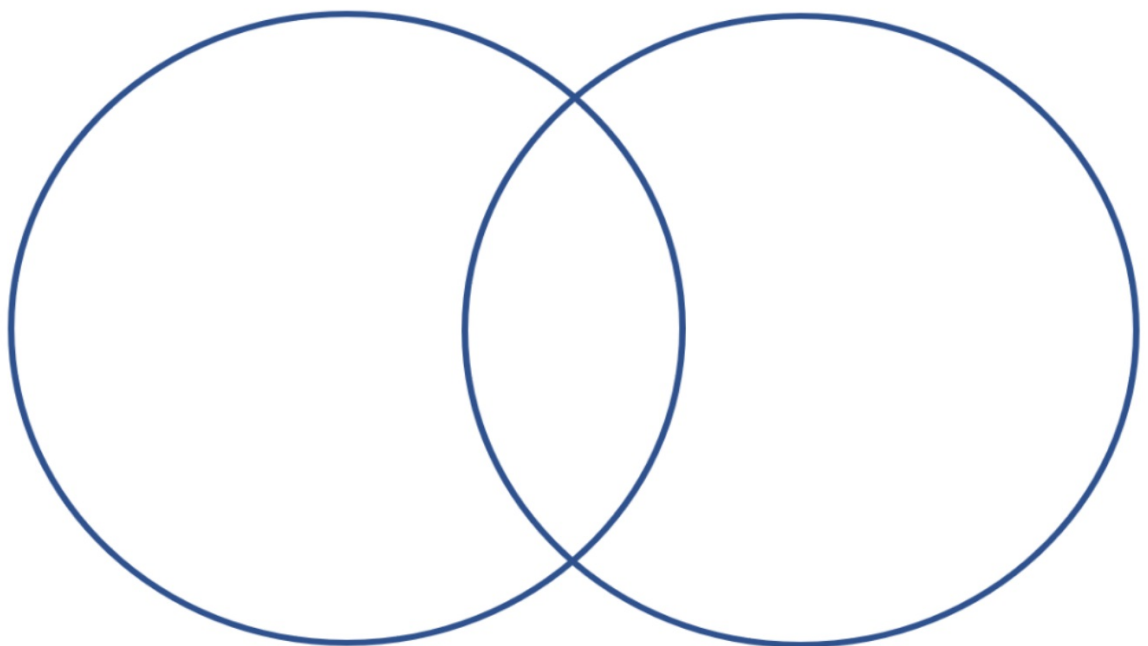
WE DO



(1:25 - 2:21)

Factors of 15

Factors of 25



What are the common factors of 15 and 25?



(2:25-3:55)

YOU DO

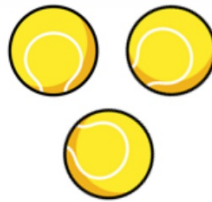
Plenary



(5:03 - 7:37)

Rosie has 14 tennis balls.

Amir has 24 tennis balls.



Ball containers can hold 2, 4, 8 or 10 balls.

Each child wants to buy containers all of the
same size and to have only full containers.

Have a think



1) Which container size could both Amir and
Rosie use?

2) Which container size could neither Amir nor
Rosie use?

OR Nrich could feed back!

4MD-1 Multiplying and dividing by 10 and 100

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
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

$80 \times 10 = 800$ $80 \div 10 = 8$

Figure 118: using the Gattegno chart to multiply and divide by 10

Explore how
the chart helps
us $\times 10, 100, 1000$

Language focus

"23, made 100 times the size, is 2,300."

"23 multiplied by 100 is equal to 2,300."

"First we had 23 ones. Now we have 23 hundreds."

"1,450 is 10 times the size of 145."

"1,450 divided by 10 is equal to 145."

"First we had 145 tens. Now we have 145 ones."

Lesson 2

WALT multiply by 10 and 100

Mega Challenge

1) = 10 \times 44

2) 100 \times = 5100

3) 6 \times 6 \times 10 =

4) \times 13 = 1300

Vocabulary

multiply

times

lots of

ten

hundred

thousand

★ commutative 

WALT multiply by 10 and 100

1) = 10 \times 44

2) 100 \times = 5100

3) 6 \times 6 \times 10 =

4) \times 13 = 1300

If you correctly answered all of the mega challenge question, move on to the class questions.

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Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

Multiply by 100

- 1 Complete the calculation shown in base 10



$$3 \times 1 \text{ hundred} = \boxed{} \text{ hundreds}$$

$$3 \times 100 = \boxed{}$$

- 2 Complete the number sentences.

a) $2 \times 100 = \boxed{}$ d) $5 \times 100 = \boxed{}$

b) $4 \times 100 = \boxed{}$ e) $100 \times 10 = \boxed{}$

c) $100 \times 8 = \boxed{}$ f) $\boxed{} = 20 \times 100$

- 3 There are 7 boxes of 100 crayons.



Circle the calculations that work out the total number of crayons.

$100 + 7$ 100×7 $7 + 100$ 7×100

- 4 Match the images to the calculations. Complete the calculations.



$$9 \times 100 = \boxed{}$$

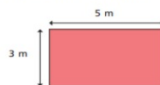


$$6 \times 100 = \boxed{}$$



$$12 \times 100 = \boxed{}$$

- 5 Calculate the perimeter of the rectangle.



Give your answer in centimetres.

The perimeter of the rectangle is $\boxed{}$ cm

- 6 Write $<$, $>$ or $=$ to compare the statements.

a) 45×100 \bigcirc 45×10

b) 36×100 \bigcirc 100×36

c) 100×27 \bigcirc 26×100

d) 31×100 \bigcirc $31 \times 10 \times 10$

e) 30×10 \bigcirc 3×100

- 7 Amir thinks of a 2-digit even number.

He multiplies it by 100

His answer is greater than 3,450 but less than 3,750

Write the number that Amir is thinking of.

$\boxed{}$

- 8 Four children are making numbers using base 10. The table shows how many of each piece they use.

	Number of 100s	Number of 10s
Eva	17	0
Ron	15	8
Dexter	16	15
Whitney		

- a) What number has Eva made?

$\boxed{}$

- b) Who has made the biggest number?

$\boxed{}$

- c) Whitney has made the same number as Eva.

She used 100s and 10s.

What pieces could Whitney have used?

Write your answer in the table.

Are there any other answers? Talk about it with a partner.

Nrich

Multiply Multiples 1

In this calculation, each square represents a missing digit:

$$\boxed{}0 \times \boxed{} \boxed{} = \boxed{}0 \times \boxed{} \boxed{}$$

One possible solution is:

$$10 \times 2 = 20 \times 1$$

Can you work out some different ways to balance the equation?

ANSWERS

Multiply by 100



- 1 Complete the calculation shown in base 10



$$3 \times 1 \text{ hundred} = \boxed{} \text{ hundreds}$$

$$3 \times 100 = \boxed{}$$

- 2 Complete the number sentences.

$$\text{a) } 2 \times 100 = \boxed{}$$

$$\text{d) } 5 \times 100 = \boxed{}$$

$$\text{b) } 4 \times 100 = \boxed{}$$

$$\text{e) } 100 \times 10 = \boxed{}$$

$$\text{c) } 100 \times 8 = \boxed{}$$

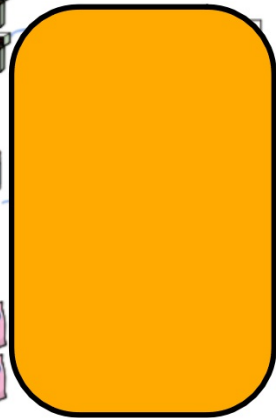
$$\text{f) } \boxed{} = 20 \times 100$$

- 3 There are 7 boxes of 100 crayons.



Circle the calculations that work out the total number of crayons.

- 4 Match the images to the calculations.
Complete the calculations.



- 5 Complete the calculations.

$$\text{a) } 32 \times 100 = \boxed{}$$

$$\text{d) } 5 \times 7 \times 100 = \boxed{}$$

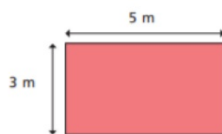
$$\text{b) } 29 \times 100 = \boxed{}$$

$$\text{e) } \boxed{} \times 100 = 6,500$$

$$\text{c) } 100 \times 72 = \boxed{}$$

$$\text{f) } 100 \times \boxed{} = 3,000$$

- 6 Calculate the perimeter of the rectangle.



Give your answer in centimetres.

The perimeter of the rectangle cm

- 7 Write $<$, $>$ or $=$ to compare the statements.

- a) 45×100 45×10
b) 36×100 100×36
c) 100×26 26×100
d) 31×100 $31 \times 10 \times 10$
e) 30×10 3×100



- 8 Amir thinks of a 2-digit even number.
He multiplies it by 100
His answer is greater than 3,450 but less than 3,750
Write the number that Amir is thinking of.

- 9 Four children are making numbers using base 10
The table shows how many of each piece they use.

	Number of 100s	Number of 10s
Eva	17	0
Ron	15	8
Dexter	16	15
Whitney	<input type="text"/>	<input type="text"/>

Various answers

- a) What number has Eva made?

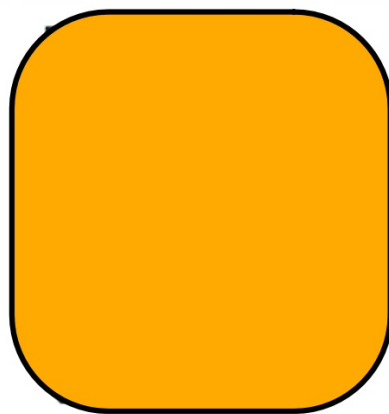
b) Who has made the biggest number?

c) Whitney has made the same number as Eva.
She used 100s and 10s.
What pieces could Whitney have used?
Write your answer in the table.
Are there any other answers? Talk about it with a partner.





1 ten



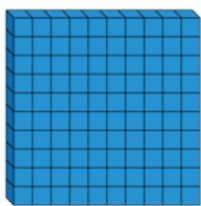
$$4 \times 1 \text{ ten} =$$



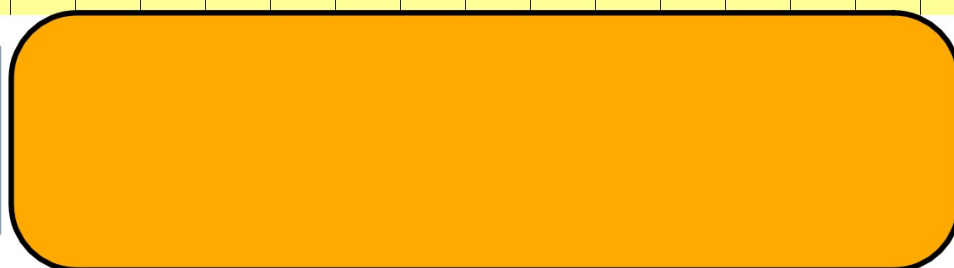
$$4 \times 10 =$$



I DO



1 hundred



5 times

$$5 \times 1 \text{ hundred} = \boxed{}$$

★ $5 \times 100 = \boxed{}$ *This is true because*

$100 \times 5 = \boxed{}$ *multiplication is commutative*

I DO

🌐 (0:45 -1:44)

WE DO

$$6 \times 10 \times 9 =$$

$$6 \times 100 \times 9 =$$

How can we use the commutative law to help find the answers?

$$\boxed{6} \times 10 \boxed{} \times \boxed{9} =$$

$$6 \times 9 \times 10 \boxed{} =$$



$$54 \times 10 \boxed{} = \boxed{}$$



(1:45 -2:26)

YOU DO

1) $5 \times 10 =$

2) $45 \times 10 =$

3) $5 \times 100 =$

4) $45 \times 100 =$

5) $26 \times$ $= 260$

6) $\times 10 = 2600$

7) $13 \times$ $= 1300$

8) $13 \times$ $= 130$

9) $49 \times 100 =$

10) $10 \times 100 =$

True or False?

Multiply by 100

Try

$$42 \times 100 > 420 \times 10$$



The

REASONING

630 x 260 iped

4MD-1 Multiplying and dividing by 10 and 100

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
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

$\times 10$
 $\div 10$

Use the chart to explain these equations.

$$13 \times 10 = 130$$

$$130 \div 10 = 13$$

$$130 \times 10 = 1,300$$

$$1,300 \div 10 = 130$$

$$13 \times 100 = 1,300$$

$$1,300 \div 100 = 13$$

Useful phrases: 23, made 100 times the size is 2300. 23, multiplied by 100 is equal to 2300. First we had 23 ones. Now we have 23 hundreds.

1450 is 10 times the size of 145. 1450 divided by 10 is equal to 145. First we had 145 tens. Now we have 145 ones.

Lesson 3

WALT multiply by 10, 100 and 1000

Mega Challenge

- 1) $62 \times 100 =$
- 2) $461 \times 10 =$
- 3) $6 \times 10 \times$ $= 600$
- 4) $400 \times$ $= 40000$
- 5) $70 \times 10 \times$ $= 7000$

Vocabulary

multiply
Place value
digit
commutative law
product
factors
multiples
tens
hundreds
thousands
ten thousands
column

WALT multiply by 10, 100 and 1000

$$1) 62 \times 100 = 6200$$

$$2) 461 \times 10 = 4610$$

$$3) 6 \times 10 \times 10 = 600$$

$$4) 400 \times 100 = 40000$$

$$5) 70 \times 10 \times 100 = 7000$$

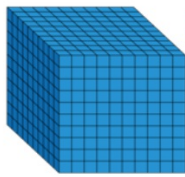
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Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

WALT multiply by 10, 100 and 1000



1 thousand

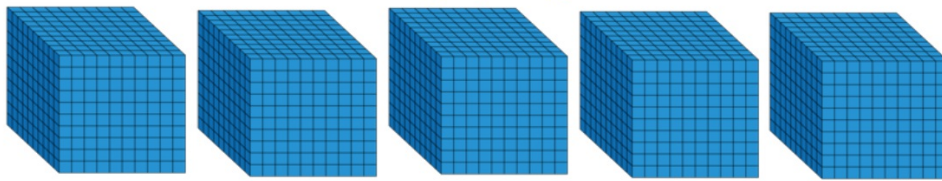
$$6 \times 1 \text{ thousand} =$$

$$6 \times 1,000 =$$

$$1,000 \times 6 =$$

I DO

WALT multiply by 10, 100 and 1000



1 thousand



$$5 \times 1 \text{ thousand} = \text{[orange box]}$$

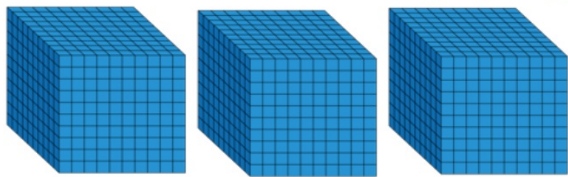
$$\text{[orange box]} \times 1,000 = \text{[orange box]}$$

$$1,000 \times \text{[orange box]} = \text{[orange box]}$$

WE DO

WALT multiply by 10, 100 and 1000

YOU DO



1 thousand



$$3 \times \text{[orange box]} = 3 \text{ [orange box]}$$

$$\text{[orange box]} \times 1,000 = \text{[orange box]}$$



Plenary Part 1



My number is:

What is happening
to my number,
shown by each
place value
chart?




Th	H	T	O
		7	8

Th	H	T	O
	7	8	0

Th	H	T	O
7	8	0	0

TTh	Th	H	T	O
7	8	0	0	0

Plenary
Part 2

- 1) To multiply a number by 10 each digit moves  to the left on a place value grid.
- 2) To multiply a number by 100 each digit moves  to the left on a place value grid.
- 3) To multiply a number by $1,000$ each digit moves  to the left on a place value grid.

4MD–1 Multiplying and dividing by 10 and 100

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

Lesson 4

WALT divide by 10 and 100

Mega Challenge

1) $500 \div 10 = 50$

2) $500 \div 100 = 5$

3) $6000 \div 10 = 600$

4) $6000 \div 100 = 60$

Vocabulary

WALT divide by 10 and 100

$$1) 500 \div 10 = 50$$

$$2) 500 \div 100 = 5$$

$$3) 6000 \div 10 = 600$$

$$4) 6000 \div 100 = 60$$

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Class questions - see next slide!

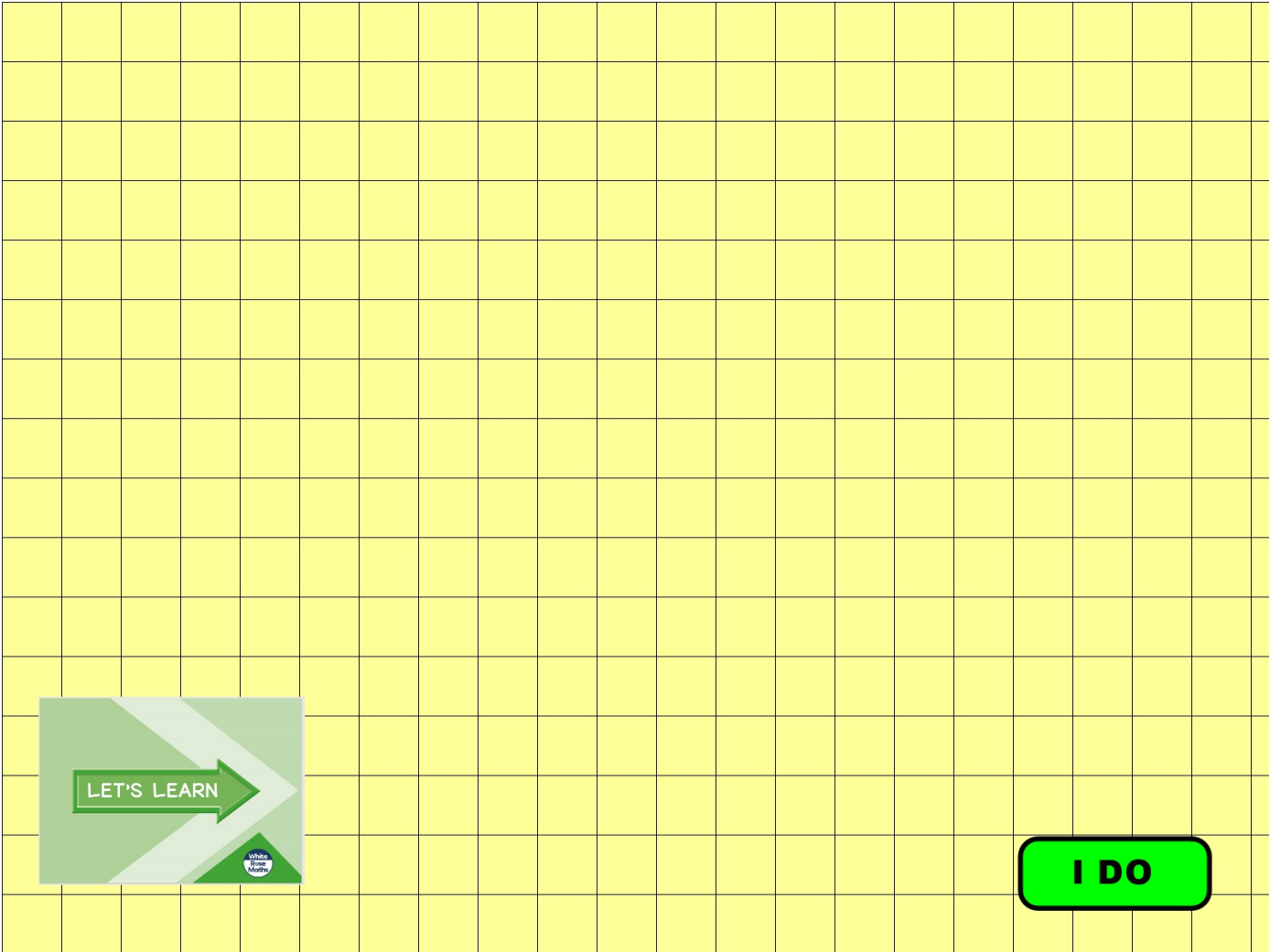
REASON AND PEER MARK FOR EVERY QUESTION!

WALT divide by 10 and 100

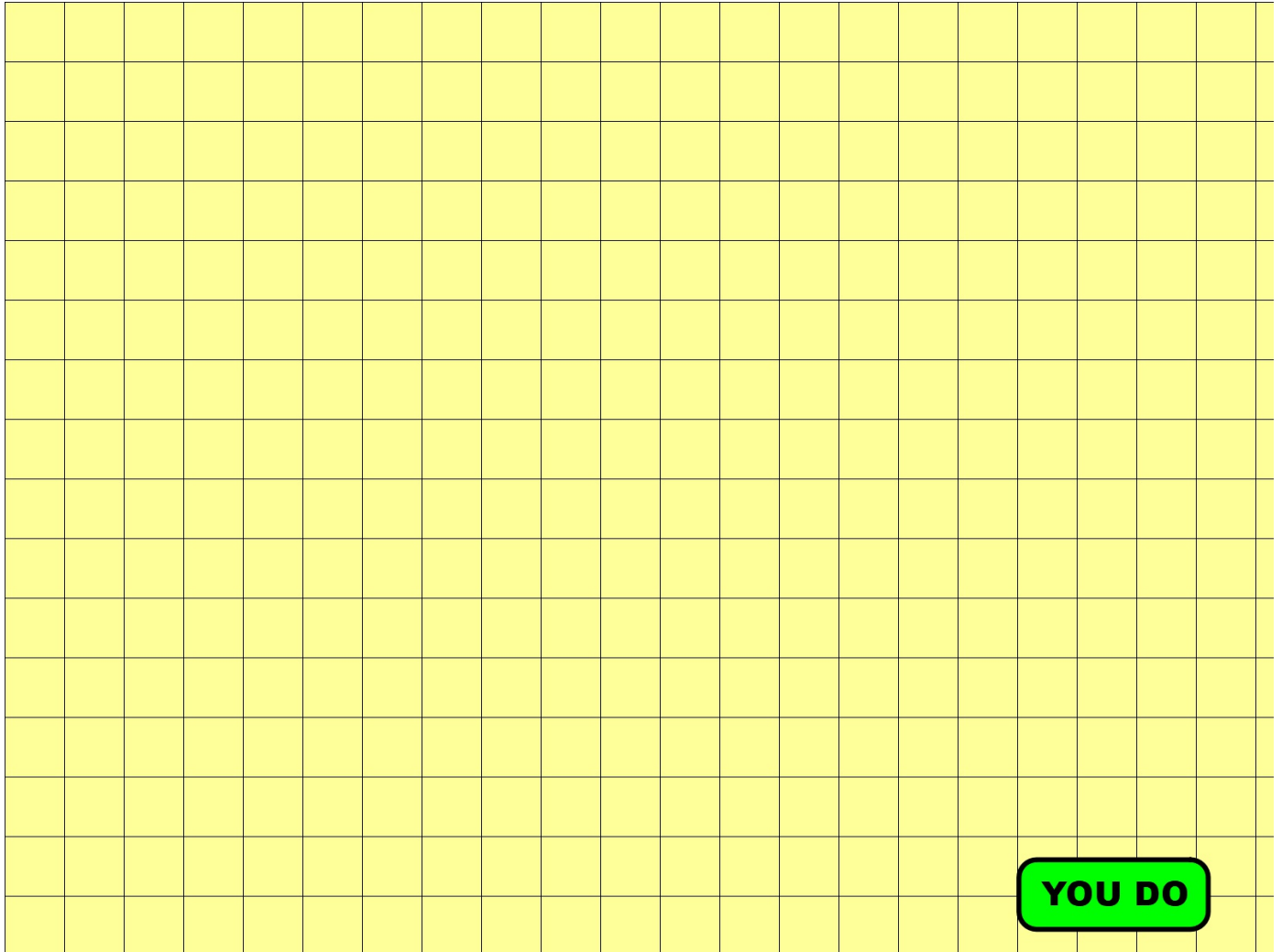
Do it!

Reason it!

Peer Mark it!







ANSWERS

Plenary

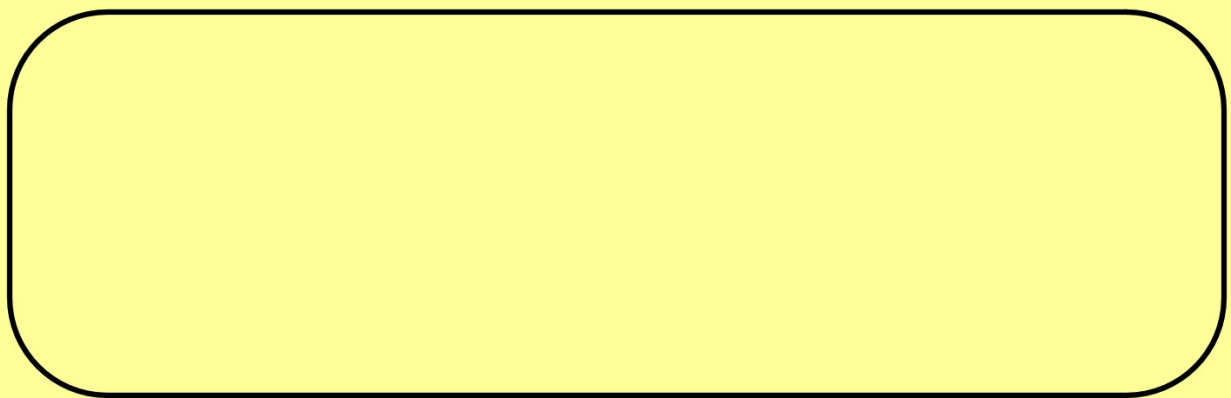
4MD–1 Multiplying and dividing by 10 and 100

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

Lesson 5

Mega Challenge

Vocabulary



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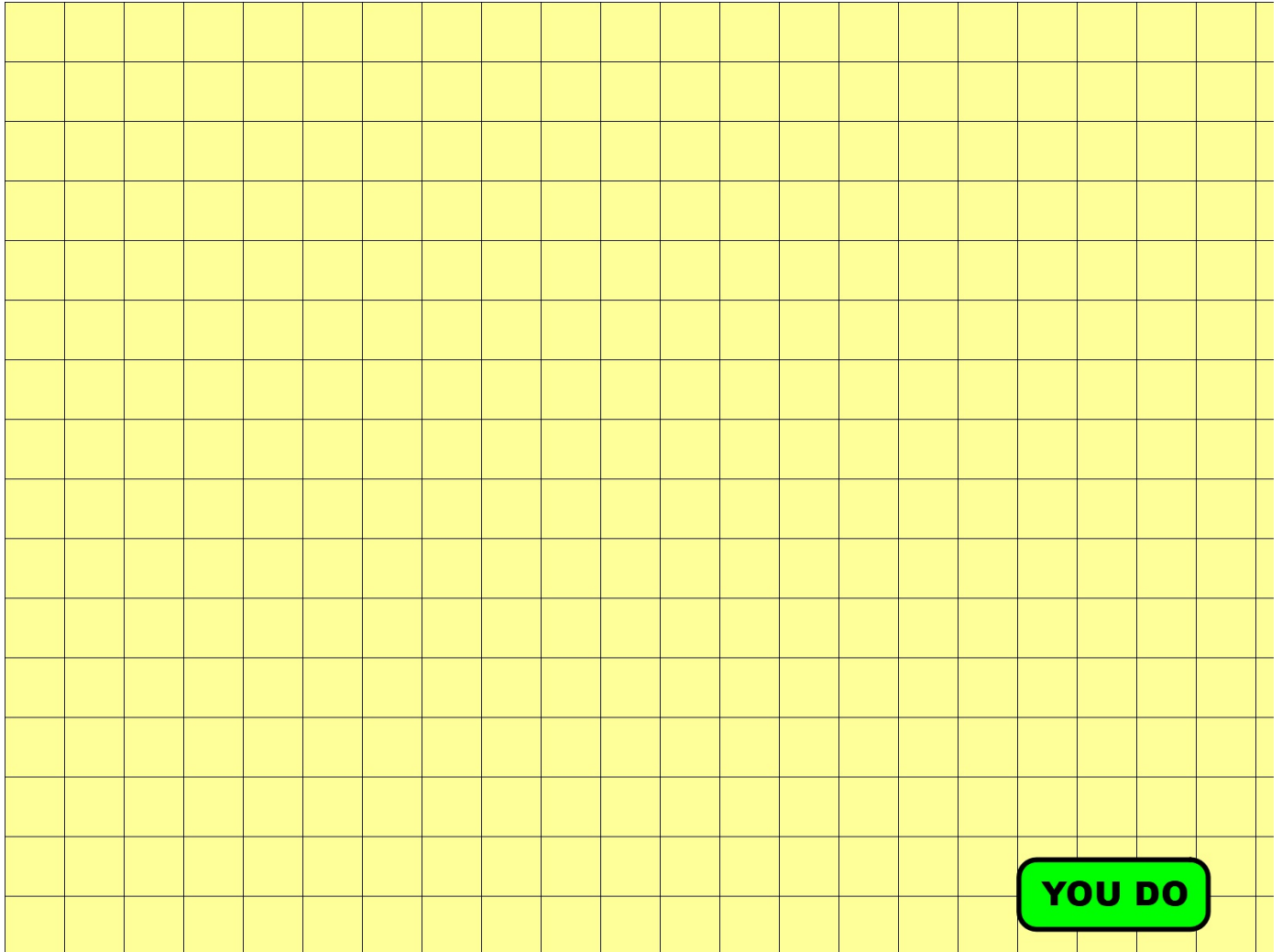
REASON AND PEER MARK FOR EVERY QUESTION!

Do it!

Reason it!

Peer Mark it!

A large yellow grid with a black border. At the bottom left, there is a green rounded rectangle with a black border containing the text "I DO" in black. At the bottom right, there is a green rounded rectangle with a black border containing the text "WE DO" in black. The grid is composed of 20 columns and 20 rows.



ANSWERS

Plenary

[illegible]

