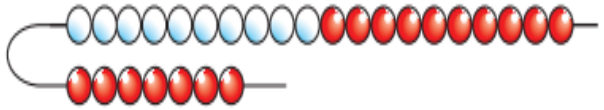
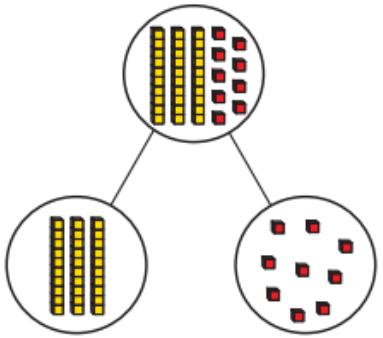
Maths – Place Value

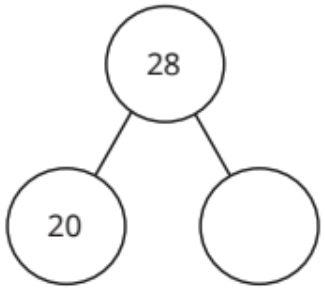
YEAR 3
Term 1

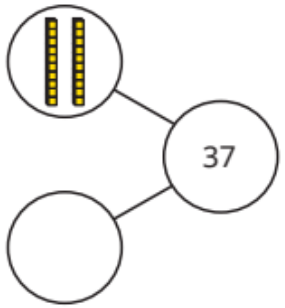
Small Steps:

1. Represent numbers to 100.
2. Partition numbers to 100.
3. Number line to 100.
4. Hundreds.
5. Represent numbers to 1000.
6. Partition numbers to 1000.
7. Flexible partitioning of numbers to 1000.
8. Hundreds, tens and ones.
9. Find 1, 10 or 100 more or less. +
10. Number line to 1000.
11. Estimate on a number line to 1000.
12. Compare numbers to 1000.
13. Order numbers to 1000.
14. Count in 50's.









Key Questions:

- How have the beads been grouped? How does this help you to count?
- Is it quicker to count in tens or ones?
- How many tens do you have? How many ones do you have?
- How many ones make 1 ten?
- How else can you show this number.
- How can you use the whole and this part to work out the missing part?
- How can you use base 10 to draw a picture to help you partition?
- How can you complete the part-whole model in a different way?

Key Vocabulary:

tens
ones
grouped
count
represents
digit
partitioning
part-whole
addition
sentence
value

Stem Sentences:

- There are _____ tens and _____ ones. The number is _____.
- The _____ represents _____ groups of ten.
- The _____ represents _____ extra ones.
- There are _____ tens and _____ ones. The number is _____.
- The whole is _____. One part is _____. The other part is _____.
- _____ tens and _____ ones is the same as _____ tens and _____ ones.

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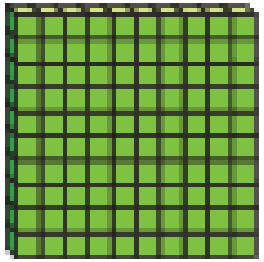

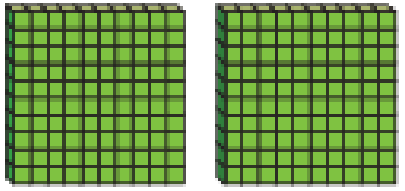

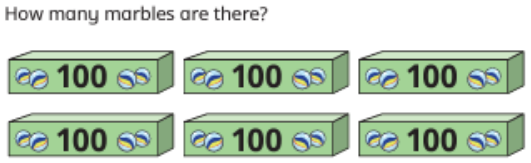

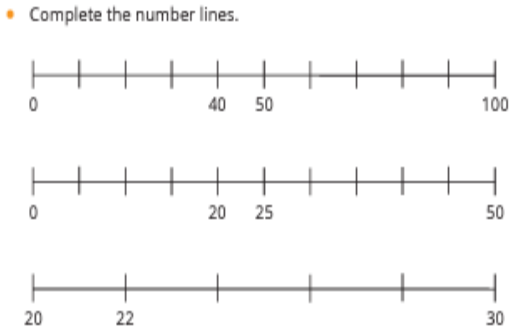

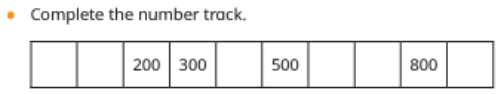

Key Questions:

- What is the start point? What is the end point?
- How many intervals are there? What is each interval worth?
- What is the number line counting up in? How do you know?
- Where would ____ be on the number line? How do you know?
- Why can you only estimate the position of _____ on the number line?
- When counting in 10's, what number comes after 90?
- If you count from zero in 100's, will you say 40?
- When counting in 100's, what comes after 500? How do you know?
- How many tens are there in 100?
- If there are 10 tens in 100, how many tens are there in 200?
- How does the base 10 show that 100 is 10 times the size of 10?

Stem Sentences:

- That start point is _____ and the end point is _____.
- There are ____ intervals on the number line.
- Each interval is worth_____.
- The number line is counting up in_____.
- There are _____ tens in 100 and _____ hundreds in _____. This means there are _____ tens in_____.

Key Vocabulary:

number line
estimate
position
division
interval
hundreds
tens
equivalent
same
times the size
multiples
thousand
3-digit
multiple
base 10

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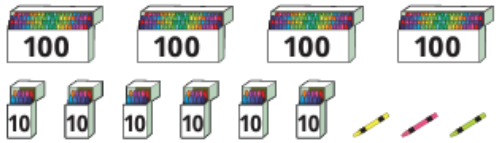

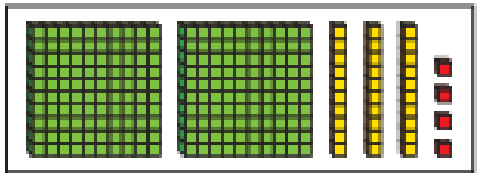

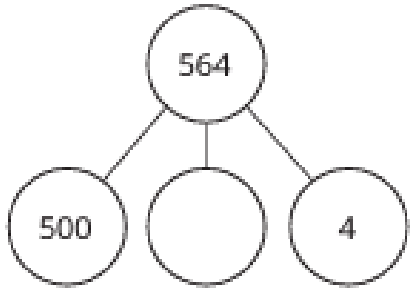

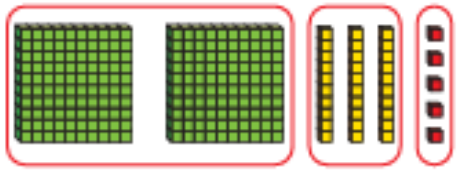

Complete the number sentences.

- 847 = 800 + 40 + _____
- 615 = _____ + 10 + 5
- 324 = 300 + _____ + _____

Key Questions:

- What is the value of each of the base 10 pieces?
- How many hundreds are in the number? How many tens are in the number? How many ones are in the number?
- Why do you need to make an exchange when you have 12 tens?
- Does the order in which you build the number matter?
- How else can you represent the number?
- How many hundreds/tens/ones are there in 465?
- How do you write a number that has zero tens?
- How do you write a number that has zero ones?
- What number is equal to 300 + 70 + 9?
- What is the value of the missing part? How do you know?
- What is the value of the digit 6 in 465?
- Can you partition the number in more than one way?
- Explain why 300 = 200 + 100.
- Is 200 + 100 + 50 + 16 equal to 300 + 60 + 6? How do you know?
- What number is made of 3 hundreds and 15 tens?

Stem Sentences:

- There are _____ hundreds, _____ tens and _____ ones.
- The number is _____.
- _____ is made up of _____ hundreds, _____ tens and _____ ones.
- There are ___ hundreds, ____tens and ____ones. The number is ____.
- _____ has _____ hundreds, _____ tens and ones.
- _____ = _____ + _____ + _____
- ____ hundreds can be partitioned into ____hundreds and ____ hundreds.

Key Vocabulary:

represent
thousand
base 10
hundreds
times the size
numbers
zeros
columns
placeholder
exchange
value
broken apart
partition
tens
ones
part-whole
3-digit
parts

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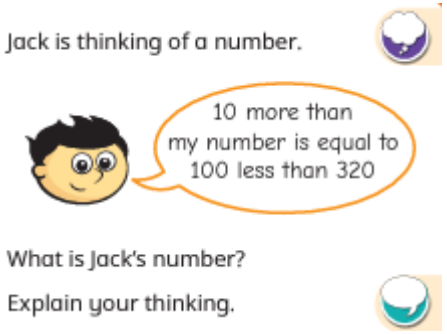

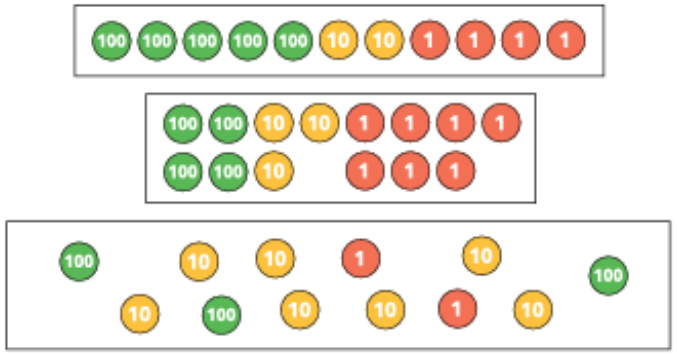

H	T	O
100 100	10	1 1 1 1 1 1

10 less	Number	10 more

100 less	Number	100 more

Key Questions:

- What is the same about representing a number using base 10 and using place value counters? What is different?
- How do you know the value of the counter?
- How do you know which column to place the counter in?
- How many hundreds, tens and ones is ____ made up of?
- How can you use plain counters to represent a number in a place value chart?
- How can you show this using base 10?
- How can you show this using a place value chart?
- When finding 1/10/100 more/less, which place value columns does this effect?
- Which digit/s changes when you find 10 more?
- What is the same and what is different about finding 1/10/100 more and 1/10/100 less?

Stem Sentences:

- _____ can be made using _____ hundred counters, _____ ten counters and _____ one counters.
- _____ is made up of ____ hundreds, _____ tens and _____ ones.
- _____ more/less than _____ is _____.
- _____ is _____ more/less than _____.
- When finding _____more/less than a number, the _____ digit/s changes.

Key Vocabulary:

number
hundreds
tens
ones
place value
base 10
more
less
adding
counters
charts

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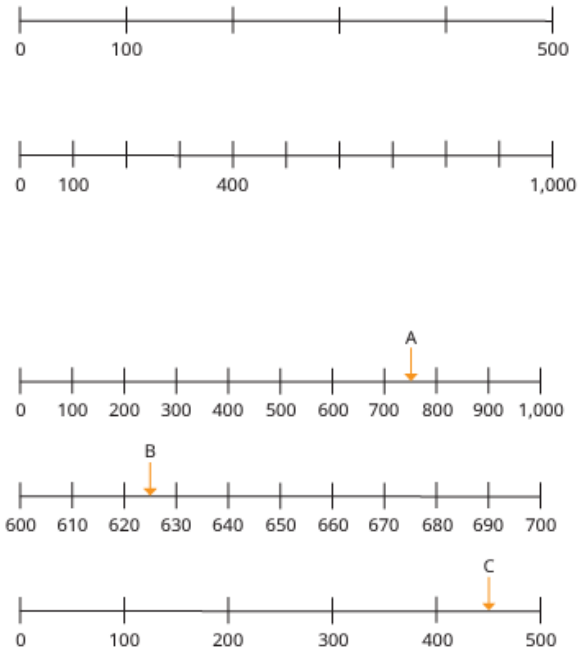

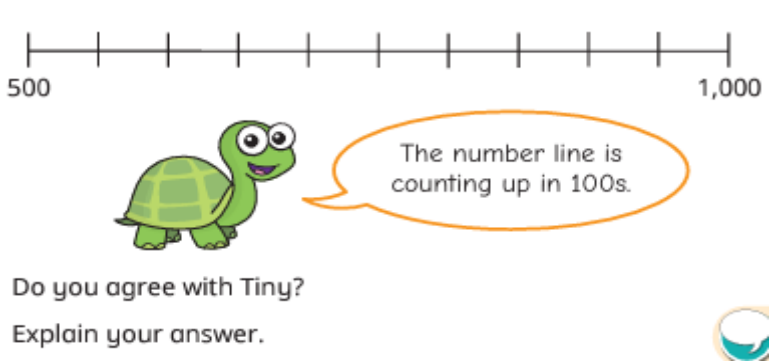

Key Questions:

- What is the start point? What is the end point?
- How many intervals are there? What is each interval worth?
- What is the number line counting up in? How do you know?
- Where would ____ be on the number line? How do you know?
- What number would be halfway along the number line? How do you now?
- What is the number line counting up in? How do you know?
- Where would _____ be on the number line? How do you know?
- Is _____ closer to _____ or _____? How do you know?
- Why can you only estimate?
- What number is halfway between _____ and _____?
- How accurate do you think your estimate is? How could you be more accurate?

Stem Sentences:

- The start point is _____ and the end point is _____.
- There are _____ intervals on the number line.
- Each interval is worth _____.
- The number line is counting up in _____.
- _____ is closer to _____ than _____, so the position of _____ on the number line is closer to _____ than _____.
- _____ is more/less than halfway along the interval, so the position of _____ is closer to _____.

Key Vocabulary:

number line
thousand
start point
end point
values
divisions
intervals
estimate
position
numbers
intervals
factors
multiples
halfway

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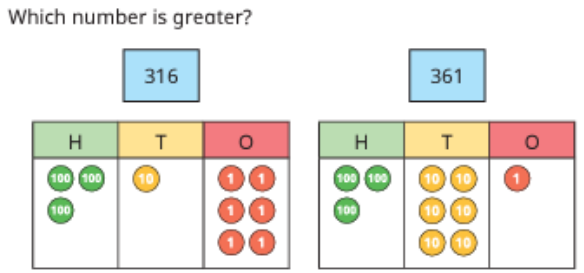

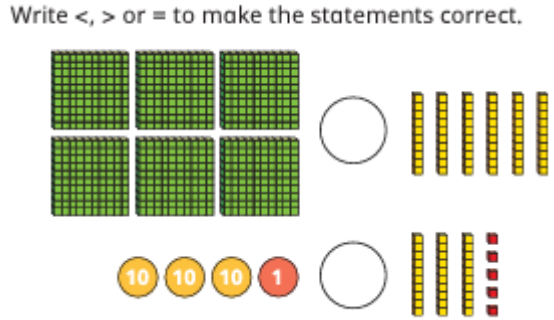

Key Questions:

- How do you know which number is greater?
- Do you start comparing hundreds, tens or ones first? Why?
- What strategy did you use to compare the two numbers? Is this the same as or different from your partners?
- Are the base 10 and place value counters show the same number? How do you know?
- Can you show each number using base 10?
- What is the same about each number? What is different?
- Which number is the greatest? Which number is the smallest? How do you know?
- When comparing two numbers, if the first digits are equal in value, what do you look at next?
- What is different about comparing numbers with the same number of digits and comparing numbers with different number of digits?

Key Vocabulary:

greater
smaller
compare
number line
place value chart
highest
lowest
value
Hundreds
tens
ones
order
greatest
smallest
ascending
descending
column
same
different

Stem Sentences:

- _____ is greater than _____ because...
- _____ is less than _____ because...
- When comparing numbers, I start with the _____ place value column. If they are the same, I will look at the ____ place value column.
- _____ hundreds is greater than _____ hundreds, so _____ is the greater number.
- The numbers are ordered from smallest to greatest. They are in _____ order.
- The numbers are ordered from greatest to smallest. They are in _____ order.

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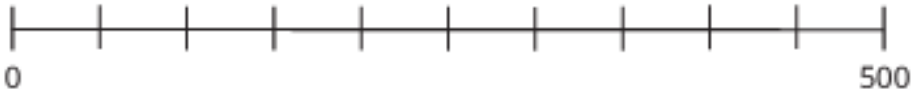
Complete the number line.



Key Questions:

- What is the same about counting in 5s and counting in 50s?
- What is different about counting in 5s and counting in 50s?
- What is the connection between the 5 times-table and the 50 times-table?
- What patters do you notice?
- When counting in 50s from zero, will you ever say a number with _____ tens? How do you know?

Stem Sentences:

- When counting in 50s, the number before/after _____ is _____.
- 50 more/less than _____ is _____.
- If 5 lots of _____ is _____, then 50 lots of _____ is _____.

Esther has made a number track for counting in 5s.

5	10	15	20	25	30

Ben has made a number track for counting in 50s.

50	100	150	200	250	300

What is the same about their number tracks? What is different?

What patterns do you notice?

Key Vocabulary:

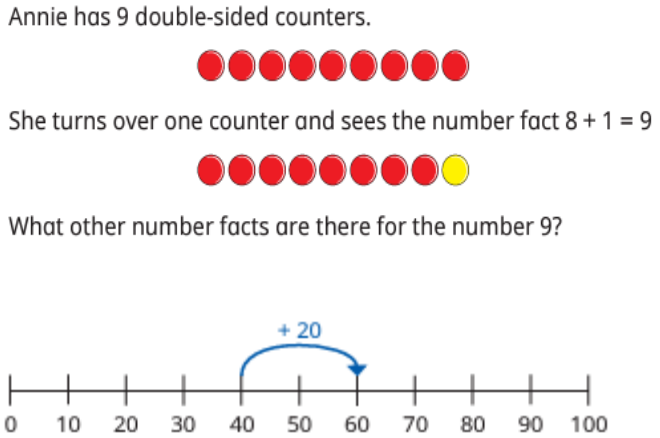
fifty's
count
50's
5 times-table
10 times the size
zero
forwards
backwards
multiple
thousand
number lines
number tracks
counting
same
different
connection
patterns
tens
after
before
more
less
lots of

Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

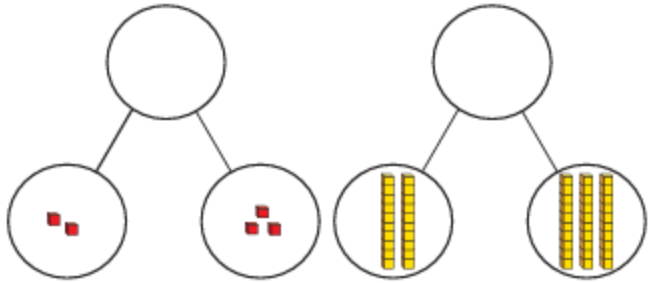


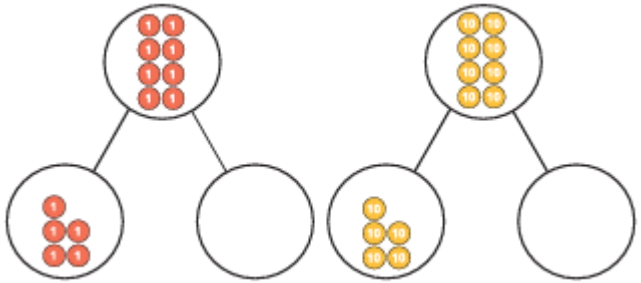
Key Questions:

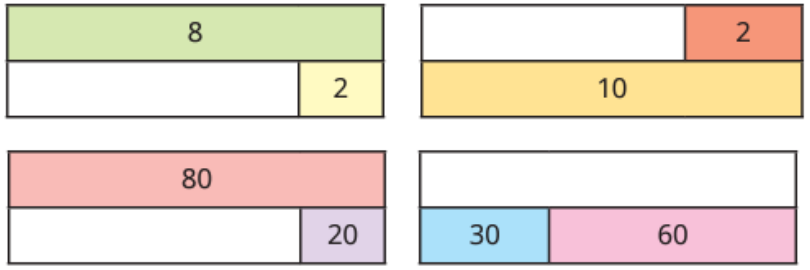
- Which is the whole and which are the parts?
- What needed to be added to this part to make the whole?
- If you take this part from the whole, what will be left?
- Where would this number go in the part-whole model?
- What other number facts do you know if you know this?
- If you multiply both parts by 10 then add them together, what happens to the whole?

Key Vocabulary:

add
subtract
2-digit
number bonds
3-digit
to 10
within 10
base 10
place value counters
number lines
part-whole models
bar models







Stem Sentences:

- If the whole is _____ and one part is _____, then the other part is _____.
- _____ + _____ = 10 so _____ + _____ = 100.
- If I know that _____ + _____ = _____, then I also know...

Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
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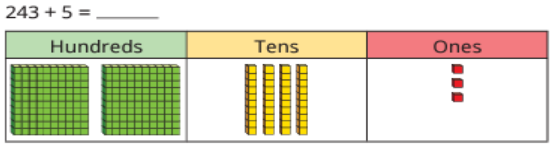
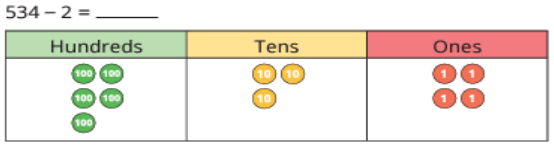
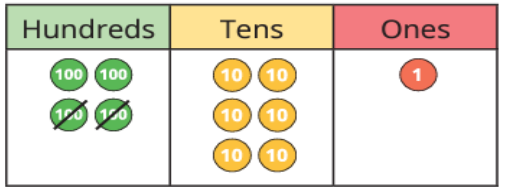
22. Make decisions.





– 3	Number	+ 3
290	293	296
	294	
	295	
	296	



Key Questions:

- Do you have enough ones to make an exchange?
- What happens to any number when you add a 1-digit number?
- What happens to any number when you subtract a 1-digit number?
- Which columns change in a number when you add or subtract a 1-digit number?
- Will more than one column ever change?
- What is the value of the digit ____ in the number ____?
- How many tens/hundreds are there in ____?
- How many tens/hundreds are you adding/subtracting?
- Will the value in the tens/hundreds column increase or decrease? By how much?
- Which place value columns have changed/stayed the same?
- If you know 7 ones minus 3 ones is equal to 4 ones, then what is 7 tens minus 3 tens?
- What is the inverse of adding/subtracting?
- If you know that 3 + 4 = 7 , what is 300 + 400?

Stem Sentences:

- _____ ones plus/minus _____ ones is equal to _____ ones.
- When adding or subtracting 1s to or from a number, the digit in the ____ column always changes.
- If I know 3 + 6 = 9, then I know that 123 + 6 = _____.
- There are ____ hundreds, _____tens and ____ ones.
- _____ tens/hundreds plus/minus _____ tens/hundreds is equal to ____ tens/hundreds.
- The tens/hundreds column will increase/decrease by _____.

Key Vocabulary:

2-digit
3-digit
tens
hundreds
column
place value
ones
added
subtracted
exchange
equal
multiples of 10
multiples of 100
number bonds
increase
decrease
minus
plus

Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

444 + 3 = _____ ▸ 444 – 3 = _____

444 + 30 = _____ ▸ 444 – 30 = _____

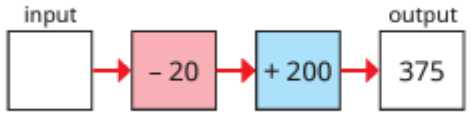
444 + 300 = _____ ▸ 444 – 300 = _____

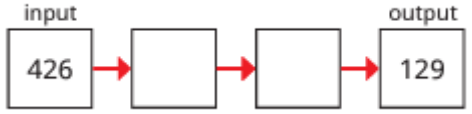
Use Tiny's fact to complete the number sentences.

▸ 20 + 50 = _____ ▸ 500 + 200 = _____

▸ 7 – _____ = 2 ▸ 70 – _____ = 50

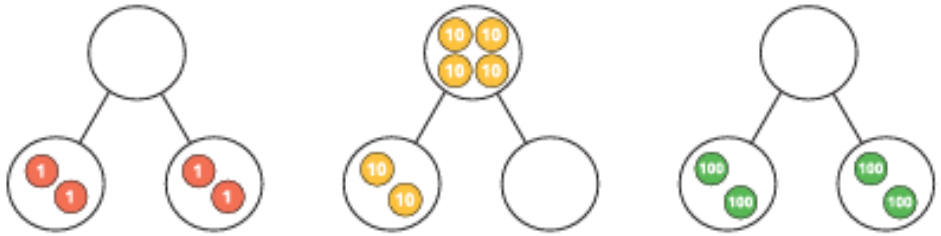
▸ 70 = _____ + 50 ▸ _____ = 700 – 200





Key Questions:

- What is the value of the digit _____ in the number _____?
- Will the value in the ones/tens/hundreds column increase or decrease? By how much?
- Which place value columns have changed/stayed the same? Why?
- If you know 3 + 4 = 7, what else do you know?
- What is the inverse of adding/subtracting_____?
- Will you get the same result if the operations are performed in a different order?



Stem Sentences:

- There are _____ hundreds, _____ tens and _____ones.
- _____ ones/tens/hundreds plus/minus_____ ones/tens/hundreds is equal to _____ ones/tens/hundreds.
- The ones/tens/hundreds column will increase/decrease by _____.

Key Vocabulary:

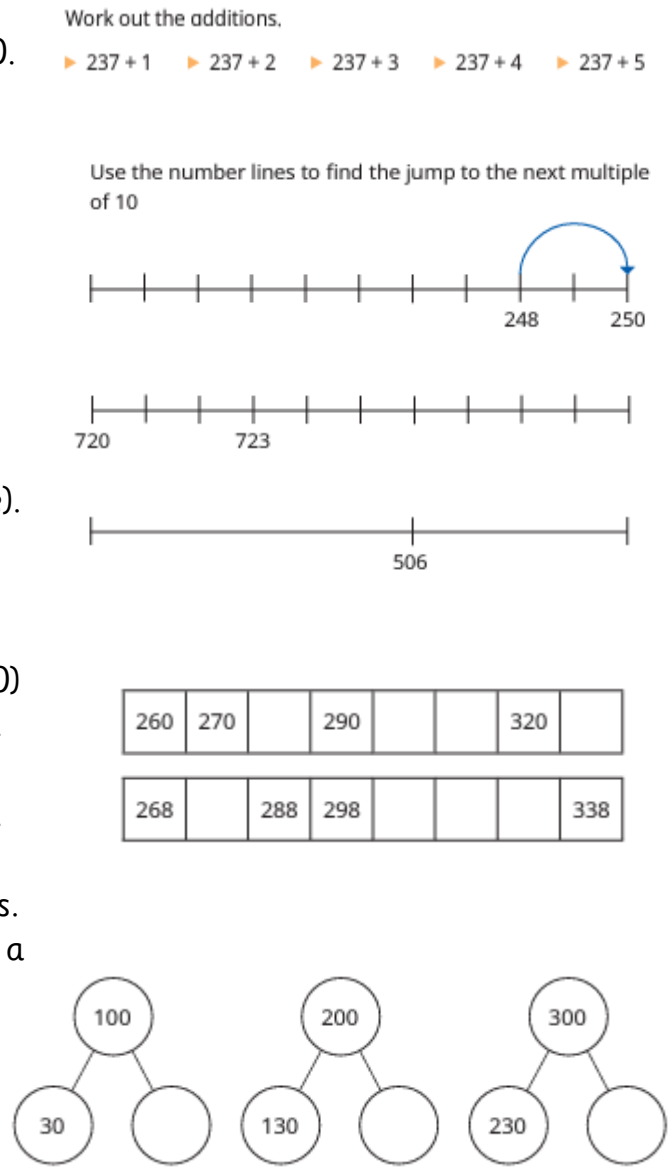
adding
subtracting
1s
10s
100s
3-digit number
change
same
multiples
ones
tens
hundreds
place value
column
number bonds
increase
decrease

Maths – Addition and Subtraction

YEAR 3

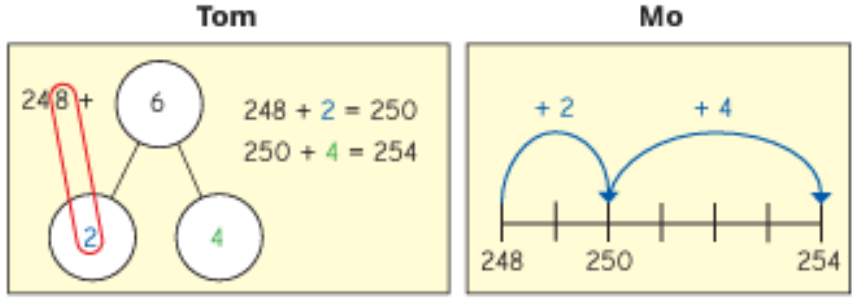
Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.



Key Questions:

- What is the next multiple of 10/100 after ____?
- How can you partition_____?
- What number do you add to _____ to make 10/100?
- What is the jump from _____ to the next multiple of 10?
- If _____ is a part/jump, what is the other part/jump____?
- Which columns have changed/stayed the same?
- Does the _____ column always/sometimes/never change?
- Which method do you prefer?
- Which method is more efficient?



Key Vocabulary:

addition
subtraction
1-digit
2-digit
3-digit
crossing 10
number bonds
multiple of 10
partition
number line
ten
hundred
multiple of 100
place value
columns
always
sometimes
never
change

Stem Sentences:

- The next multiple of 10 after _____ is _____.
- _____ can be partitioned into _____ and _____.
- I need to add _____ to get to the next 10, and then add another _____.
- The next multiple of 100 after _____ is _____.
- I need to add _____ to cross the next 100 and then add another_____.

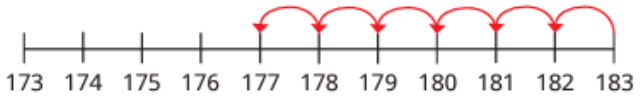
Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

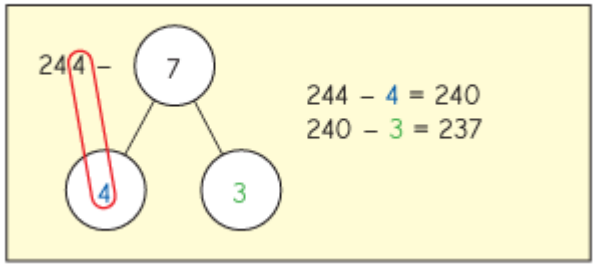
Use the number line to work out 183 – 6



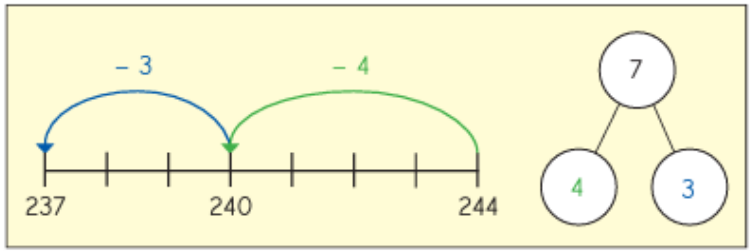
Key Questions:

- What is the previous multiple of 10/100 before _____?
- How can you partition_____?
- What is the jump from _____ to the previous multiple of 10/100?
- If _____ is a part/jump, what is the other part/jump____?
- Which columns have changed/stayed the same?
- Which method do you prefer?
- Which is more efficient?

Scott's method



Whitney's method



What mistake has Tiny made?

Stem Sentences:

- The previous multiple of 10 before _____ is _____.
- _____ can be partitioned into _____ and _____.
- I need to subtract _____ to get to the previous multiple of 10, then subtract_____more.
- The multiple of 100 before _____ is _____.
- _____ can be partitioned into _____ and _____.
- I need to subtract _____ to get to the previous multiple of 100, then subtract _____ more.

Key Vocabulary:

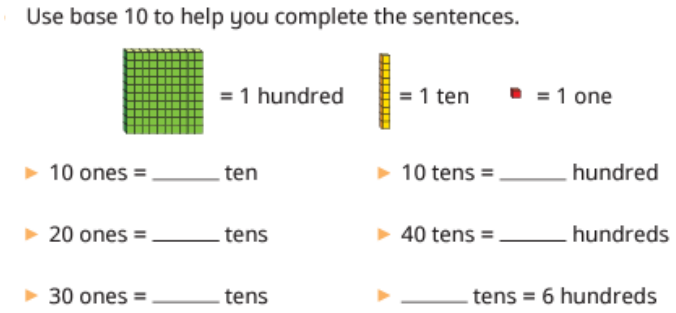
subtract
1-digit number
3-digit number
crossing a 10
1s
multiple of 10
numbers bonds to 10
partition
part
jump
columns
changed
stayed the same
before
previous
10s
crossing a 100
counting back
multiple of 100

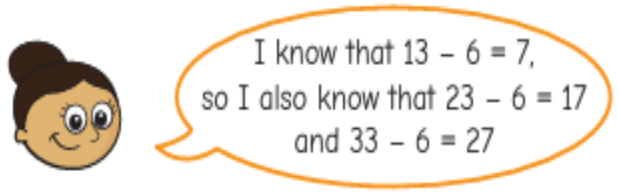
Maths – Addition and Subtraction

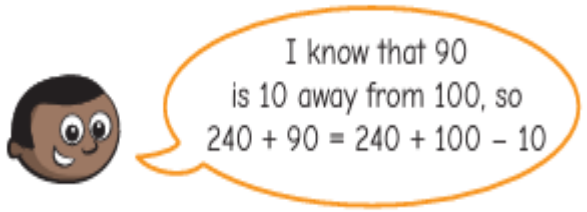
YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

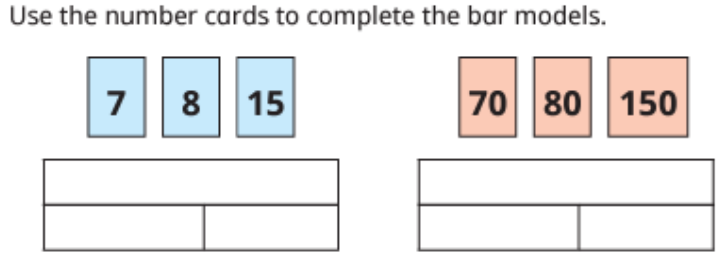






Key Questions:

- What is the multiple of 10/100 after _____?
- What is the multiple of 10/100 before _____?
- What is the jump from _____ to the next/previous multiple?
- If _____ is a part/jump, what is the other part/jump?
- Which columns have changed/stayed the same?
- Which method do you prefer?
- Which is more efficient?



Stem Sentences:

- _____ ones + _____ ones = _____ ones, so _____ ones - _____ ones = _____ ones.
- _____ ones + _____ ones = _____ ones, so _____ tens + _____ tens = _____ tens.

Key Vocabulary:

adding
subtracting
1s
10s
100s
to/from
3-digit numbers
cross a 10 or a 100
connections
calculations
ones
equal
tens
Hundreds
multiple
next
previous
part
jump
columns
changed
stayed
same

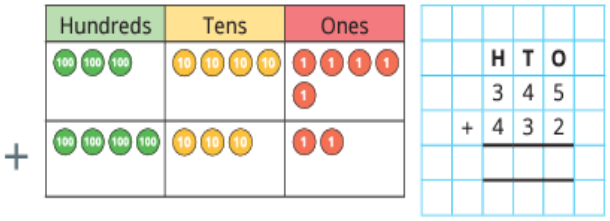
Maths – Addition and Subtraction

YEAR 3

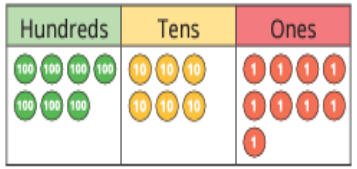
Small Steps:

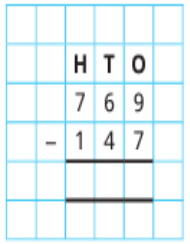
1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

Find the sum of 345 and 432

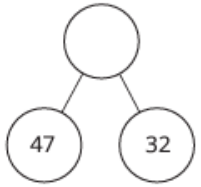


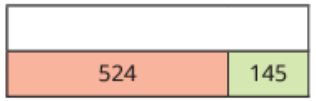
Work out 769 – 147



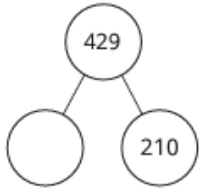


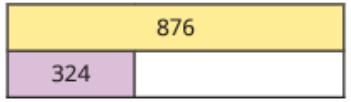
Fill in the missing numbers.





Work out the missing numbers.





Key Questions:

- Do you have enough ones/tens to exchange for a ten/hundred?
- Do you need to make an exchange?
- How can you represent the question using base 10?
- How can you partition these numbers into a place value chart?
- Does it matter which columns you add together first?
- What do you put in the tens column if there are no tens?
- Do you need to make both numbers before you subtract?
- Does it matter which column you subtract from first?
- Do you have enough ones/tens to subtract ____ones/tens?
- Does it matter which number you write at the top when using the column method for subtraction?

Stem Sentences:

- _____ ones plus _____ ones is equal to _____ ones.
- _____ tens plus _____ tens is equal to _____ tens.
- _____ hundreds plus _____ hundreds is equal to _____ hundreds.
- _____ hundreds, _____ tens and _____ ones is equal to _____.
- _____ ones/tens/hundreds minus _____ ones/tens/hundreds is equal to _____ ones/tens/hundreds.
- Now there are _____ hundreds, _____ tens and _____ ones. The answer is _____.

Key Vocabulary:

addition
subtraction
written
2-digit
3-digit
formal written method
place value chart
add
subtract
base 10
exchange
ones
tens
hundreds
partition
columns
equal to
plus
minus

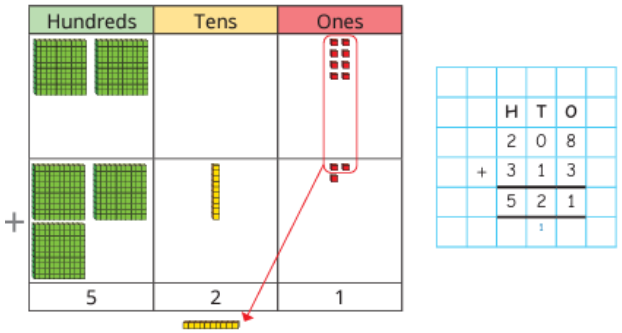
Maths – Addition and Subtraction

YEAR 3

Small Steps:

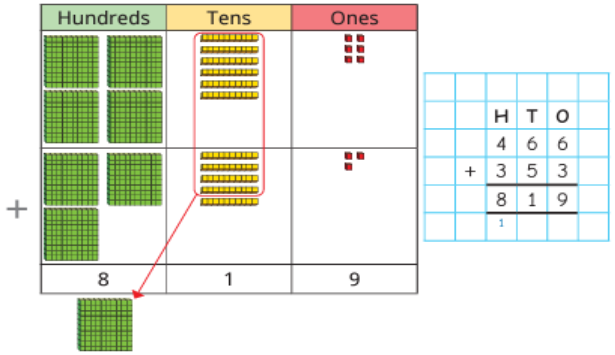
1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

Dexter uses base 10 to work out 208 + 313



	H	T	O
	2	0	8
+	3	1	3
	5	2	1

Nijah uses base 10 to work out 466 + 353



	H	T	O
	4	6	6
+	3	5	3
	8	1	9

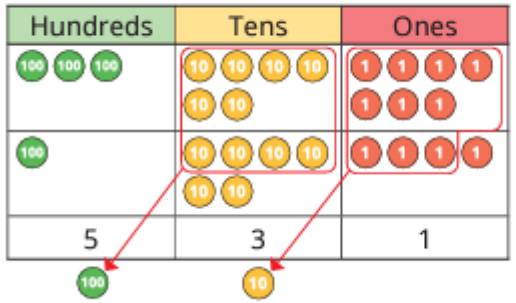
	H	T	O
	2		3
+	1	6	
	3	7	0

	H	T	O
	4		3
+	1		5
	6		8

Key Questions:

- Does it matter which column's numbers you add together first?
- Do you have enough ones/tens to make an exchange?
- Where do you put the ten/hundred that you made from exchanging 10 ones/10 tens in your model?
- How can you show that you have exchanged 10 ones/10 tens in your written calculation?

Ron uses place value counters to work out 367 + 164



	H	T	O
	3	6	7
+	1	6	4
	5	3	1
	1	1	

Stem Sentences:

- _____ ones + _____ ones = _____ ones.
- If I have _____ ones, I can exchange them for _____ ten and _____ ones.
- I have _____ hundreds, _____ tens and _____ ones, so altogether I have _____.
- _____ tens + _____ tens = _____ tens.
- If I have _____ tens, I can exchange them for _____ hundred and _____ tens.
- I have _____ hundreds, _____ tens and _____ ones, so altogether I have _____.

Key Vocabulary:

add
addition
adding
2-digit
3-digit
exchanges
ones
tens
hundreds
base 10
place value counters/chart
column
value
written method
calculation

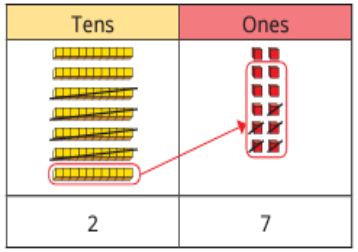
Maths – Addition and Subtraction

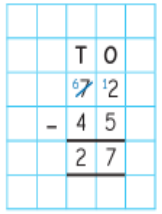
YEAR 3

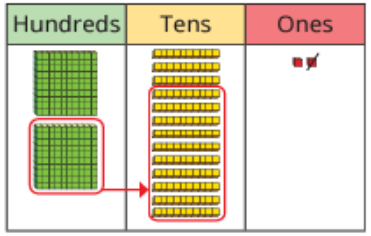
Small Steps:

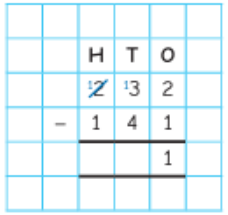
1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

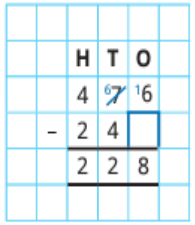
Annie uses base 10 to work out 72 – 45

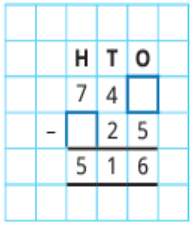


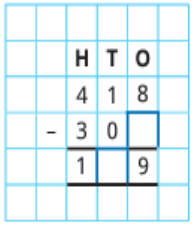


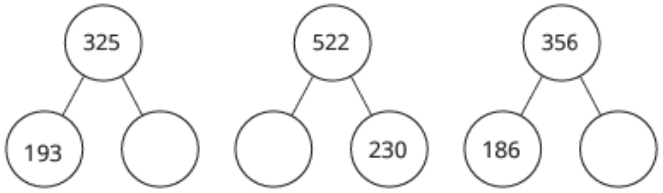






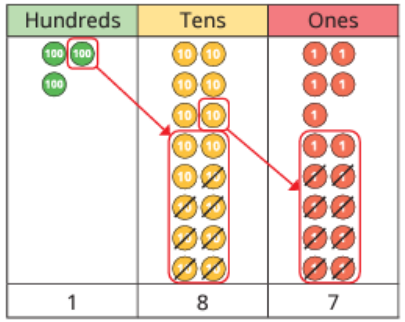


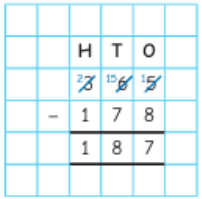




Key Questions:

- How can you show this questions using base 10?
- Can you subtract 2 ones/tens from 5 ones/tens?
- Can you subtract 5 ones/tens from 2 ones/tens?
- Do you need to make an exchange?
- How can you show an exchange using base 10 or place value counters?
- How can you show an exchange using the written method?





Stem Sentences:

- _____ ones subtract _____ ones is equal to _____ ones.
- I will exchange 1 ten for _____ ones.
- Now I have _____ hundreds, _____ tens and _____ ones.
- The answer is _____.
- _____ tens subtract _____ tens is equal to _____.
- I will exchange 1 hundred to make _____ tens.
- Now there are _____ hundreds, _____ tens and _____ ones.
- The answer is _____.

Key Vocabulary:

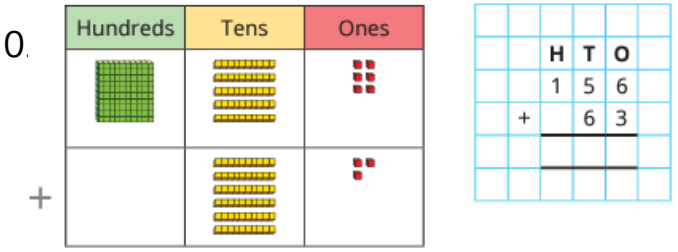
written method
subtraction
subtract
minus
exchanges
2-digit
3-digit
tens
ones
hundreds
base 10
calculation
across a 100
place value counters
multiples

Maths – Addition and Subtraction

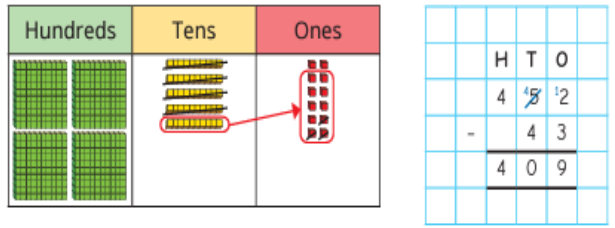
YEAR 3

Small Steps:

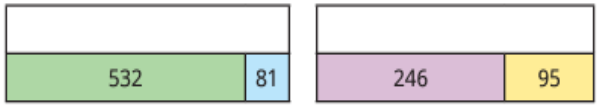
1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.



Teddy uses base 10 to work out 452 – 43



Complete the bar models.



301 ◯ 327 – 28

522 – 131 ◯ 522 – 31

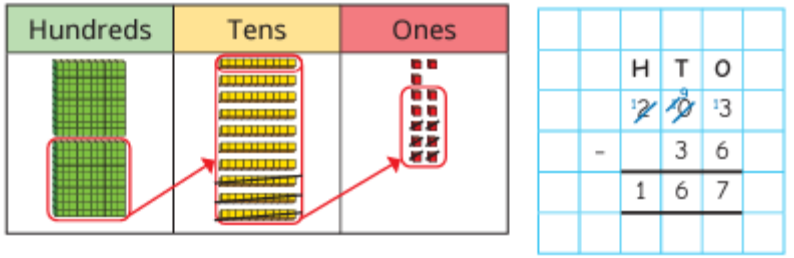
375 – 93 ◯ 324 – 51

243 – 58 ◯ 253 – 68

Key Questions:

- How can you show this question using base 10/place value counters?
- How can you write this calculation using the formal written method?
- Have you put all the digits in the correct columns?
- Do you need to make an exchange?
- What could you write in the hundreds column if there are no hundreds?
- If you cannot exchange from the tens, what should you do?

Eva uses base 10 to work out 203 – 36



Key Vocabulary:

formal written method
addition
add
plus
subtraction
subtract
minus
2-digit
3-digit
exchange/s
ones
tens
hundreds
digits
place value columns
zero
placeholder
absence
two-part exchange
equal to

Stem Sentences:

- _____ hundreds added to _____ hundreds is equal to _____ hundreds.
- I put _____ in the _____ column because…
- _____ hundreds subtract _____ hundreds is equal to _____.
- I will exchange 1 hundred for _____ tens, then 1 tens for _____ ones.

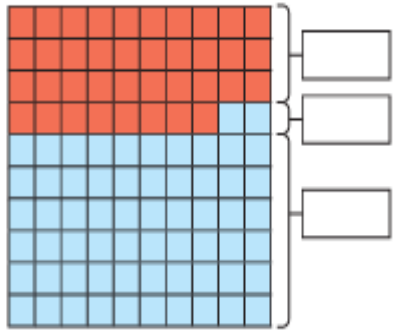
Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

Fill in the totals for the hundred square.

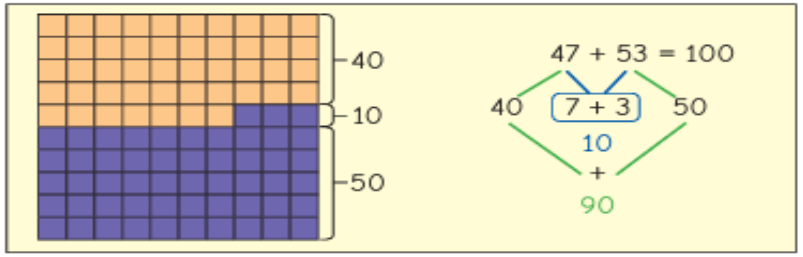


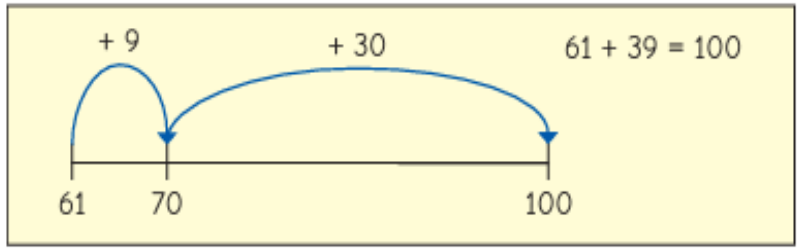
Key Questions:

- How many squares are there altogether? How do you know?
- How many full rows of each colour are there?
- What do you notice about the row with both colours in it?
- What do you notice about the total of the tens?
- What do you notice about the total of the ones?
- What is the jump to the next multiple of 10?
- What is the jump to 100?

Key Vocabulary:

complements to 100
numbers bonds
ones
tens
hundreds
number line
altogether
multiples





Sort the additions into the table.

32 + 78	83 + 17	55 + 55	49 + 16
66 + 34	91 + 19	52 + 47	7 + 93

Bond to 100	Not a bond to 100

Complete the complements to 100

- 84 + 1__
- 35 + __5
- __7 + 53
- 26 + _____

Stem Sentences:

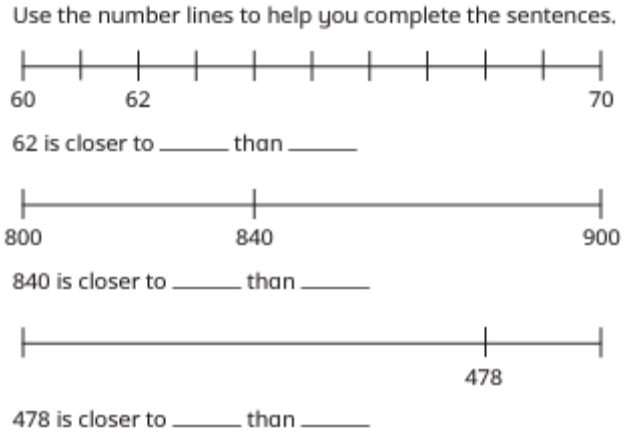
- I add ____ to get to the next 10, then ____ to get to 100.
- This means ____ is the complement to 100 of ____.
- ____ plus ____ is equal to 100.

Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

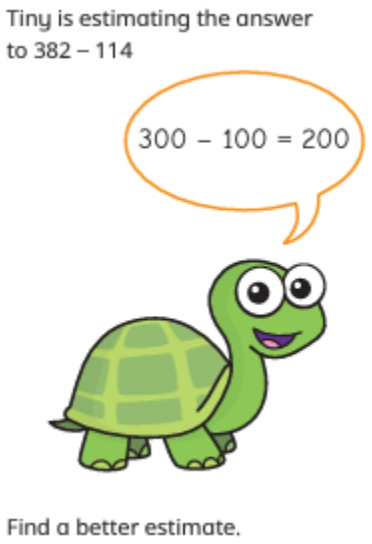


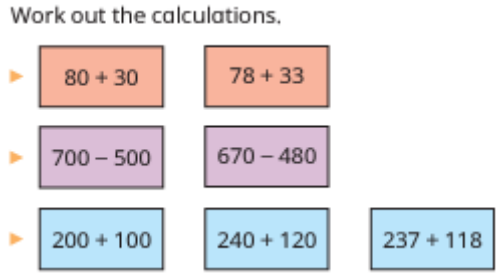
Key Questions:

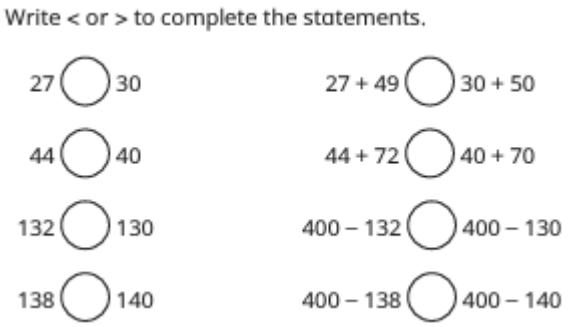
- What are the multiples of 10/100 before and after _____?
- Where would _____ be on this number line?
- Which multiple is _____ closer to?
- How far from _____ is _____?
- Which calculation is easier/quicker to perform?
- Which calculations can you do mentally?
- Why do we use estimates?
- Is the estimate less than or greater than the actual answer?
- Why?

Key Vocabulary:

rounding
estimating
position
numbers
number line
answer
near to
calculated
greater
less than
multiples
before
after
closer
mentally







Stem Sentences:

- _____ is near to _____.
- The estimated answer will be less/greater than the actual answer because…

Maths – Addition and Subtraction

YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
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9. Subtract 10s across a 100.
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13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
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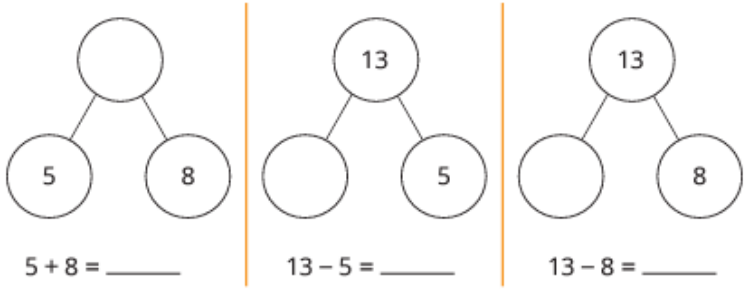
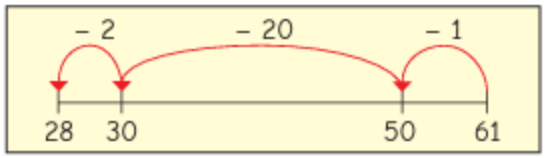
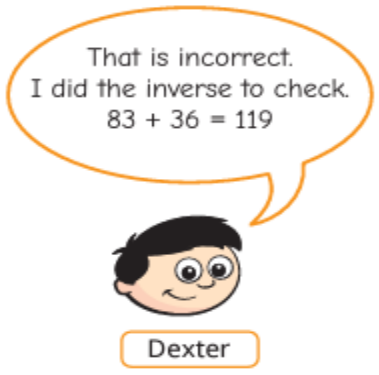
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.



Tiny uses a number line to work out 61 – 23



Aisha works out 83 – 47 and gets the answer 36



What mistake has Dexter made?

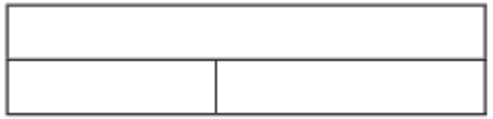
Key Questions:

- What do you notice about the part-whole models?
- What are the two parts? What is the whole?
- What does 'inverse' mean?
- What is the inverse of add/subtract ____?
- What does commutative mean?
- Is addition/subtraction commutative?
- What estimate could you use to check?

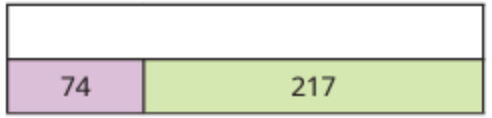
Key Vocabulary:

inverse
addition
subtraction
part-whole model
bar model
relationships
commutative
estimation
operations

Complete the bar model for 561 – 236 = 325



Find the whole.



Stem Sentences:

- If ____ is a part and ____ is a part, then ____ is the whole.
- If ____ is the whole and ____ is a part, then ____ is the other part.

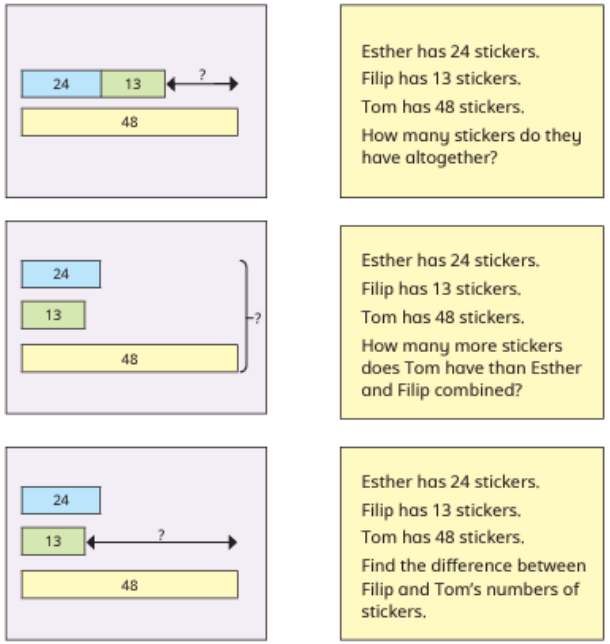
Maths – Addition and Subtraction

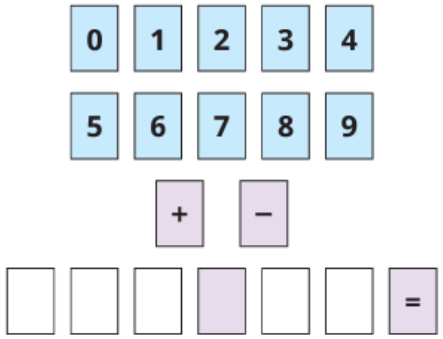
YEAR 3

Small Steps:

1. Apply numbers bonds within 10.
2. Add and subtract 1s.
3. Add and subtract 10s.
4. Add and subtract 100s.
5. Spot the pattern.
6. Add 1s across a 10.
7. Add 10s across a 100.
8. Subtract 1s across a 10.
9. Subtract 10s across a 100.
10. Make connections.
11. Add two numbers (no exchange).
12. Subtract two numbers (no exchange).
13. Add two numbers (across a 10)
14. Add two numbers (across a 100)
15. Subtract two numbers (across a 10)
16. Subtract two numbers (across a 100)
17. Add 2-digit and 3-digit numbers.
18. Subtract a 2-digit number from a 3-digit number.
19. Complements to 100.
20. Estimate answers.
21. Inverse operations.
22. Make decisions.

Match the bar models to the problems.





Use the cards to create additions and subtractions that give an answer between 200 and 300

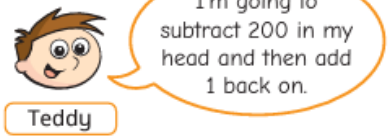
Key Questions:

- Do you know the whole?
- What parts do you know?
- Which operation do you need to use?
- Can you use a mental method or do you need to use a written one?
- Which method is more efficient?
- What does this arrow represent on the bar model?
- Where is the whole/total on the bar model?
- What is the first step you need to do?
- Do you have to complete the calculations in a specific order?

Kim and Teddy are working out 436 – 199

Kim's workings

		H	T	O	
		4	3	6	
	−	1	9	9	



Use both methods to work out the answer.

Stem Sentences:

- _____ is a part and _____ is a part, so I need to _____.
- _____ is the whole and _____ is a part, so I need to _____.

Key Vocabulary:

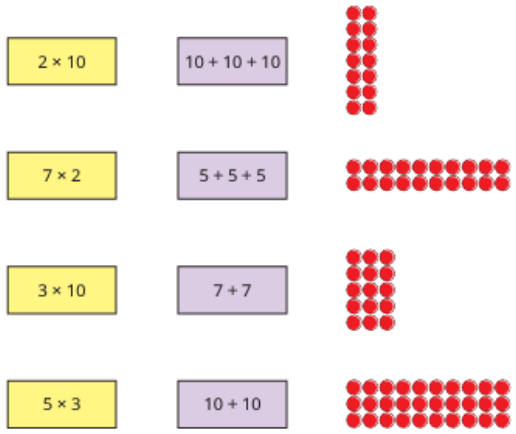
decisions
operation
method
solve
problem
word problems
multi-step problems
bar model
whole
parts
total
mental
written
efficient
represent
calculations

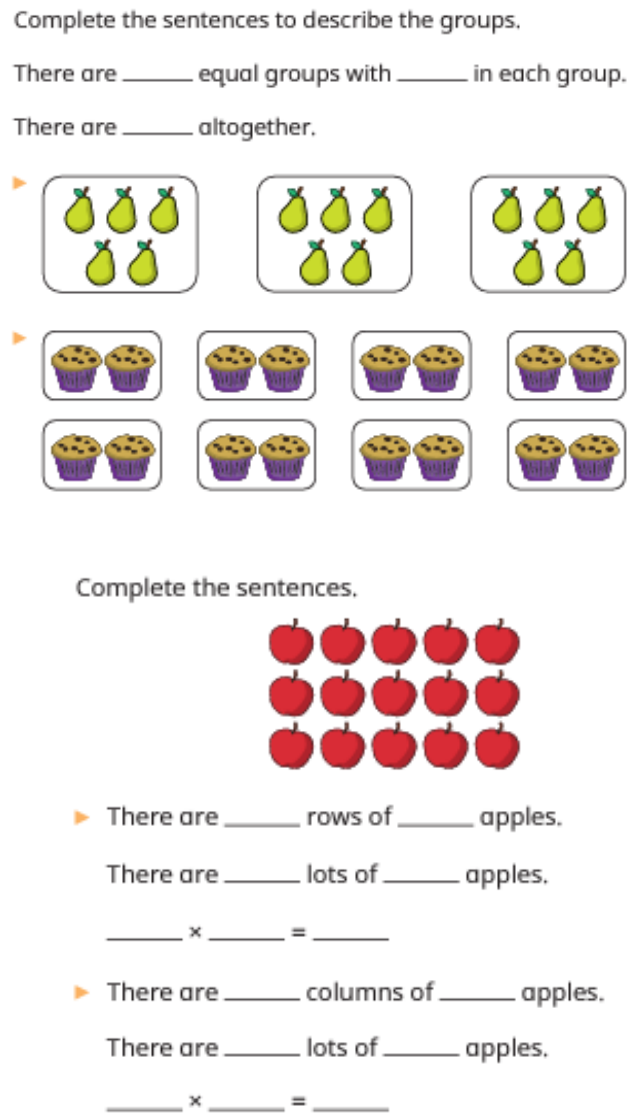
Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
3. Multiples of 2.
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.





Key Questions:

- How can you tell if groups are equal?
- What does the 2 represent? What does the 8 represent?
- How can you show the groups?
- What is the same and what is different about the groups?
- How many ways can you show this?
- Do these two groups look the same? Why or why not?
- How many lots of 2 do you have?
- How many lots of 5 do you have?
- What does this array show?
- What number sentences can you write to describe this array?
- How does this array show repeated addition and multiplication?
- What happens if you change the order of the numbers in a multiplication?

Key Vocabulary:

equal
groups
repeated addition
multiplication
times-table facts
represent
same
different
arrays
Commutativity
lots of
groups of

Stem Sentences:

- There are _____ equal groups with _____ in each group. There are _____ altogether.
- The groups are equal because…
- There are _____ lots of _____.
- _____x_____=_____ x _____.

Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
3. Multiples of 2.
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.

2	4		8		12			
16	18		22		26			
32		28			22			

0	5		15		25			
60	55		45					
110		90		70				

Colour the multiples of 2 in the grid.

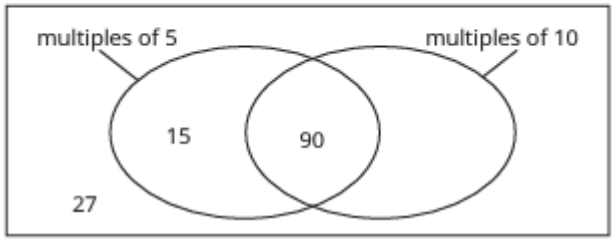
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Sort the numbers into the diagram.

15 90 27 95 105 40

700 740 57 605 406 50

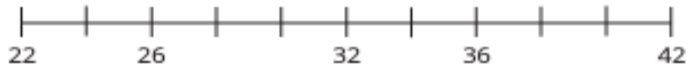
The first three have been done for you.



Key Questions:

- What is the next multiple of 2?
- What is the multiple of 2 before ____ ?
- How do you know that all multiples of 2 are even?
- What do you notice when you add two even numbers together? Is this always true?
- What do you notice when you add two odd numbers together? Is this always true?
- What is the next multiple of 5/10?
- What is the multiple of 5/10 before _____?
- What do you notice about the multiples of 5 and 10?
- When is a multiple of 5 also a multiple of 10?
- Is ____ a multiple of 5/10? How can you tell?
- Are all multiples of 10 even? How do you know?

- Complete the number line.



Stem Sentences:

- The next multiple of 2 is _____.
- The previous multiple of 2 is _____.
- I know _____ is even because...
- The next multiple of 5/10 is _____.
- The previous multiple of 5/10 is _____.
- I know _____ is a multiple of 5/10 because...

Key Vocabulary:

2s
2 times-table
multiples
divided
equal
groups
even
odd
whole number
ones
tens
hundreds
digits
next
after
before
previous
5s
10s

Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
3. Multiples of 2.
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.

Here are 14 counters.

- Share the counters equally into 2 groups.

Complete the sentences.

There are _____ counters altogether.

There are _____ groups.

There are _____ counters in each group.

14 ÷ _____ = _____

Are the statements about sharing or grouping?

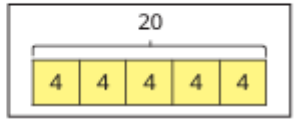
Teddy puts pencils into pots. He has 25 pencils and puts 5 pencils in each pot.

Filip has 15 books. He gives each of his friends an equal number of books.

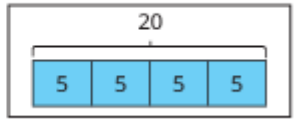
Annie has 12 sweets. She puts the same number of sweets in each party bag.

Match the statements to the bar models.

20 pencils are shared equally between 5 people.



20 pencils are grouped into packs of 5



Key Questions:

- How can you share ____ into ____ equal groups?
- How can you put the number of ____ into equal groups of ____?
- What is the difference between sharing and grouping?
- Is the question asking you to share or group?
- How do you know?
- What does the answer mean?

- Eva puts 30 apples into bags.
  Each bag has 5 apples in it.
  How many bags are there?
  Draw a bar model to show this problem.

- Ms Rose has 60 balloons.
  She shares them equally between 10 classrooms.
  How many balloons are in each classroom?
  Draw a bar model to represent this problem.

Key Vocabulary:

division
sharing
grouping
equally
groups
bar model
2s
5s
10s
times-tables
difference

Stem Sentences:

- ____ has been shared equally into ____ equal groups.
- There are ____ groups of ____ in ____.
- This question is sharing/grouping because…

Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
3. Multiples of 2.
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.

- There are 5 towers.
  Each tower has 3 cubes.
  Complete the sentences.

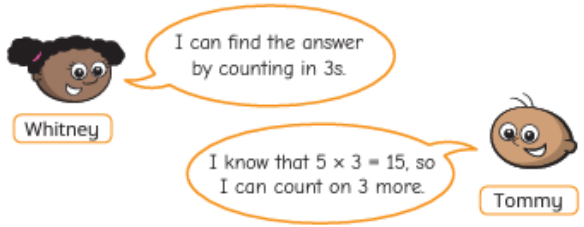
There are _____ equal groups with _____ in each group.

There are _____ altogether.

_____ + _____ + _____ + _____ + _____ = _____

_____ × _____ = _____

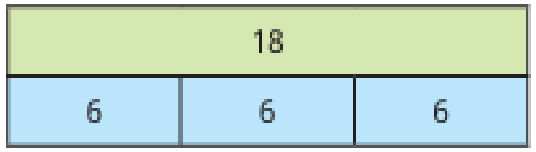
- Whitney and Tommy are working out 6 × 3

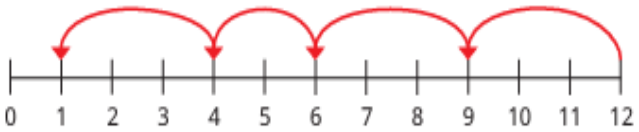


Whose method is more efficient?

Arrange the counters in groups of 3 and complete the division.

_____ ÷ 3 = _____





Write <, > or = to complete the statements.

9 × 3 ◯ 2 × 3

6 × 3 ◯ 5 × 3 + 1 × 3

5 × 3 + 2 × 3 ◯ 7 × 3 + 1 × 3

Key Questions:

- How many equal groups are there?
- How many are in each group?
- How could you show this multiplication using a bar model?
- How could you use counters to explore the problem?
- How many lots/groups of 3 do you have?
- How many will go into each group?
- How many groups of 3 can you make?
- How can you show me sharing?
- How can you show me grouping?
- Is the question sharing or grouping? How do you know?
- How can you show this using an array?
- What would one more lot be?
- What would double the number of lots be?
- If you know this, what else do you know?
- How could you partition the array to show different groups of 3?

Stem Sentences:

- There are _____ groups.
- There are _____ in each group.
- There are _____ altogether.
- __ x 3 = __ x 3 + __ x 3
- _____ has been shared equally into _____ equal groups.
- There are _____ groups of _____ in _____.
- There are _____ lots of 3.
- _____ lots of 3 is equal to _____.
- If I know _____ x 3 is _____, then I can find _____ x 3 by...

Key Vocabulary:

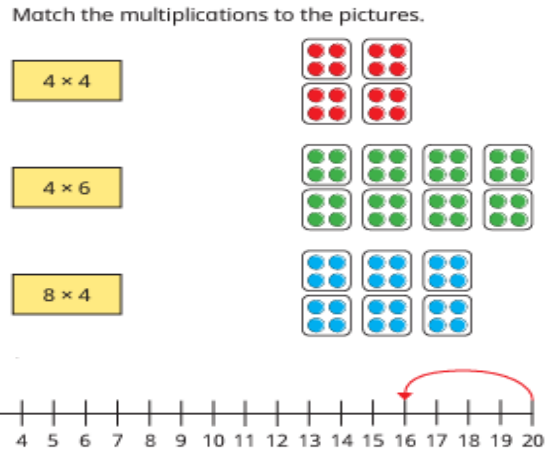
3s
repeated addition
multiplication
multiples
equal
groups
multiplying
counting
partitioning
bar model
lots of
groups of
dividing
division
sharing
grouping
inverse
operations
times-table
fact families
doubling
halving
commutativity
inverse
operation
2-digits

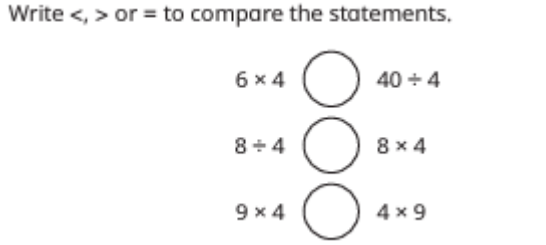
Maths – Multiplication and Division A

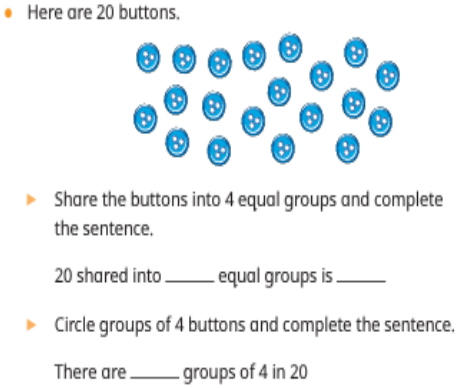
YEAR 3

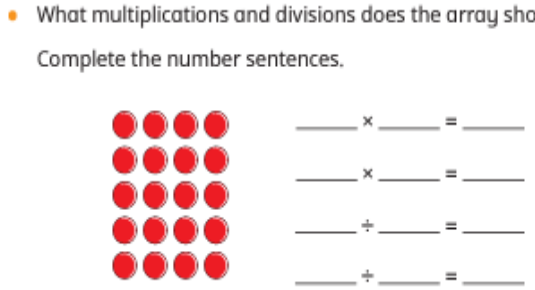
Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
3. Multiples of 2.
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.









Key Questions:

- How many equal groups are there?
- How many are in each group?
- How can you write a number sentence to show this?
- How many lots of 4 do you have?
- How can you show why multiplying by 4 is the same a multiplying by 2 and then by 2 again?
- How can you share ____ into 4 equal groups?
- How can you put ____ into equal groups of 4?
- What is the difference between sharing and grouping?
- Is this question asking you to share the ____ or group them? How do you know?
- How can you show that dividing by 4 is the same as dividing by 2 and then by 2 again?
- What does your answer represent?
- What can you partition ____ into to help you multiply ____ by 4?
- What strategy can you use when multiplying by 4?
- What strategy can you use when dividing by 4?

Stem Sentences:

- There are ____ equal groups with ____ in each group.
- There are ____ altogether.
- Double ____ is ____ and double ____ is ____, so 4 lots of ____ is ____.
- ____ has been shared into ____ equal groups.
- There are ____ groups of ____ in ____.
- ____ x 4 = ____ x 4 + ____ x 4

Key Vocabulary:

2's
times-table
multiply
4s
arrays
multiplying
doubling
5's
lots of
minus
equal groups
counting
commutativity
groups
number sentence
sharing
grouping
dividing
halving
partitioning
subtracting

Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
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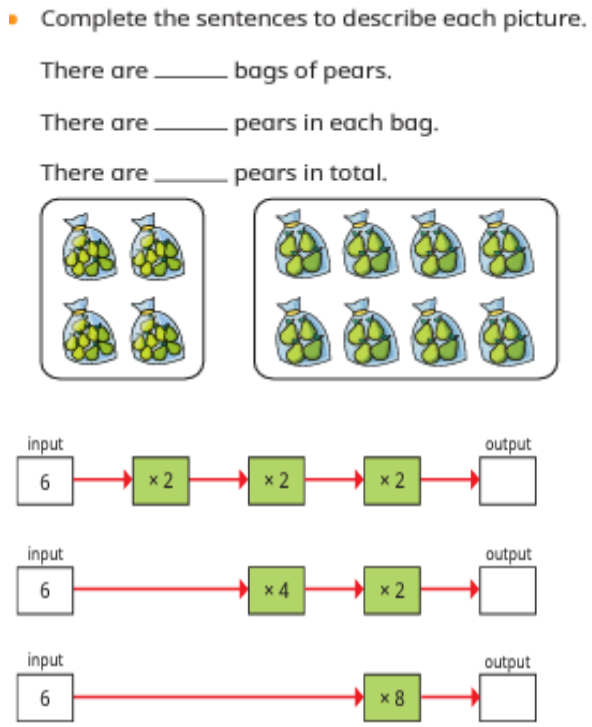
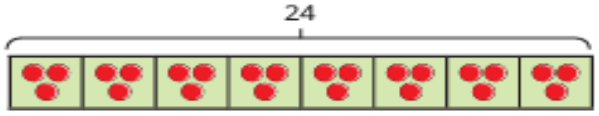
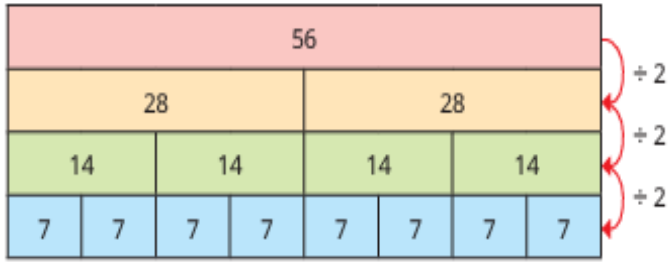
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.





×	4	8
3		
7		
8		
11		



Key Questions:

- How many equal groups are there?
- How many are in each group?
- How can you write a number sentence to show this?
- How many lots of 8 do you have?
- How many groups of 8 are there in ____?
- What is the relationship between multiplying by 4 and multiplying by 8?
- How can you share ____ into 8 equal groups?
- How can you put ____ into equal groups of 8?
- What is the difference between sharing and grouping?
- Is this question asking you to share the ____ or group them? How do you know?
- How can you show that dividing by 8 is the same as dividing by 2 three times?
- What can you partition ____ into to help you multiply ____ by 8?
- What strategy can you use when multiplying/dividing by 8?

Stem Sentences:

- There are ____ equal groups with ____ in each group.
- There are ____ altogether.
- If ____ x 4 = ____, then ____ x 8 = ____
- ____ has been shared into ____ equal groups.
- There are ____ groups of ____ in ____.
- ____ x 8 = ____
- ____ x 8 = ____ x 8 + ____ x 8

Key Vocabulary:

4s
times-table
multiply
8s
equal groups
counting
multiplying
double
equivalent
same
multiple
lots of
subtracting
commutativity
multiplication
equal to
division
sharing
grouping
dividing
halving
partitioning
greater than

Maths – Multiplication and Division A

YEAR 3

Small Steps:

1. Multiplication – equal groups.
2. Use arrays.
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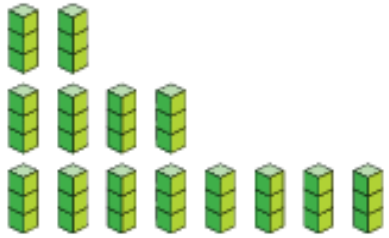
4. Multiples of 5 and 10.
5. Sharing and grouping.
6. Multiply by 3.
7. Divide by 3.
8. The 3 times-table.
9. Multiply by 4.
10. Divide by 4.
11. The 4 times-table.
12. Multiply by 8.
13. Divide by 8.
14. The 8 times-table.
15. The 2, 4 and 8 times-tables.

- Complete the multiplications.

  - 3 × 2 = _____
  - 3 × 4 = _____
  - 3 × 8 = _____



- Complete the table.

×	2	4	8
3	6		
	10	20	
			72

Is the statement true or false?

Multiples of 8 are also multiples of 4 and 2

Match the equivalent calculations.

6 × 8	64 ÷ 2 ÷ 2 ÷ 2
6 × 4	6 × 4 × 2
64 ÷ 8	half 64, then half it again
64 ÷ 4	6 × 2 × 2

Key Questions:

- How does knowing ____ x 2 help you work out ____ x 4 and ____ x 8?
- What is the relationship between multiplying by 4 and multiplying by 8?
- How can you show that multiplying by 4 is the same a multiplying by 2 and then by 2 again?
- How can you show that dividing by 4 is the same as dividing by 2 and then by 2 again?

Tiny has been looking at the 2, 4 and 8 times-tables.

Doubling the 2 times-table is equal to the 4 times-table and doubling the 4 times-table is equal to the 8 times-table.

Use Tiny's method to complete the calculations.

7 × 2 = _____	9 × 2 = _____	12 × 2 = _____
7 × 4 = _____	9 × 4 = _____	12 × 4 = _____
7 × 8 = _____	9 × 8 = _____	12 × 8 = _____

Stem Sentences:

- ____ x 4 = ____ x 2 x 2
- ____ x 8 = ____ x 2 x 2 x 2
- ____ x 8 = ____ x 2 x 4

Key Vocabulary:

multiplying
2s
4s
8s
connections
patterns
times-table
doubling
dividing
halving
calculate
relationship
same

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
6. Link multiplication and division.
7. Divide a 2-digit number by a 1 digit number – no exchange.
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

Complete the number track.

10	20		40		60			90	100

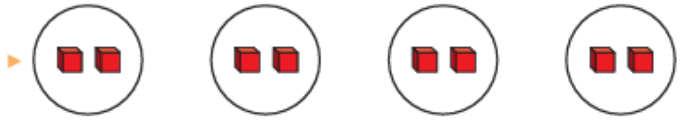
Use the ten frame to complete the sentence.

10 tens are equal to _____

Use the ten frames to complete the calculation.

17 × 10 = 10 × 10 + 7 × 10 = _____ + _____ = _____

Complete the number sentences to match the pictures.



4 × 2 ones = _____ ones

4 × 2 = _____

4 × 2 tens = _____ tens

4 × 20 = _____

Key Questions:

- What is the multiple of 10 before _____?
- What is the multiple of 10 after _____?
- Is _____ a multiple of 10? How can you tell?
- How many tens are there in?
- How can you use a Gattegno chart/place value chart to help multiply or divide a number by 10?
- What is the same about all multiples of 10?
- What is different?
- What is the same and what is different about the two calculations?
- How can you represent the calculation using place value counters/base10?
- How is multiplying by 10's different from multiplying by 1's?
- What is the connection between the two calculations?

Stem Sentences:

- I know _____ is a multiple of 10 because...
- _____ multiplied by 10 is equal to _____.
- _____ is 10 times the size of _____.
- There are _____ tens in _____.
- _____ x _____ ones is equal to _____ ones, so _____ x _____ tens is equal to _____ tens.
- _____ ÷ _____ is equal to _____, so _____ tens ÷ is equal to _____ tens.

Key Vocabulary:

10s
times table
multiples
greater
place value
ten frame
Gattegno chart
zero
multiplication
division
2-digit
before
after
tens
multiply
divide
same
different
equal
times the size
scaling
base 10
commutative

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
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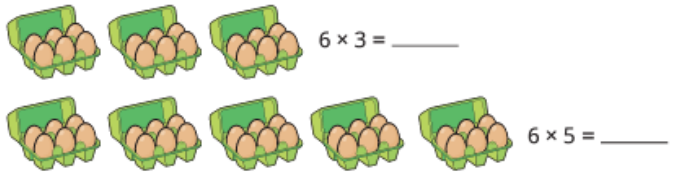
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

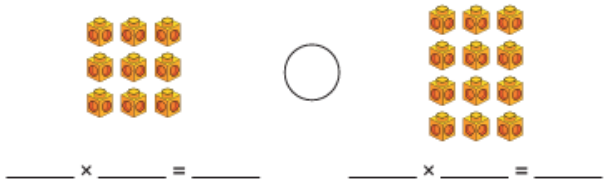
Complete the number sentences to match the pictures.



Write > or < to complete the statement.

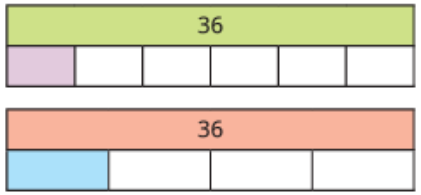
6 × 3 ◯ 6 × 5

Complete the number sentences and write <, > or = to compare the arrays.

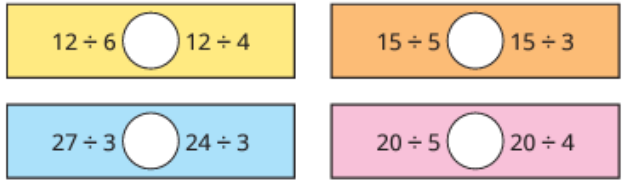


_____ × _____ = _____ _____ × _____ = _____

How do the bar models show that 36 ÷ 6 < 36 ÷ 4?



Draw bar models to compare the pairs of calculations.



Key Questions:

- What number sentences are shown by the array?
- What is the same and what is different about 8 x 3 and 8 x 4?
- Which digit represents the size of the group?
- Which digit refers to the number of groups?
- What happens if you increase/decrease the number of groups?
- What happens if you increase/decrease the size of the groups?
- Do you need to complete the calculation to compare them?

Write <, > or = to compare the multiplications.

8 × 3 ◯ 7 × 4 8 × 2 ◯ 6 × 4

80 × 3 ◯ 70 × 4 8 × 20 ◯ 6 × 40

Stem Sentences:

- _____ lots of _____ is greater than _____ lots of _____.
- _____ lots of _____ is less than _____ lots of _____
- I know that _____ is greater because....

Key Vocabulary:

multiplication
base 10
arrays
number sentence
symbols
greater than
less than
equal to
division
same
different
digit
groups
increase
decrease
compare

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
6. Link multiplication and division.
7. Divide a 2-digit number by a 1 digit number – no exchange.
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

Complete the number sentences.

Use the place value chart to help you.

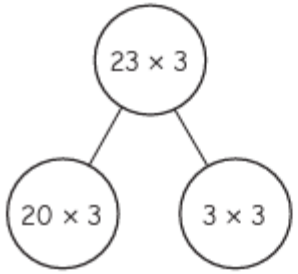
3 tens × 2 = _____ tens

2 ones × 2 = _____ ones

_____ + _____ = _____

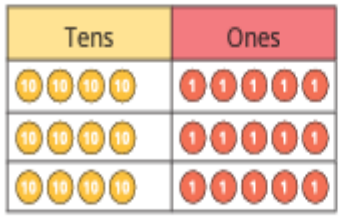
32 × 2 = _____

Ron has used a part-whole model to multiply 23 by 3



20 × 3 = 60
3 × 3 = 9
23 × 3 = 69

Use the place value chart and counters to work out 45 × 3



4 tens × 3 = _____ tens

5 ones × 3 = _____ ones

_____ + _____ = _____

45 × 3 = _____

Key Questions:

- How can you partition a 2-digit number into tens and ones?
- What is the product of the tens and the single digit?
- What is the product of the ones and the single digit?
- What do you need to do to find the final answer?
- What do you do if you have ten or more ones?

Complete the workings.

▶ 64 × 3

= ___ tens × 3 + ___ ones × 3

= ___ + ___

= ___

▶ 24 × 8

= 20 × 8 + 4 × 8

= ___ + ___

= ___

Stem Sentences:

- _____ tens and _____ ones multiplied by _____ is equal to _____ tens multiplied by _____ and _____ ones multiplied by _____.
- _____ tens multiplied by _____ is equal to _____ ones multiplied by _____ is equal to _____ multiplied by _____ _____ is equal to _____.
- _____ x _____ = _____ tens x _____ + _____ x _____.
- _____ ones is _____ tens and _____ ones.

Key Vocabulary:

multiplying
2-digit
1-digit
calculation
exchange
partitioning
expanded method
tens
ones
product
base 10
place value
part-whole
number sentence
single digit
equal to

Maths – Multiplication and Division B

YEAR 3

Small Steps:

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8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

What multiplication and division facts does the array show?

_____ × _____ = _____

_____ × _____ = _____

_____ ÷ _____ = _____

_____ ÷ _____ = _____

What multiplication and division facts does the array show?

_____ × _____ = _____

_____ × _____ = _____

_____ ÷ _____ = _____

_____ ÷ _____ = _____

What is the same and what is different about these arrays?

Fill in the missing numbers.

- 2 × 6 = _____
- 3 × 8 = _____
- _____ = 5 × 3

2 × 60 = _____ 3 × _____ = 240 150 = 5 × _____

Key Questions:

- What is the same and what is different about the two calculations?
- How can you show the calculation using place value counters/base 10?
- How is multiplying by 10's different from multiplying by 1s?
- What division facts do you know by using the fact _____ x _____ = _____?

Tiny is working out 60 ÷ 3

I know 6 ones ÷ 3 is equal to 2 ones.
So 6 tens ÷ 3 is equal to 2 tens.
60 ÷ 3 = 20

Use Tiny's method to work out the divisions.

80 ÷ 4	90 ÷ 3	60 ÷ 2	70 ÷ 7

Write <, > or = to compare the statements.

8 ÷ 2	◯	80 ÷ 2
80 ÷ 2	◯	80 ÷ 4
60 × 3	◯	60 ÷ 3
4 × 80	◯	8 × 40

Key Vocabulary:

multiplication
division
tens
representations
ones

Stem Sentences:

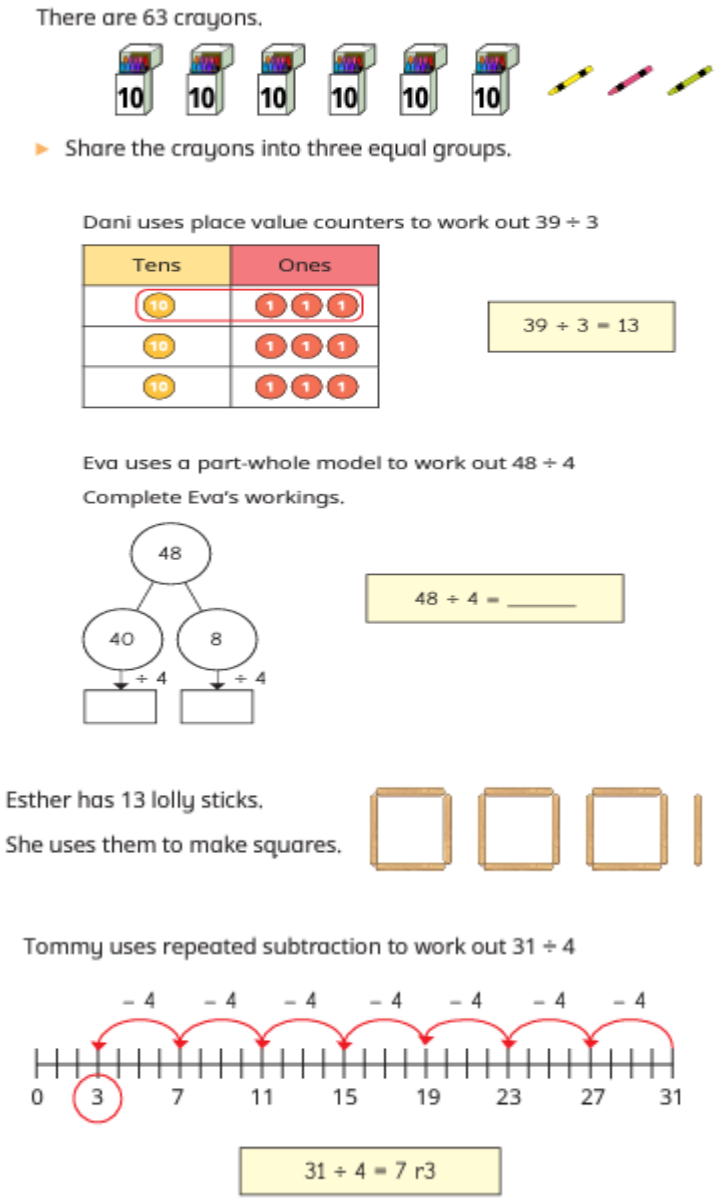
- _____ x _____ ones is equal to _____ ones, so _____ x _____ tens is equal to _____ tens.
- _____ ÷ _____ is equal to _____, so _____ tens ÷ _____ is equal to _____ tens.

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
6. Link multiplication and division.
7. Divide a 2-digit number by a 1 digit number – no exchange.
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?



Key Questions:

- What is _____ partitioned into tens and ones?
- What is _____ shared into _____ equal groups?
- How can the place value counters help you divide _____ by _____?
- How can you use the part-whole model to work out the division?
- What is _____ divided by _____?
- How can you flexibly partition _____ so that the tens and ones are both multiples of the number you are dividing by?
- Do you need to exchange any tens for ones?
- Is there a remainder?
- How do you know _____ divided by _____ will have a remainder?
- Can a remainder ever be greater than the number you are dividing by?

Stem Sentences:

- _____ partitioned into tens and ones is _____ tens and _____ ones.
- _____ divided by _____ is equal to _____.
- _____ can be partitioned into _____ and _____, as these numbers are both multiples of _____.
- There are _____ groups of _____.
- There are _____ remaining.
- So _____ ÷ _____ = _____ r_____

Key Vocabulary:

times-tables
division facts
2-digit
1-digit
partitioning
tens
ones
sharing
equal
groups
dividing
part-whole model
exchanging
flexible partitioning
multiples
repeated subtraction
remainder
notation

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
6. Link multiplication and division.
7. Divide a 2-digit number by a 1 digit number – no exchange.
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

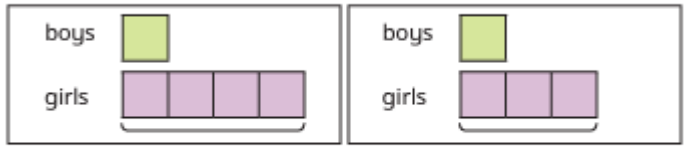
Complete the sentences to describe the fruit.

There are _____ bananas.

There are _____ strawberries.

There are _____ times as many strawberries as bananas.

In a playground, there are 3 times as many girls as boys.

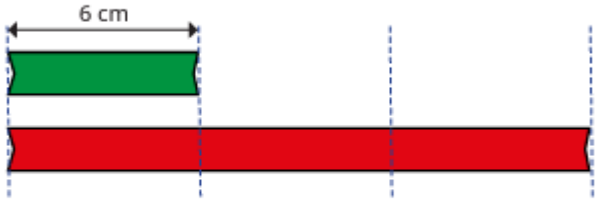


Which bar model shows the number of boys and girls?

Explain your choice.

The green ribbon is 6 cm long.

The red ribbon is 3 times as long as the green ribbon.



How long is the red ribbon?

Complete the number sentence.

6 cm × _____ = _____ cm

Key Questions:

- What number is 10 times the size of ____?
- What number is ____ times the size of ____?
- What length is ____ times as long as ____?
- What time is ____ times as long as ____?
- Which is the larger object? How many times larger is it?
- How can you show the problem as a bar model?

Annie has some green and pink counters.

- There are twice as many green counters as pink counters.
- There are 18 counters altogether.

How many green counters are there?

Dani, Amir and Jack are baking.

- Dani needs 40 g of butter.
- Amir needs 3 times as much butter as Dani.
- Jack needs twice as much butter as Dani.

How much butter do they need altogether?

Stem Sentences:

- _____ is _____ times the length of _____.
- _____ multiplied by _____ is equal to _____.
- _____ times the size of _____ is _____.

Key Vocabulary:

multiplication
scaling
repeated addition
...as many
times the size
comparing
ratio
scales
place value
column
value
bar models
twice as long as
length
larger

Maths – Multiplication and Division B

YEAR 3

Small Steps:

1. Multiples of 10.
2. Related calculations.
3. Reasoning about multiplication.
4. Multiply a 2-digit number by a 1-digit number – no exchange.
5. Multiply a 2-digit number by a 1-digit number – with exchange.
6. Link multiplication and division.
7. Divide a 2-digit number by a 1 digit number – no exchange.
8. Divide a 2-digit number by a 1-digit number – flexible partitioning.
9. Divide a 2-digit number by a 1 digit number – with remainders.
10. Scaling.
11. How many ways?

Huan has three T-shirts and four pairs of shorts.

Complete the table to show how many different outfits he can make.

T-shirt	Shorts
white	blue
white	white
white	spotty
white	stripy

Alex has four shape cards and two digit cards.

She chooses a shape and a digit.

Use a table to find all the different ways that she can do this.

How many different ways can you find?

How do you know that you have found them all?

Aisha is choosing a snack and a drink.

How many possible combinations are there?

Key Questions:

- How can you show the possibilities in a table?
- In what order should you list the possibilities?
- Starting with ____, how many combinations can you make?
- How do you know you have found all the ways?
- How many combinations are there if you have ____ and ____?

Ron has three hats and two scarves.

He chooses a hat and a scarf.

List all the possible combinations he can wear.

Use a multiplication to work out the number of combinations.

How many combinations are there if Ron buys four more scarves?

Stem Sentences:

- For every ____, there are ____.
- There are ____ x ____ = ____ possibilities altogether.
- For each ____, there are ____ choices of ____.
- There are ____ ways altogether.
- I know that I have found them all because…

Key Vocabulary:

problems
combinations
combining
groups
different
multiplication
total
possibilities
altogether

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
6. Fractions and scales.
7. Fractions on a number line.
8. Count in fractions on a number line.
9. Equivalent fractions on a number line.
10. Equivalent fractions as bar models.

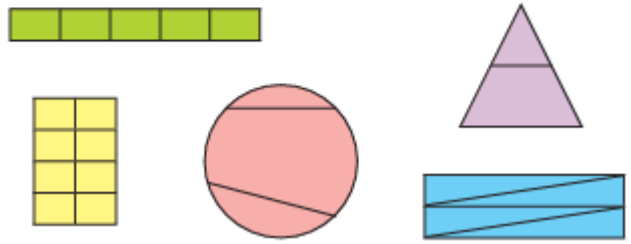
Give children a map of Europe. Tell them that Europe is the whole. Ask children to identify the parts and get them to answer using the stem sentence.

Europe is the whole. _____ is a part of the whole.

Tommy is identifying fractions.

To find a fraction, I need to split the whole into equal parts.

Which shapes have been split into equal parts?



Which shapes show $\frac{1}{4}$?

How do you know?

Find another way to show $\frac{1}{4}$

Tiny is looking at these bar models.

One part of each bar is shaded. They all show the same fraction.

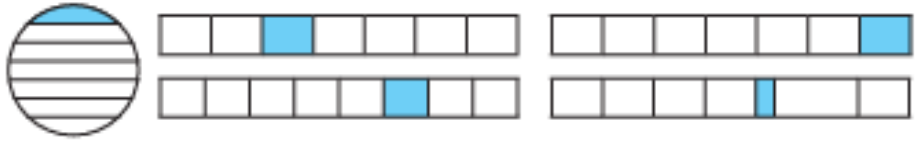
Do you agree with Tiny?

Explain your answer.

Key Questions:

- Is the diagram split into equal parts? How many equal parts are there?
- How many parts are shaded?
- What is the denominator of the fractions? How do you know?
- Why is the denominator of this fraction _____?
- Can you draw a different diagram to show the same fraction?
- If the shape has not been divided equally, can you find a fraction?

Which shapes have $\frac{1}{7}$ shaded?



Key Vocabulary:

denominators
unit fractions
halves
quarters
thirds
fractions
whole
divide
equal parts

Stem Sentences:

- The shape is split into ____ equal parts.
- The denominator is _____.
- The fraction that is shaded is 1/?

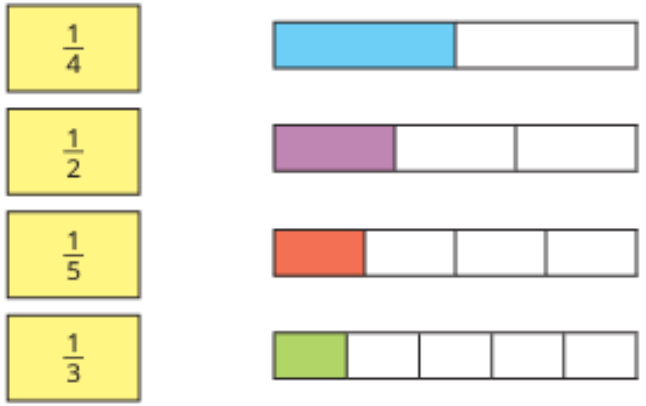
Maths – Fractions A

YEAR 3

Small Steps:

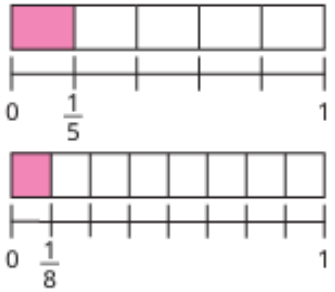
1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
6. Fractions and scales.
7. Fractions on a number line.
8. Count in fractions on a number line.
9. Equivalent fractions on a number line.
10. Equivalent fractions as bar models.

Match the fractions to the bar models.



Write <, > or = to compare the fractions.

Write < or > to compare the fractions.



Write each set of fractions in order, starting with the smallest fraction.

1/6	1/8	1/2	1/5	1/7

1/5	1/50	1/10	1/2	1/100

Key Questions:

- What is the same and what is different about comparing fractions and comparing whole numbers?
- What is the denominator of the fraction? What is the numerator?
- Which is the greater/smaller denominator? Which is the greater/smaller fraction?
- What do you notice about the denominators and the order of the fractions? Why does this happen?
- Is ¼ greater than 1/10? Can you draw a diagram to show this?

Huan has ordered some fractions, but one of them is in the wrong place.

1/5	1/6	1/4	1/10	1/15

Which fraction is in the wrong place?

How do you know?

Stem Sentences:

- The denominator is _____ because...
- The numerator is _____ because...
- When the numerators are the same, then the ____ the denominator, the _____ the fraction.

Key Vocabulary:

denominators
compare
order
non-unit fractions
unit fractions
part-whole
equal parts
whole
diagrams
bar models
numerators
same
greater
smaller

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
6. Fractions and scales.
7. Fractions on a number line.
8. Count in fractions on a number line.
9. Equivalent fractions on a number line.
10. Equivalent fractions as bar models.

Stem Sentences:

- There are ____ equal parts.
- So the denominator is ____.
- _____ of the equal parts are shaded.
- So the numerator is ____.
- The fraction shaded is _____.

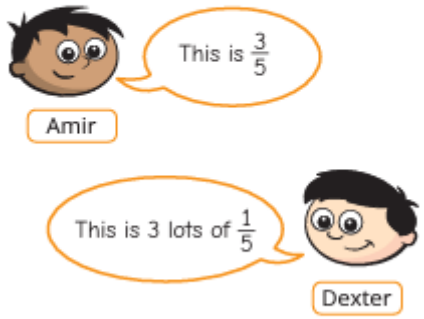
- How many equal parts has the bar model been split into?
- How many equal parts of the bar model are shaded?
- What is the numerator?

  What is the denominator?

What fraction of each bar model is shaded?

How do you know?

Amir and Dexter are looking at a bar model.



Who is correct?

Explain your answer.

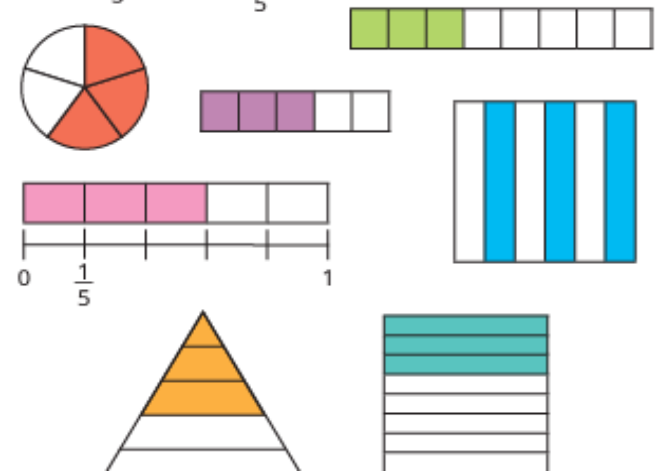
Key Questions:

- How many equal parts is the whole split into?
- How many equal parts are shaded/circled?
- How do you know what the denominator/numerator is?
- Where can you see the denominator in the diagram? Where can you see the numerator?
- Can you draw a diagram/bar model to represent the fraction?
- What is the difference between a unit fraction and a non-unit fraction?

Draw bar models to show each fraction.

$\frac{2}{3}$ $\frac{4}{5}$ $\frac{7}{10}$

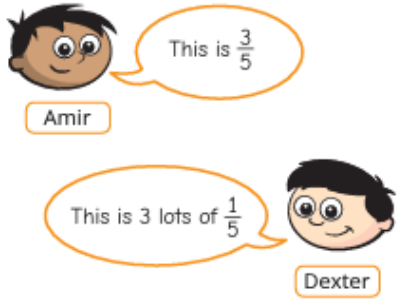
Which diagrams show $\frac{3}{5}$?



Key Vocabulary:

numerator
unit fractions
non-unit fractions
quantity
number line
bar model
denominator
equal parts
whole
shaded
difference

Amir and Dexter are looking at a bar model.



Who is correct?

Explain your answer.

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
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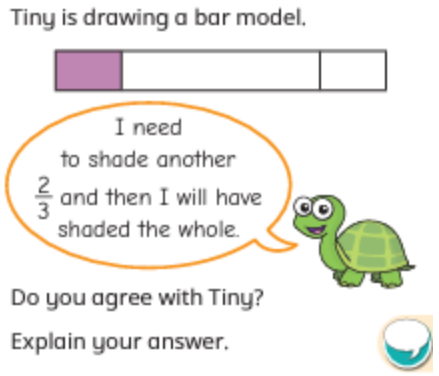
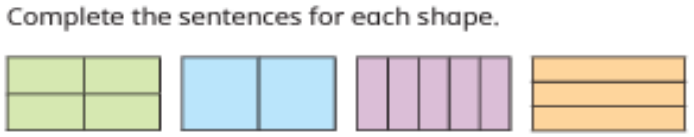
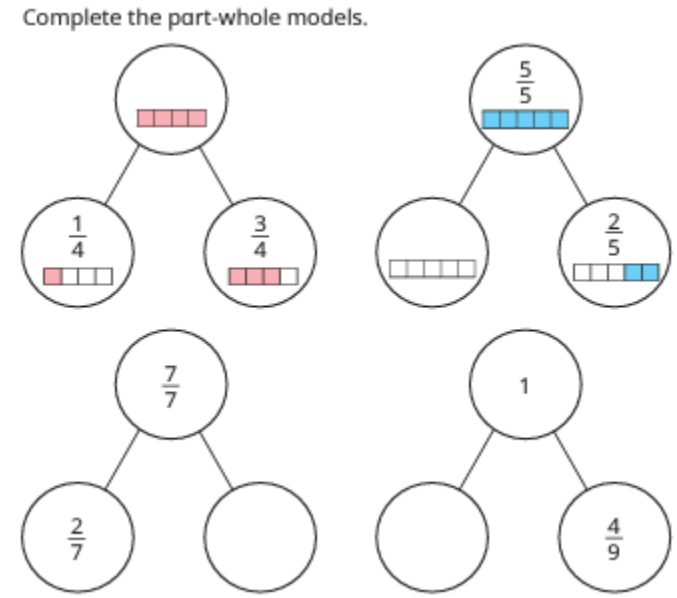




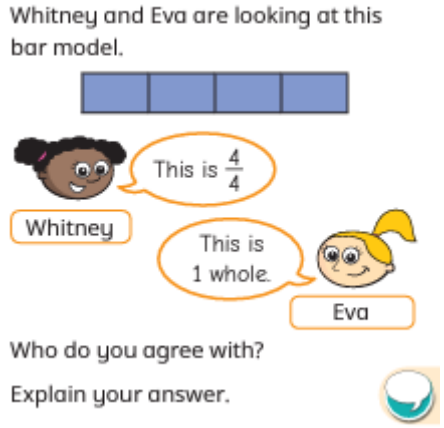


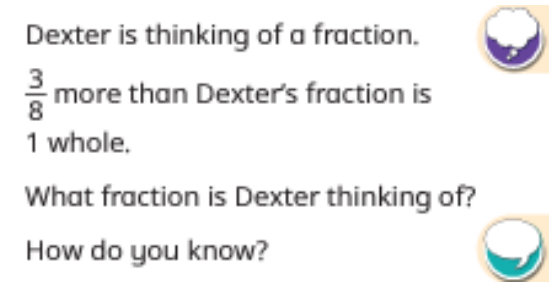
Key Questions:

- Is the whole split into equal parts?
- How many equal parts has the whole been split into?
- What fraction is shaded?
- How many more parts do you need to shade to make 1 whole?
- What do you notice about the two numerators?
- What do you notice about the numerator and the denominator when the whole is shaded?

Key Vocabulary:

whole
fractions
diagrams
representations
numerator
equal to
denominator
equivalent





Stem Sentences:

- The whole is split into ____ equal parts.
- _____ of the parts are shaded.
- I need to shade ____ more parts to make the whole.
- When the numerator is equal to the denominator, the fraction is equal to ____.

Maths – Fractions A

YEAR 3

Small Steps:

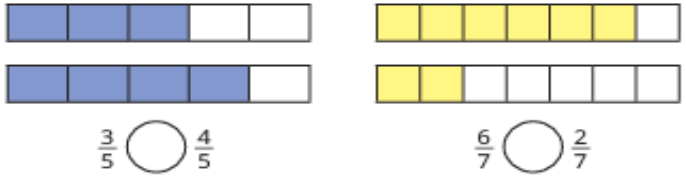
1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
6. Fractions and scales.
7. Fractions on a number line.
8. Count in fractions on a number line.
9. Equivalent fractions on a number line.
10. Equivalent fractions as bar models.

Write **greater** or **less** to complete the sentences.

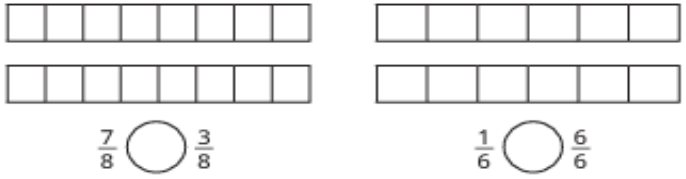
$\frac{1}{4}$ is _____ than $\frac{3}{4}$

$\frac{3}{4}$ is _____ than $\frac{1}{4}$

Write <, > or = to compare the fractions.



$\frac{3}{5}$ ◯ $\frac{4}{5}$ $\frac{6}{7}$ ◯ $\frac{2}{7}$



$\frac{7}{8}$ ◯ $\frac{3}{8}$ $\frac{1}{6}$ ◯ $\frac{6}{6}$

Key Questions:

- Are the numerators the same?
- Are the denominators the same?
- If the denominators are the same, how can you compare the fractions?
- Which fraction is greater? How do you know?
- Which fraction is smaller? How do you know?
- What patterns did you spot when you ordered the fractions?

Write < or > to compare the fractions.

$\frac{3}{10}$ ◯ $\frac{7}{10}$ $\frac{5}{6}$ ◯ $\frac{4}{6}$ $\frac{0}{5}$ ◯ $\frac{3}{5}$

$\frac{8}{9}$ ◯ $\frac{1}{9}$ $\frac{5}{23}$ ◯ $\frac{1}{23}$ $\frac{5}{7}$ ◯ 1

Alex is ordering fractions.

She has spilt ink on her work.

$\frac{2}{7} < \frac{\square}{7} < 1$

What could the missing numerator be?

What could the missing numerator **not** be?

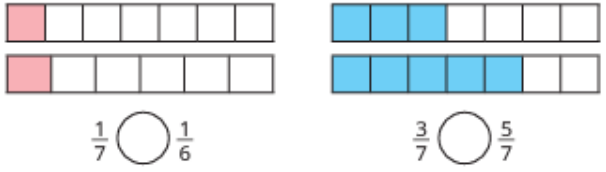
Explain your answers.

Write each set of fractions in order, starting with the smallest.

$\frac{7}{7}$ $\frac{6}{7}$ $\frac{1}{7}$ $\frac{5}{7}$ $\frac{4}{7}$

$\frac{4}{9}$ $\frac{7}{9}$ $\frac{2}{9}$ 1 $\frac{8}{9}$

Use the bar models to compare the fractions.



$\frac{1}{7}$ ◯ $\frac{1}{6}$ $\frac{3}{7}$ ◯ $\frac{5}{7}$

What is the same? What is different?

Stem Sentences:

- When fractions have the same denominator, the _____ the numerator, the _____ the fraction.
- _____ is greater than _____ because...
- _____ is less than _____ because...

Key Vocabulary:

comparing
ordering
unit fractions
non-unit fractions
denominator
bar model
representations
fractions
greater
numerator
smaller
same
patterns

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
6. Fractions and scales.
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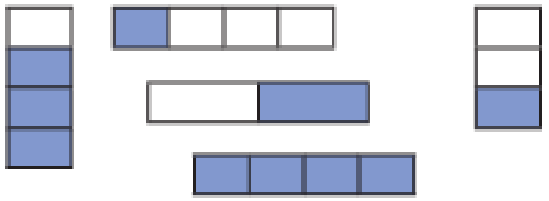
8. Count in fractions on a number line.
9. Equivalent fractions on a number line.
10. Equivalent fractions as bar models.

What fraction of each shape is shaded?



Whitney is using different metre sticks to mea
lengths of lines.

What fraction of a metre is each line?

The weighing scales measure up to 1 kg.

What fraction of a kilogram is shown on each scale?

Write the masses in order, starting with the greatest mass.

$\frac{1}{3}$ kg $\frac{3}{3}$ kg $\frac{1}{2}$ kg $\frac{1}{4}$ kg

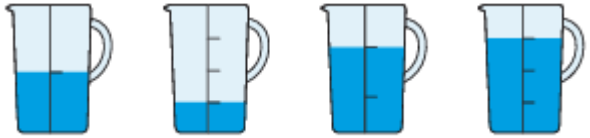
Key Questions:

- Where does the scale start/end?
- How many equal parts are there? What is the denominator of the fraction?
- How far along the scale is the arrow/water? What is the numerator of the fraction?
- What are you measuring? What unit is it measured in?
- Does the height of the container/scale matter?

How many equal parts has each jug's scale been split into?

Each jug has a capacity of 1 litre.

What fraction of a litre of water is in each jug?



Key Vocabulary:

measure
scales
numerators
denominators
equal parts
fraction
mass
volume
length
quarters
halves
thirds
whole
metre
litre
kilogram

Stem Sentences:

- The scale has been split into _____equal parts.
- The arrow is pointing to/water is at the ____ mark.
- The fraction shown is _____.

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
5. Compare and order non-unit fractions.
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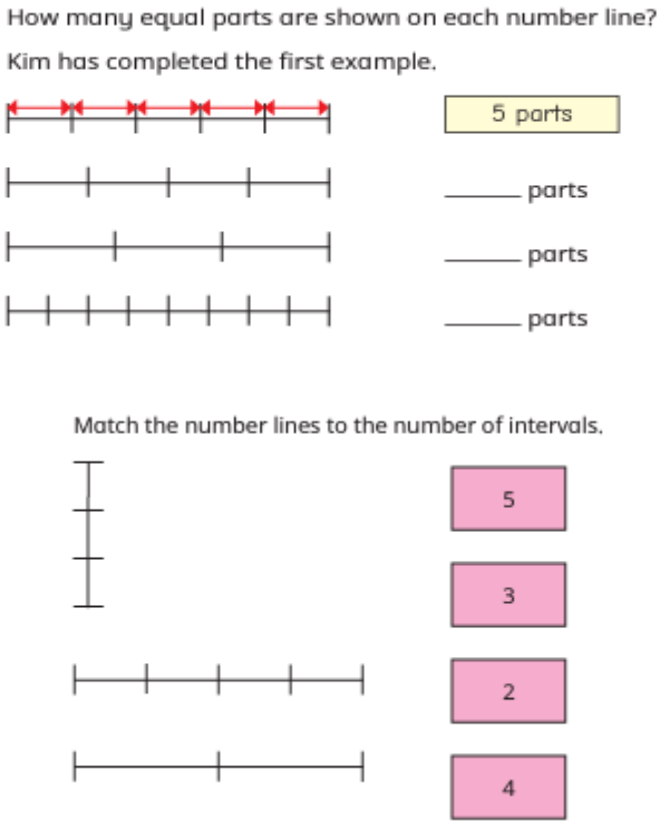

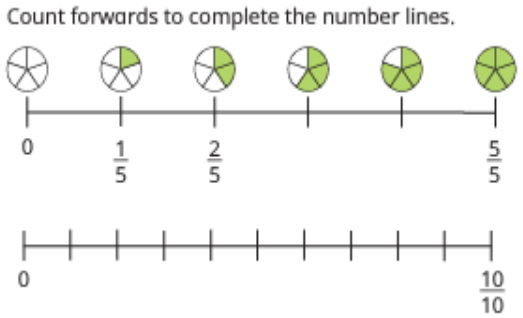

Key Questions:

- What is an interval?
- Are all the intervals equal?
- How do you count the number of intervals?
- Why can you not just count the markers on the number line?
- What is the same and what is different about the number line?
- What fraction of the whole number line is each interval worth?
- When making intervals on a number line, where is a helpful place to start?
- What fraction comes next in the count? How do you know?
- What fraction comes before ____? How do you know?
- What do you notice about the end of each number line?
- What is the denominator going to be? How do you know?
- Which fraction is easiest/hardest to estimate? Why?

Key Vocabulary:

fractions
number line
bar models
equal parts
intervals
label
unit fraction
forwards
backwards
division
numerator
denominator
estimate
positions
right/left
halfway

Stem Sentences:

- The number line has been split into ____ equal parts.
- Each interval is worth 1/?
- The number line starts at ____ and ends at _____.
- This means the number line is counting in ____s.
- ____ is greater/less than ½ so ____ will be to the right/left of halfway on the number line.

Maths – Fractions A

YEAR 3

Small Steps:

1. Understand the denominators of unit fractions.
2. Compare and order unit fractions.
3. Understand the numerators of non-unit fractions.
4. Understand the whole.
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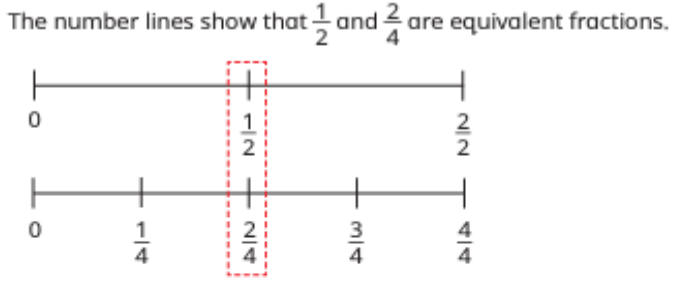
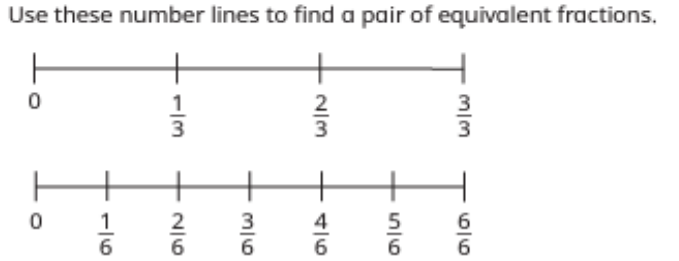
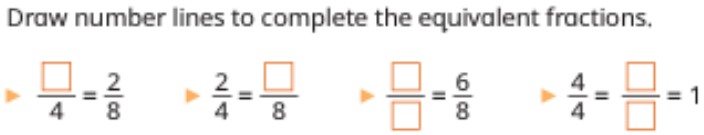
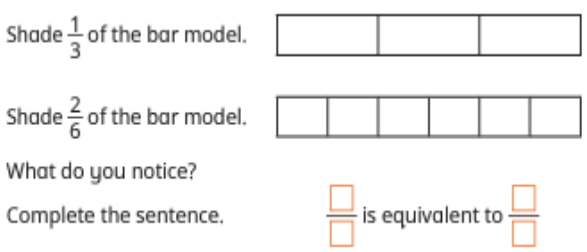
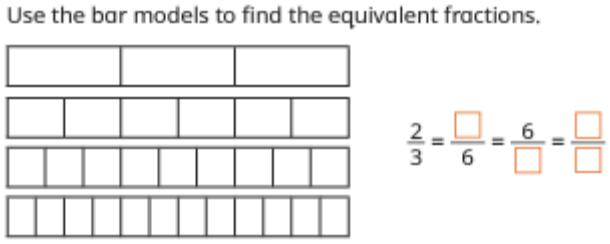










Key Questions:

- What other word does "equivalent" remind you of?
- What are equivalent fractions?
- What are the start and end numbers of each number line?
- Which fractions are in line with ____?
- How do you know ____ is equivalent to ____?
- When drawing number lines/bar models to show equivalent fractions, why is it important that your number lines are equal in length?
- What do you notice about the numerators and denominators of the fraction that are equivalent to ½, 1/3, and ¼?
- What does each whole bar model show?
- How many equal parts has the bar model been split into? What fraction does this show?
- How can splitting each part of the bar model into the same number of smaller parts help you to find equivalent fractions?

Stem Sentences:

- The number lines start at _____ and end at _____.
- I know _____ is equivalent to _____ because...
- The bar model is split into ____ equal parts.
- The bar model shows ____.

Key Vocabulary:

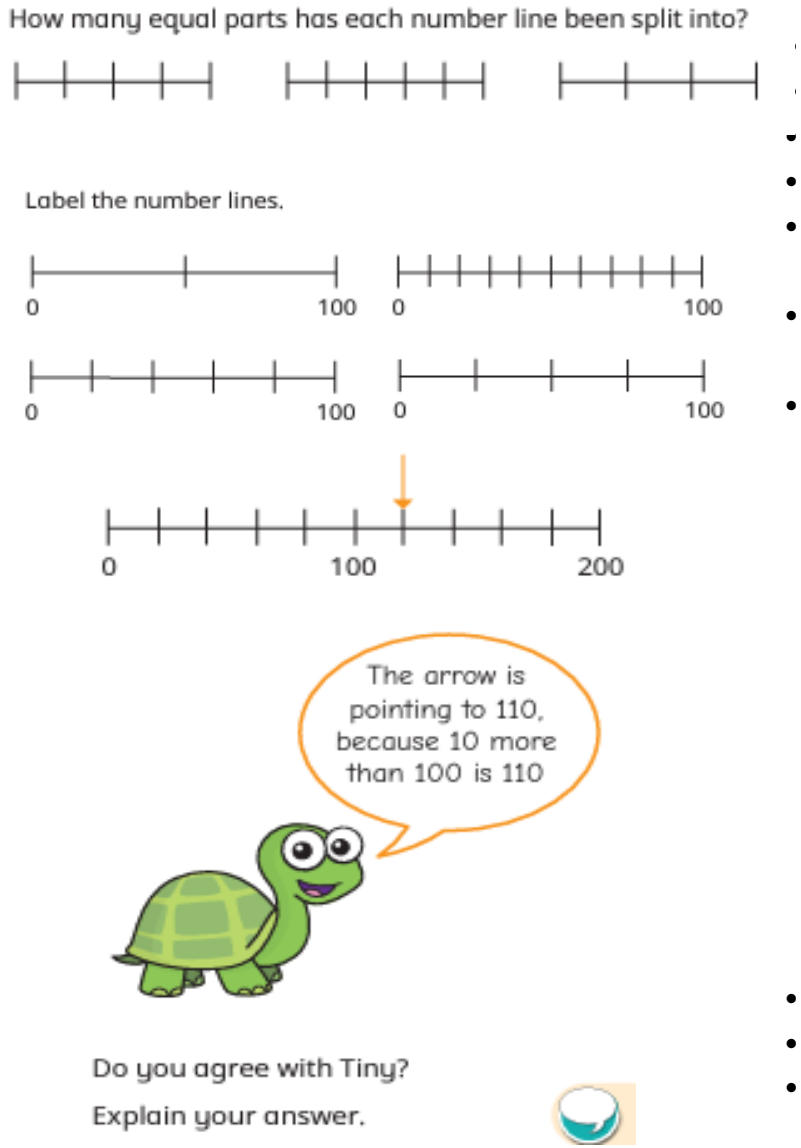
equivalent
fractions
comparing
multiple
number lines
equal in value
numerator
denominator
start/end points
bar model
divided
amount

Maths – Mass and Capacity

YEAR 3

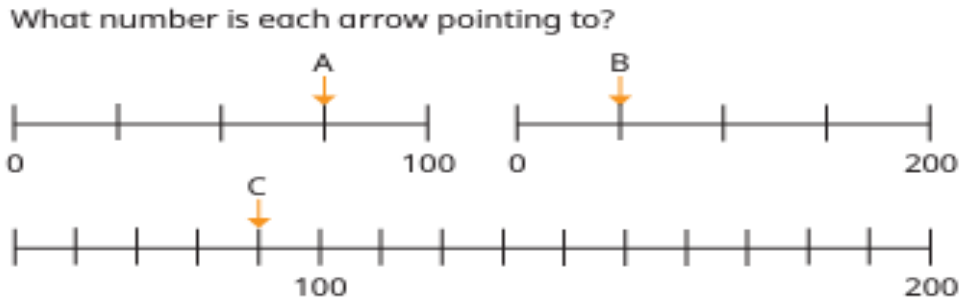
Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.



Key Questions:

- What is the value at the start of the number line?
- What is the value at the end of the number line?
- How many equal parts is the number line split into?
- What is the value of each interval on the number line?
- What is the value of each part if 100 is divided into ____ equal parts.
- What is the same/different about these two number lines?
- What does this mark on the number line represent? How do you know?



Key Vocabulary:

grams
kilograms
mass
capacity
scales
measurements
dividing
hundred
equal parts
number lines
intervals
multiples

Stem Sentences:

- If 100 is shared into ___ equal parts, then each part is worth ____.
- The number line is counting up in ____s.
- When counting up in ____s, the ____ interval is ____.

Maths – Mass and Capacity

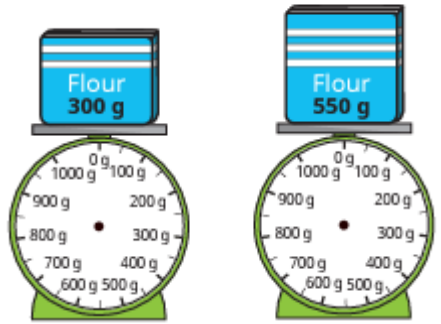
YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

What is the mass of each object?

Draw arrows on the scales to show the mass of each box of flour.



Complete the sentence for each arrow.

Arrow _____ is pointing to _____ g.

What fraction of a kilogram is each arrow pointing to?

What mass is each arrow pointing to?

Give your answers in kilograms and grams.

Key Questions:

- What does mass mean?
- What units do you use to measure mass?
- What is the start/end value on the scale?
- How many equal intervals are there on the scale?
- How do you know what the missing numbers are?
- If the measurement is halfway between two marks, how can you work out what it is?
- What are kilograms and grams? What is the same and what is different about them?
- How many grams are there in 1kg?
- How many grams is half/quarter of a kilogram?
- If a mass is between two whole kilograms, how can you work out the exact mass?

Stem Sentences:

- The start of the scale is _____ grams.
- The end of the scale is _____ grams.
- There are _____ intervals.
- The scale is counting up in _____s.
- The mass of the _____ is _____ grams.
- The mass is between _____kg and _____kg.
- Each interval is worth _____g.
- The mass is _____ kg and _____g.
- The arrow on the scale is pointing to _____ kg and _____g.
- The object has a mass of _____kg and_____g.

Key Vocabulary:

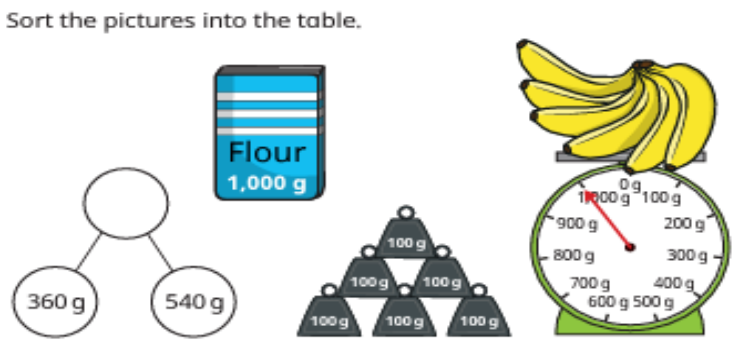
mass
grams
thousands
scales
number lines
intervals
start/end point
units
measure
equal
halfway
kilograms
fractions
equivalent
divided
same/different
half
quarter

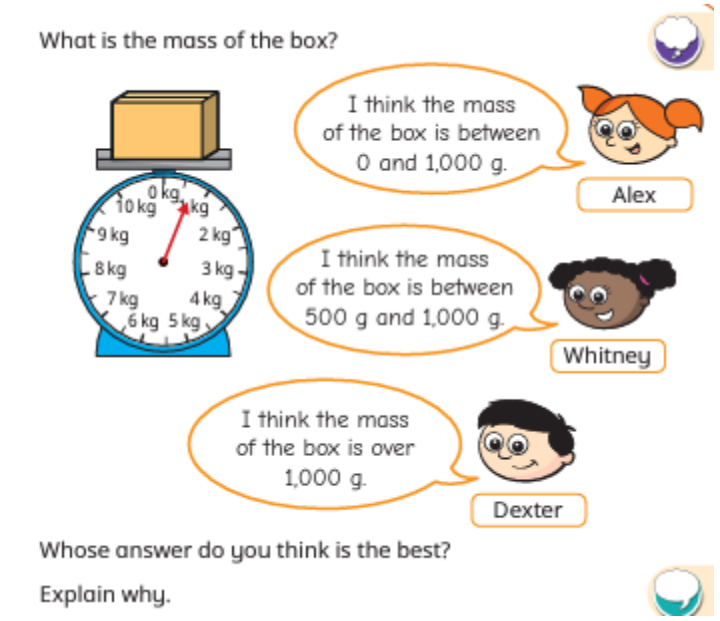
Maths – Mass and Capacity

YEAR 3

Small Steps:

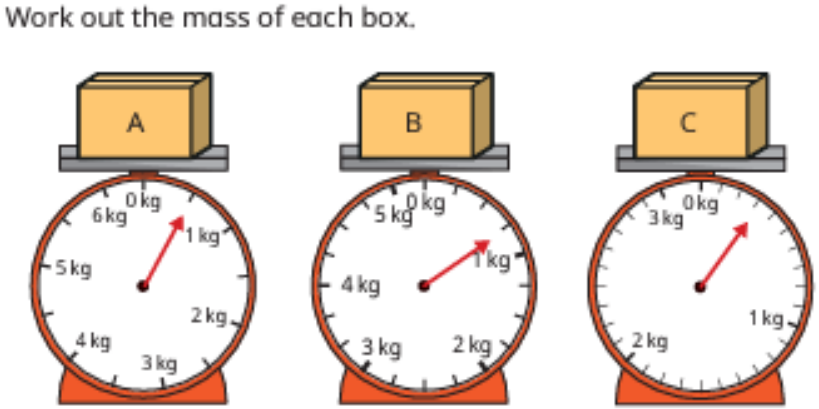
1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.





Key Questions:

- How many grams are there in a kilogram?
- How many grams are there in half a kilogram?
- How many grams are there in one quarter of a kilogram?
- If a kilogram is split into ___ equal parts, how many grams is each part worth?
- What is ____ equivalent to?
- How many more grams are needed to make 1kg?



Stem Sentences:

- _____g is equivalent to _____kg.
- _____g + _____ = 1,000g = 1kg.
- I need _____ more grams to make a kilogram.
- This mass is/is not equivalent to 1 kilogram because....

Key Vocabulary:

measure
grams
kilograms
scales
units
thousand
mass
addition
subtraction
amount
fractions
half
quarter
equal parts
worth
equivalent
more

Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

Complete the sentences.

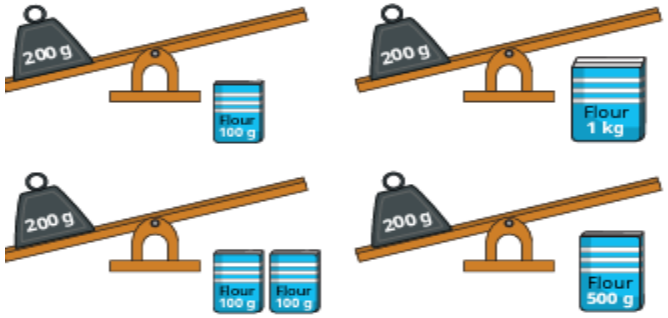
_____ bananas have the same mass as _____ apples.

1 banana has the same mass as _____ apples.

The mass of 1 banana is _____ than the mass of 1 apple.

Rosie puts different amounts of flour onto the scales.

For each scale, say what will happen and why.



Write <, > or = to compare the masses.

500 g ◯ 500 kg		1 kg and 300 g ◯ 3 kg and 300 g	
900 g ◯ 1 kg		1 kg and 300 g ◯ 1 kg and 100 g	
210 g ◯ $\frac{1}{5}$ kg		4 kg and 27 g ◯ 27 kg and 4 g	

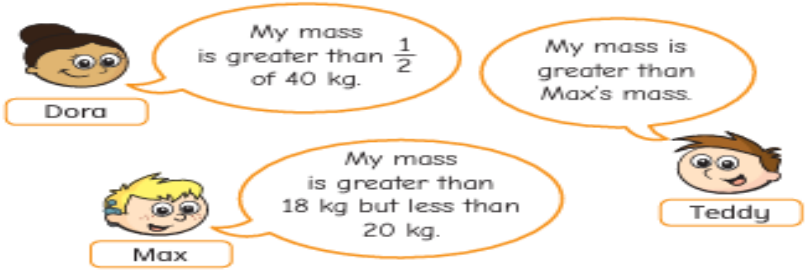
Key Questions:

- Which object is heavier/lighter? How do you know?
- Which is heavier: 1kg or 100g?
- Which is heavier: 1kg and 100g or 1kg and 400g?
- Which is heavier: 500g or 3kg and 100g?
- Which is heavier 600g or ½kg?
- If you know the total mass of two identical items, how can you work out the mass of one of them?
- If 2 _____ have the same mass as 3 _____, which object is heavier?

Here are three masses.

20 kg and 600 g | 20 kg | 18 kg and 500 g

Match each mass to the correct person.



Stem Sentences:

- _____kg is heavier/lighter than _____kg, so _____kg and _____g is heavier/lighter than_____kg and _____g.
- The number of kilograms is the same so I need to compare the _____.
- _____kg and _____g is heavier/lighter than_____kg and _____g.

Key Vocabulary:

compare
masses
grams
kilograms
heavier
lighter
scales
units
measure
hundred
fractions
half
same
equal
total
identical

Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

A jar of cookies has a mass of 800 g.

The empty jar has a mass of 350 g.

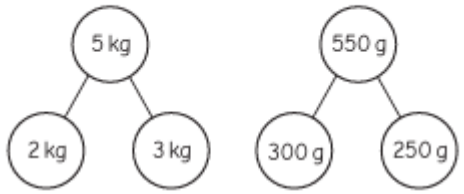
What is the mass of the cookies?

Rosie has 600 g of sweets.

Jack has 1 kg and 200 g of sweets.

What is the total mass of their sweets?

Huan uses part-whole models to add 2 kg 300 g to 3 kg 250 g.



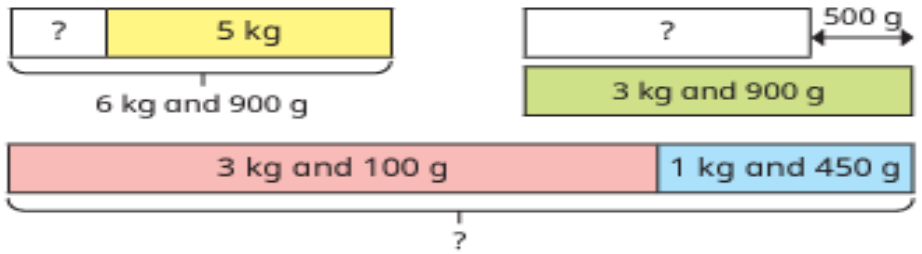
5 kg + 550 g = 5 kg 550 g

Use Huan's method to work out the totals.

3 kg 450 g + 4 kg 200 g

4 kg 105 g + 2 kg 300 g

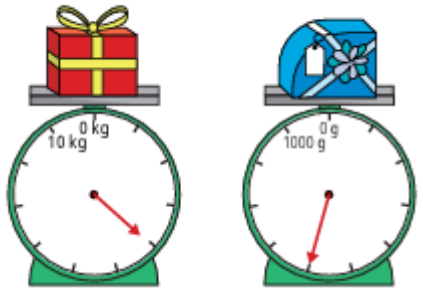
Complete the bar models.



Key Questions:

- How can you add using kilograms and grams?
- Which part did you work with first? Why?
- What method could you use to add ____ to ____?
- What method could you use to subtract ____ from ____?
- How can you show this question using a bar model?
- What objects can you use to help complete this calculation?
- Do you need to add or subtract to answer this question?

What is the total mass of the two presents?



Stem Sentences:

- The total of ____g/kg and____g/kg is ____g/kg.
- The difference between ____g/kg and ____g/kg is ____g/kg.
- ____kg add/subtract ____kg is equal to ____kg.
- ____g add/subtract ____g is equal to ____g.
- The total/different is ____kg ____g.

Key Vocabulary:

mass
add
subtract
kilograms
grams
quantities
partition
separate
parts
thousand
bar model
calculation
total
difference
equal

Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

Label the divisions on the scales of the jugs.

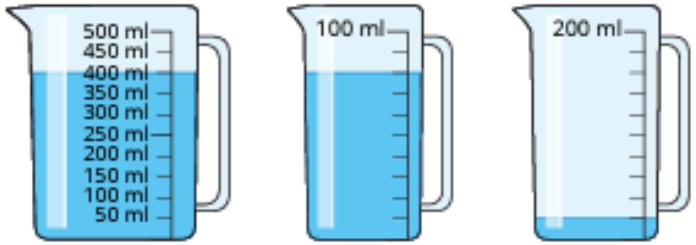
Complete the sentences to help.

The difference between the start and end values on the scale is _____

There are _____ equal intervals.

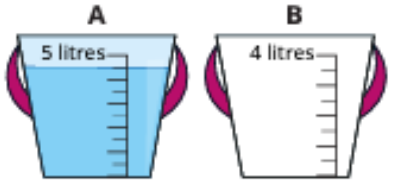
_____ ÷ _____ = _____

What is the volume of water in each jug?



Half of the water from bucket A is poured into bucket B.

Shade bucket B to show where the water will reach.



Key Questions:

- What is the difference between capacity and volume?
- What is the capacity of the container? How do you know?
- What is the difference between the start and end values on the scale?
- How many equal intervals are there?
- What is each interval worth?
- How can you work out halfway between two marks?
- What unit is the volume/capacity measured in?
- How many millilitres are there in 1 litre?
- How many intervals are there between two marks on a scale?

Stem Sentences:

- The scale has been split into ____equal parts, so each mark represents ____ml.
- The water is full to the ____mark, so the volume of water is ____ml.
- The arrow on the scale is pointing to ____ l and ____ml.
- The volume is between ____l and ____l.
- There are ____ intervals.
- Each interval is worth ____ml.
- The volume is ____l and ____ml.

Key Vocabulary:

capacity
volume
liquid
amount
hold
millilitres
measure
greater
estimating
difference
start/end
values
scale
equal
intervals
worth
halfway
unit
litres
thousand

Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
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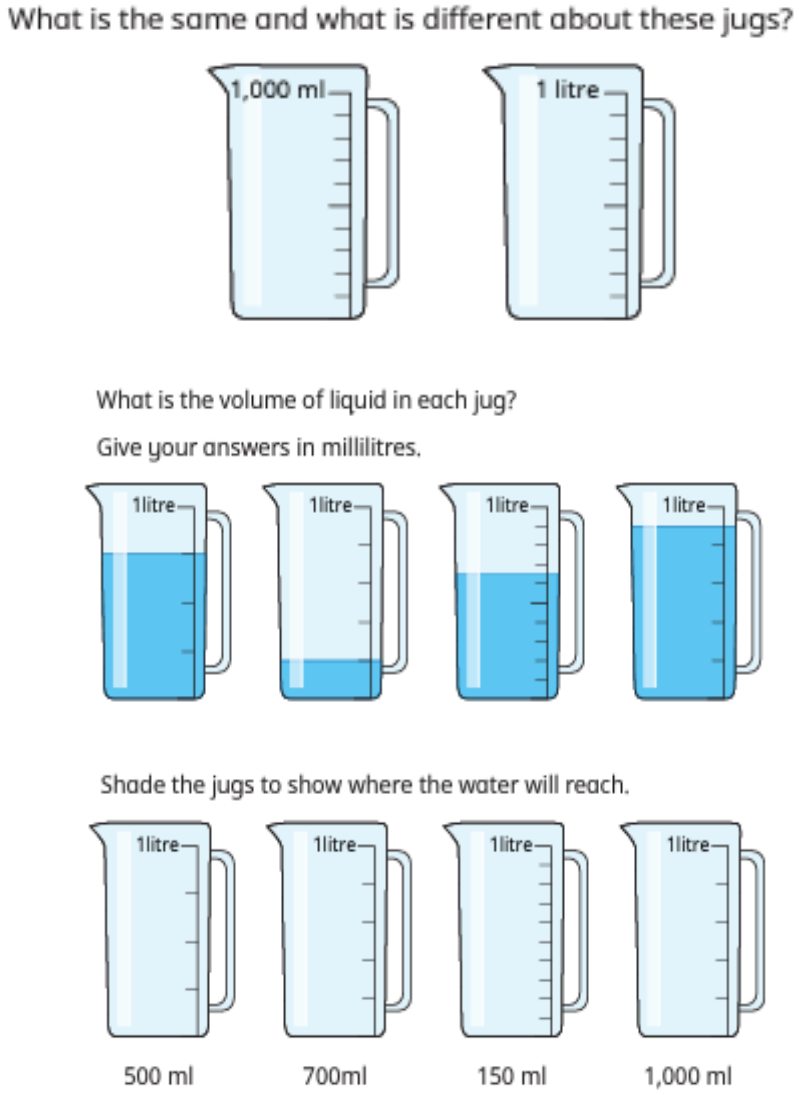


Key Questions:

- How many 100ml containers full of water fill a 1 litre container?
- How many millilitres are equivalent to 1 litre?
- How many equal parts are there?
- What is each interval worth?
- Do you always need to count up the scale to find out how much there is?
- How can you use number bonds to 100 to help?

Complete the number sentences.

- 30 ml + 70 ml = ____ ml
- 45 ml + 55 ml = ____ ml
- 100 ml – 38 ml = ____ ml
- 21 ml + ____ ml = 100 ml
- ____ ml + 340 ml = 1,000 ml
- 300 ml + 700 ml = ____ ml
- 450 ml + 550 ml = ____ ml
- 1,000 ml – 380 ml = ____ ml
- 210 ml + ____ ml = 1,000 ml
- ____ ml + 340 ml = 1 litre

Stem Sentences:

- There are _____ ml in 1 litre.
- _____ml + _____ = 1,000ml = 1 litre.
- I need _____ more millilitres to make 1 litre.
- The capacity/volume is/is not equivalent to 1 litre because...

Key Vocabulary:

capacity
volume
litres
millilitres
scales
units
measure
equivalent
thousand
addition
subtraction
amounts
fractions
half
quarter
containers
equal
parts
interval
worth
number bonds
more

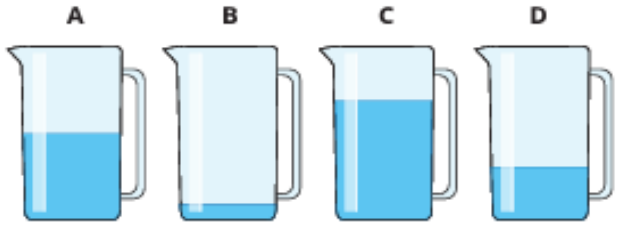
Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

Each container has the same capacity.

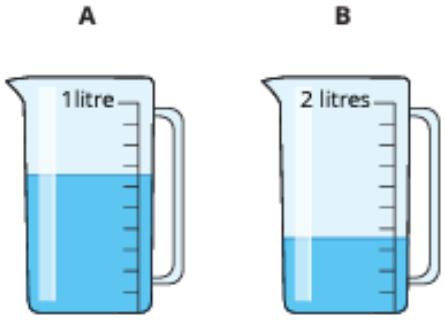


Put the containers in order of the volume of liquid they contain.

Start with the container with the greatest volume.

Is the statement true or false?

The volume of water in jug A is greater than the volume of water in jug B.

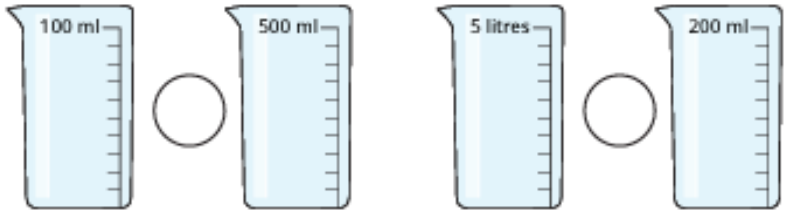


Explain your answer.

Key Questions:

- What is the difference between capacity and volume?
- Which container do you think has the greater capacity? Why?
- Which container do you think has the greater volume of liquid in? why?
- How can you work out the actual capacity of each container?
- What is each interval worth?
- How can you workout halfway between two marks?
- What unit is the volume/capacity measured in?
- How many millilitres are the in ____litres?

Write <, > or = to compare the capacities.



Key Vocabulary:

litres
millilitres
compare
capacity
Volume
estimation
greater
full
nearly full
half full
nearly empty
greater than
less than
symbols
measured
difference
interval
worth
halfway
unit

Stem Sentences:

- The capacity of the first container is ____ than the capacity of the second container because...
- The volume of liquid in the first container is ____ than the volume in the second container because ...
- There are ____millilitres in ____ litre.

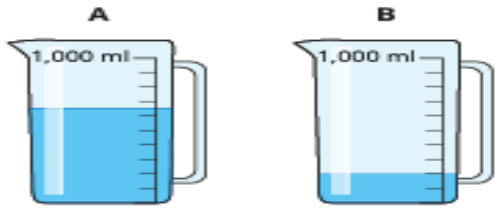
Maths – Mass and Capacity

YEAR 3

Small Steps:

1. Use scales.
2. Measure mass in grams.
3. Measure mass in kilograms and grams.
4. Equivalent masses (kilograms and grams).
5. Compare mass.
6. Add and subtract mass.
7. Measure capacity and volume in millilitres.
8. Measure capacity and volume in litres and millimetres.
9. Equivalent capacities and volumes (litres and millimetres).
10. Compare capacity and volume.
11. Add and subtract capacity and volume.

Whitney has some jugs of water.



She pours all the water from jug A into jug B.

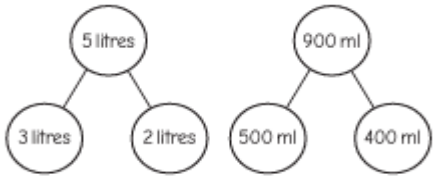
How much water is now in jug B?

Alex has this orange juice in a jug.

She drinks 300 ml.

How much orange juice is left in the jug?

Amir uses part-whole models to add 3 l 500 ml and 2 l 400 ml.



3 litres + 2 litres = 5 litres
500 ml + 400 ml = 900 ml
So the total is 5 litres 900 ml.

Use Amir's method to work out the totals.

1 l 300 ml + 2 l 450 ml	3 l 400 ml + 500 ml
3 l 600 ml + 400 ml	4 l 150 ml + 3 l 800 ml

Key Questions:

- What units are being used? Can you add/subtract them?
- How many litres are there altogether? How many millilitres are there?
- What volume do you need to add to reach 1 litre? How much more liquid is still left to add?
- How could you work out the difference?
- In what order are you going to do the calculations?
- Do you have to do them in a certain order or is there a more efficient method?

Work out the subtractions.

3 l 400 ml – 2 l	10 l 195 ml – 8 ml
10 l 195 ml – 3 l	3 l 400 ml – 400 ml

Stem Sentences:

- _____litres add/subtract _____ litres is equal to ____ litres.
- _____ml add/subtract _____ ml is equal to _____ml.
- So the total/difference is ____l _____ml.

Key Vocabulary:

adding
subtracting
capacity
volume
units
litres
millilitres
part-whole model
thousand
equivalent
whole
altogether
more
difference
order
calculations
method
equal
total

Maths – Length and Perimeter

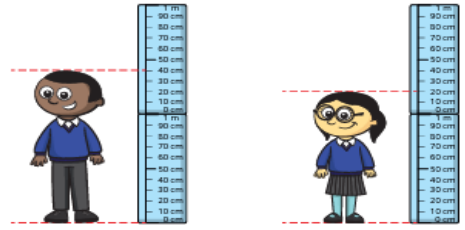
YEAR 3

Small Steps:

1. Measure in metres and centimetres.
2. Measure in millimetres.
3. Measure in centimetres and millimetres.
4. Metres, centimetres and millimetres.
5. Equivalent lengths (metres and centimetres).
6. Equivalent lengths (centimetres and millimetres).
7. Compare lengths.
8. Add lengths.
9. Subtract lengths.
10. What is perimeter?
11. Measure perimeter.
12. Calculate perimeter.

Mo and Annie use metre sticks to measure their height.

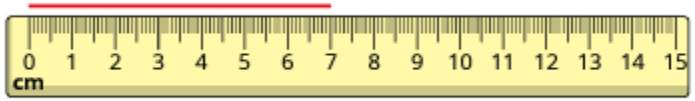
How tall are they?



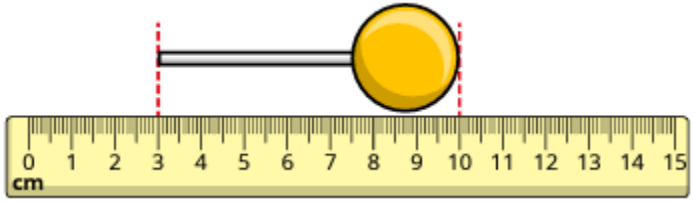
_____ m and _____ cm

_____ m and _____ cm

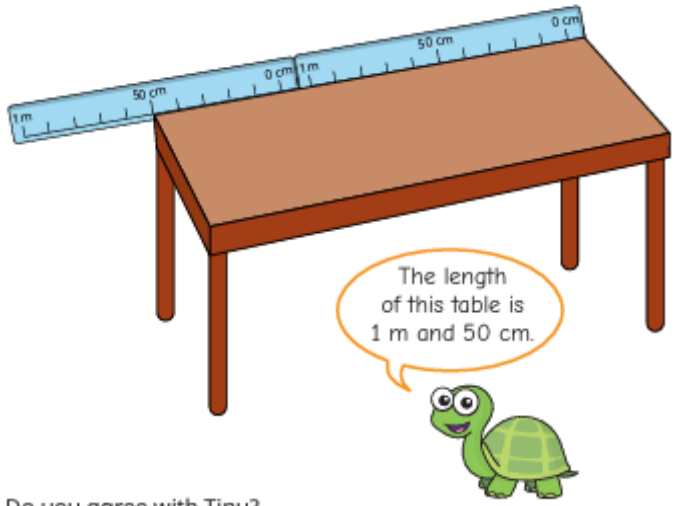
What is the length of the line?



What is the length of the lollipop?



Tiny is measuring the table top.



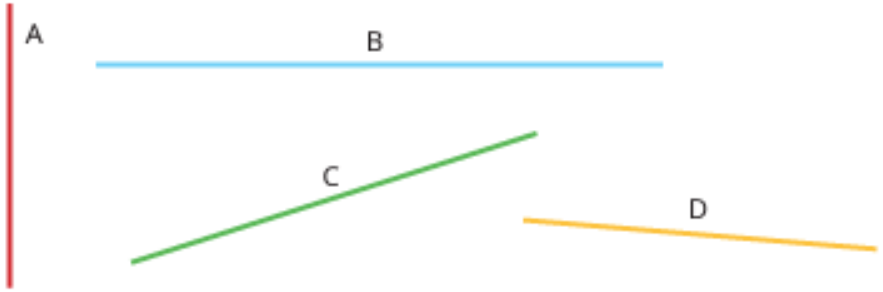
Do you agree with Tiny?

Explain your answer.

Key Questions:

- Where should you start measuring from on your ruler?
- What is the length of ____ in centimetres?
- What is the length of ____ in metres?
- What is the length of ____ in metres and centimetres?
- Would you measure the length of the classroom in centimetres or metres? Why?
- What equipment would you use to measure the length of _____?

Use a ruler to measure the lines.



Stem Sentences:

- The _____ is _____ cm long.
- The _____ is _____ m long.
- The _____ is _____ m and _____ cm long.

Key Vocabulary:

metres
centimetres
length
ruler
unit
measurement
heights
m
cm
tape measure
metre stick
trundle wheel

Maths – Length and Perimeter

YEAR 3

Small Steps:

1. Measure in metres and centimetres.
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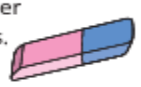
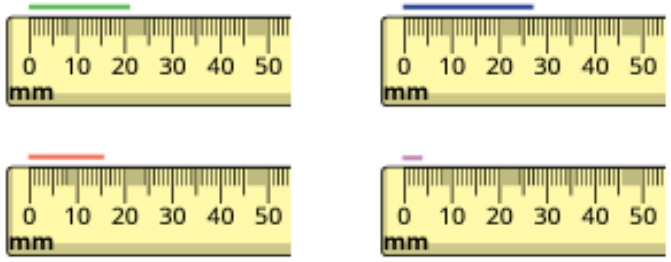
Whitney measures her rubber in millimetres.



My rubber is less than 60 mm. Its length is in the 5 times-table. The digits add up to 9

Work out the length of Whitney's rubber.

What are the lengths of the lines in millimetres?



What lengths are the arrows pointing to?

What are the lengths of the lines in millimetres?

Is the statement true or false?

> A length measured in millimetres is always shorter than a length measured in centimetres.

Talk about it with a partner.

Key Questions:

- Why is it important to start measuring from zero on your ruler?
- How many intervals are there between 0 and 1cm?
- So how many millimetres are there in 1cm?
- Where is the 5mm mark on your ruler?
- What is the same and what is different about measuring a length in centimetres and measuring a length in millimetres?
- What is the length of ____ in millimetres?
- Would you measure the height of the door in millimetres?

Measure these lines to the nearest millimetre.

Stem Sentences:

- The ____ is ____ mm long.
- 1mm is ____ than 1cm.
- 1mm is ____ than 1m.

Key Vocabulary:

millimetres
unit
measurement
smaller
lengths
measure
centimetres
ruler
mm
cm
tens
add
ones

Maths – Length and Perimeter

YEAR 3

Small Steps:

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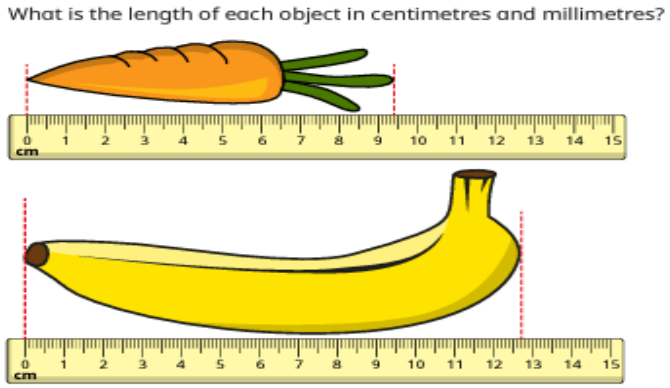
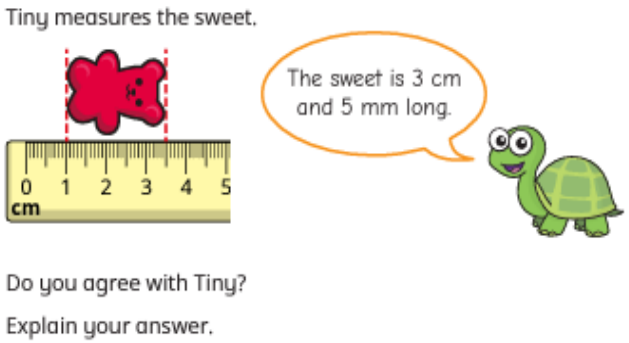
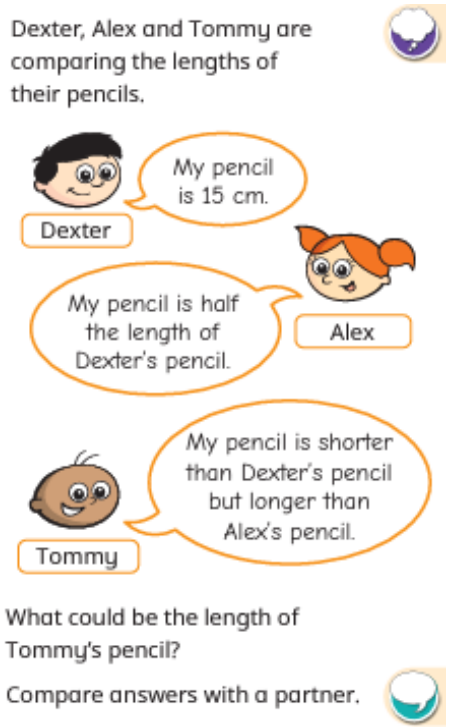
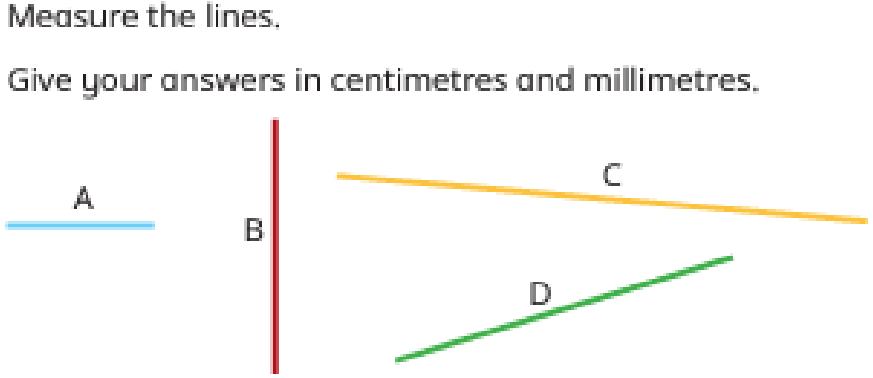






Key Questions:

- Which is greater in length, 1mm or 1cm?
- What are the main things to remember in order to measure accurately using a ruler?
- Is the ____ an exact number of centimetres long?
- How many millimetres past the last centimetre interval does the ____ reach?
- How do you write a length that is not an exact number of centimetres?
- How does the 5mm interval help you to measure the length?



Key Vocabulary:

measure
centimetres
millimetres
ruler
forwards
backwards
accurate
lengths
greater
mm
cm
interval

Stem Sentences:

- ____cm _____ mm = ____cm and _____ mm
- The ____ is ____cm and ____ mm long.

Maths – Length and Perimeter

YEAR 3

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Which unit would you use to measure each item?

Sort the items into the table.

length of a car	length of a pencil
length of a fingernail	length of a garden
length of a playground	height of a water bottle

Metres	Centimetres	Millimetres

Write the lengths in order.

Start with the shortest length.

10 m | 10 mm | 10 cm

Is the statement always true, sometimes true or never true?

A length measured in metres will be longer than a length measured in centimetres.

Explain your answer.

Write <, > or = to compare the lengths.

8 cm ◯ 10 mm

50 mm ◯ 2 m

14 m ◯ 98 cm

3 m and 87 cm ◯ 4 m

6 m and 20 cm ◯ 20 cm and 6 m

14 m and 5 cm ◯ 14 m and 5 mm

Key Questions:

- How many millimetres are there in a centimetre?
- How many centimetres are there in a metre?
- Which is longer, 1m or 1cm?
- Which is shorter, 1cm or 1mm?
- Which is longer, 3m or 60cm?
- Which is shorter 4cm or 20mm?
- What unit would you use to measure the length of ____?

Use the digit cards to complete the statement.

1 2 3 4 5

1 m and 34 cm < ☐ ☐ ☐ cm < 2 m

Find all the possible answers.

Stem Sentences:

- ____m is shorter/longer than ____cm.
- ____mm is shorter/longer than ____cm.
- There are ____ mm in 1cm.
- There are ____ cm in 1m.

Key Vocabulary:

compare
units
measurement
metres
measure
longer
distance
centimetres
millimetres
equipment
length
comparisons
m
cm
mm
longer
shorter

Maths – Length and Perimeter

YEAR 3

Small Steps:

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Use the bar models to complete the sentences.

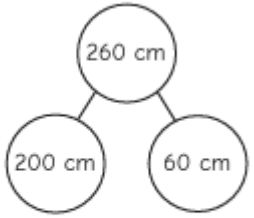
1 m	1 m	1 m	1 m
100 cm			

4 m = _____ cm

100 cm	100 cm	100 cm

_____ m = 300 cm

Esther uses the a part-whole model to find equivalent lengths.



200 cm = 2 m
260 cm = 2 m and 60 cm

Use Esther's method to convert the lengths into metres and centimetres.

120 cm	125 cm	367 cm	542 cm

Which measurement is the odd one out?

500 mm	50 cm
$\frac{1}{2}$ m	500 cm

Explain your choice.

Complete the bar models.

230 m	
m	cm

cm	
15 cm	1 m

198 cm	
m	cm

cm	
3 m	75 cm

Key Questions:

- How many centimetres are there in 1m/1cm?
- How can you work out how many centimetres/millimetres there are in 6m/4cm?
- What is ____ centimetres in metres?
- How many centimetres/millimetres are there in ____ m/cm and ____ cm/mm?
- How can you partition 430cm/47mm to help you to write the measurement in metres and centimetres/centimetres and millimetres?
- How many centimetres/millimetres are there in ½m/ ½cm ?
- So how many centimetres are there in 4 ½ metres?
- How do you know ___mm and ____ cm are equivalent?

Key Vocabulary:

metres
m
equivalent
cm
convert
multiples
hundreds
partition
measurement
centimetres
lengths
part-whole model
bar model
number line
common fractions
multiplying
dividing

Stem Sentences:

- There are ____cm in 1m.
- 1m = 100cm, so ____ m = ____ cm.
- I can partition ____ cm into ____cm and _____cm.
- There are 100cm in 1m, so ____ cm = ____ m and _____ cm.
- ½ m = ____cm.
- 1cm = 10mm, so ____ mm = ____ cm
- 1cm = 10mm, so ____cm = _____mm
- _____mm = _____mm + _____mm = _____cm and ____mm
- _____ cm and ____ mm = _____mm + _____mm = _____mm

Maths – Length and Perimeter

YEAR 3

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12. Calculate perimeter.

Write <, > or = to compare the lengths.

101 cm ◯ 1 m 10 cm

80 mm ◯ 8 cm

90 cm ◯ 90 mm

500 mm ◯ 1 m 50 cm

- Jack is comparing 34 mm and 3 cm 6 mm.

  Complete the sentences.

  - 3 cm 6 mm = _____ mm
  - 34 mm is _____ than _____ mm.

  Is there another way to compare the measurements?

- Amir and Dora measure their heights.
  - Amir's height is 127 cm.
  - Dora's height is 1 m and 30 cm.

  Write **taller** or **shorter** to complete the sentences.

  - Amir is _____ than Dora.
  - Dora is _____ than Amir.

Brett has put some lengths in order from shortest to longest.

170 mm
74 cm 7 mm
$1\frac{1}{2}$ m

Fill in the missing measurement.

Find three possible answers.

Key Questions:

- How can you compare lengths given in different units?
- Why does finding equivalent lengths with the same unit make it easier to compare lengths?
- Does it matter which unit of measurement you use to compare?
- Is the unit of measurement or the size of the number more important?
- How many mm/cm are there in cm/mm?

Write the lengths in order.

Start with the shortest length.

230 cm	750 mm	2 m 25 cm
2 m	1 m 75 cm	170 cm

Stem Sentences:

- _____ m _____cm is equal to _____cm.
- _____cm is _____ than _____cm, so the greater length is _____cm.
- _____cm is equal to _____ mm.
- _____mm is _____ than _____mm, so the greater length is _____ mm.

Key Vocabulary:

compare
order
lengths
convert
measurements
measuring
symbols
millimetres
centimetre
metre
shorter
longer
taller
height
equal to

Maths – Length and Perimeter

YEAR 3

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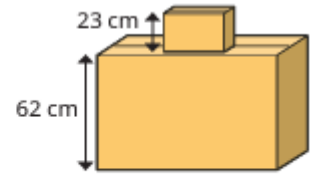
Dora builds this tower out of boxes.



- How tall is Dora's tower?

Dora puts a third box on the tower.

The box is 30 cm tall.

- How tall is Dora's tower now?

Can you write your answer another way?

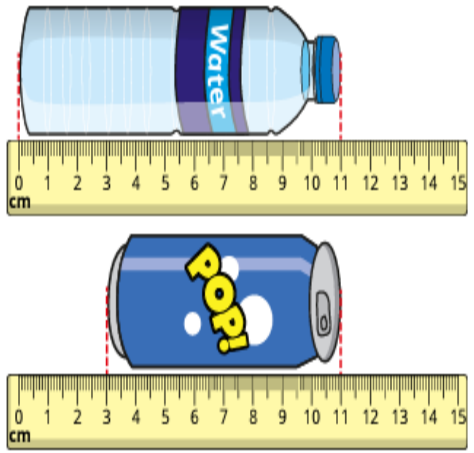
Complete the bar models.

78 mm	
70 mm	mm

365 cm	
cm	65 mm

What is the difference in length between the bottle of water and the can of fizzy drink?

Write your answer in centimetres.



Sam, Ron and Esther take part in a standing jump competition.

Complete the table to show their total jump distances.

Child	Jump 1	Jump 2	Jump 3	Total
Sam	90 cm	65 cm	1 m 10 cm	
Ron	85 cm	85 cm	80 cm	
Esther	75 cm	1 m	1 m 25 cm	

Who jumped the greatest total distance?

Key Questions:

- How many centimetres are there in 1m?
- How many centimetres are there in ____m and ____cm?
- How many millimetres are there in 1cm?
- Why is it important the lengths have the same unit of measurement before adding/subtracting them?
- Which unit of measurement will you use to find equivalent lengths before adding/subtracting them? Why?
- How did you find the total length?
- Does it matter in which order you add the lengths?
- What is the difference in length between the two objects?
- How can you check that you have the correct answer?

Key Vocabulary:

add/adding
lengths
measured
measurement
units
equivalent
strategies
exchanges
subtracting
whole number
conversions
reduction
difference

Stem Sentences:

- _____cm + _____mm = _____mm + _____mm = _____mm
- _____m + _____cm = _____ cm + _____cm = _____cm.
- I am going to convert all of the units of measurement to _____ because...
- _____ mm/cm = 1cm/1m
- _____ cm - _____mm = _____ mm - _____ mm = _____mm
- _____ m - _____ cm = _____cm - _____cm = _____cm.

Maths – Length and Perimeter

YEAR 3

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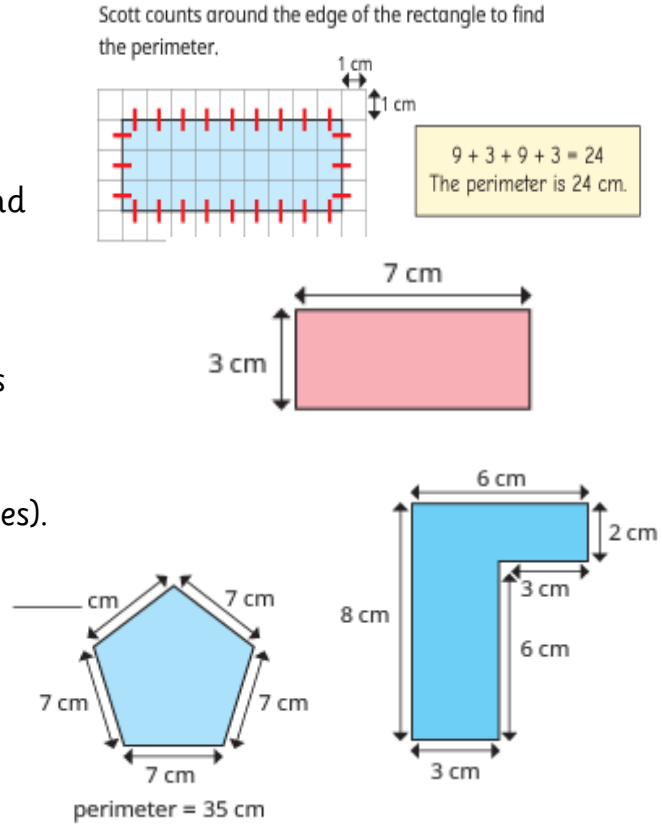

Stem Sentences:

- The perimeter of shape is …
- This shape does/does not have a perimeter because….
- I can find the perimeter of this shape by…
- _____cm + ____cm + _____ cm_____ cm = _____cm.
- Opposite sides of a rectangle are _____.
- The missing side length is _____ cm because…

Key Questions:

- What does perimeter mean?
- When might someone need to find the perimeter in real life?
- Why are you unable to find the perimeter of this shape?
- How would you use your finger to trace the perimeter of this piece of paper?
- Which of the shapes has the greater perimeter?
- How do you know?
- How does the squared grid help you to find the perimeter?
- What equipment is useful for measuring the perimeter of a shape?
- Does start in different places when measuring the perimeter give you a different answer?
- Do you need to measure all sides? How do you know?
- Which method do you prefer, to find the perimeter of a square?
- Can you find the perimeter of a shape with a curved edge? How?
- Are any of the sides equal?
- How can you work out the perimeter of the shape?
- What other method could you use to measure before you can find the perimeter?
- How can you work out the lengths of the sides that are not labelled?
- How many sides do you need to measure before you can find the perimeter?
- Do the lengths need to haver the same unit of measurement? How do you find equivalent lengths?

Key Vocabulary:

perimeter
distance
2-D
open/closed
counting
edges
miscount
measure
sides
centimetres
properties
calculate
equal
double
width
length
add