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#NumeracyBluePrints

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Numeracy BluePrints activities

- Subitize 5 and below
- Show me 5 and below (writing numbers)
- Add 1 and take 1 for 5 and below
- Subitize for 6 – 10
- Show me 6 – 10
- Double patterns
- Writing numbers and number formation 1 – 20
- Story of 4,5,6,7,8 and 9
- Counting backwards and forwards (number line)
- 2 more than/2 less than (number line)
- Add 1 and take 1 between 6 and 10
- Add 2/3 and take 2/3 between 6 and 10
- I wish I had …..

Numeracy BluePrints activities

- Subitize for 10 – 20
- Number bonds to 10 and 20
- Develop counting strategies
- Addition within 10 and 20
- Subtraction within 20
- Represent numbers between 21 - 100
- Number bonds to 50 and 100
- Adding subtracting 10
- 2 digit Addition – bridging 10
- Subtraction involving 2 digits
- Count up in 2s/5s/10s etc(visual learning)
- Multiplication/division

What am I thinking? 100 Square Game

- Is it more than …
- Is it less than ….
- Is it odd/even
- Is it a multiple of …
- Is it divisible by ….
- Is the tens digit a ….
- Is the units(ones) digit a ….
- Does the number round up to … to the nearest 10
- Are both digits the same
- Do both digits add to ….
- Is it a square number?

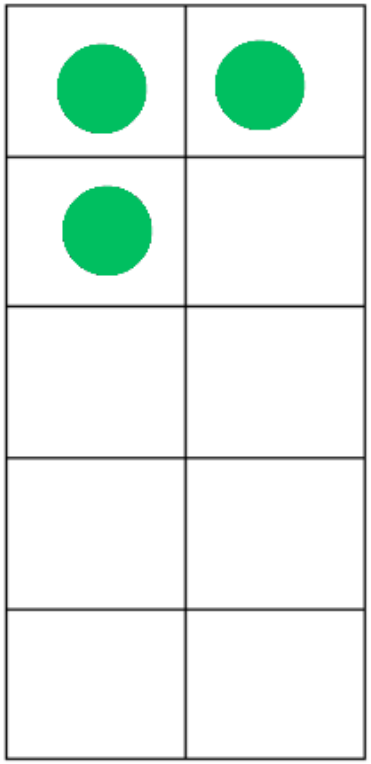
Numeracy BluePrints activities

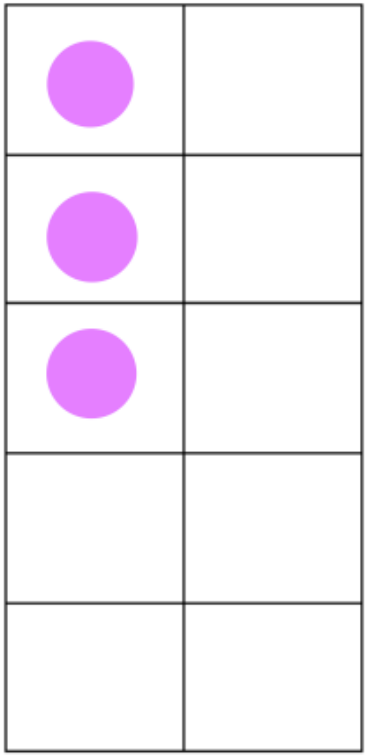
- Estimation with the empty number line
- Fractions/decimals
- Scaffold thinking skills/problem "**solving**" through bar modelling
- Plus many more: creative teaching ideas
- Fractions
- Percentages
- Decimals
- Area
- Perimeter
- Probability
- Prime numbers

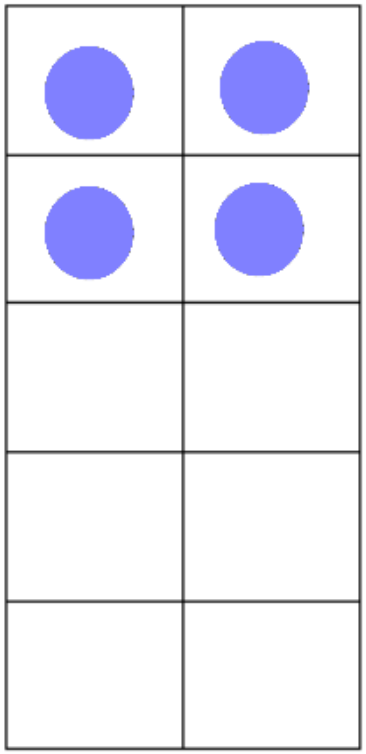
Numeracy BluePrints Activities

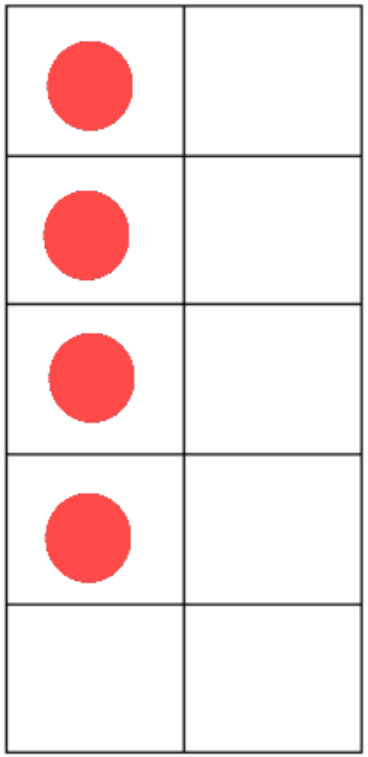
Activity : Subitizing (5 and below)

Show random images of 5 dots and below for 2 seconds. Ask learners how many dots they saw and how did they see the dots.





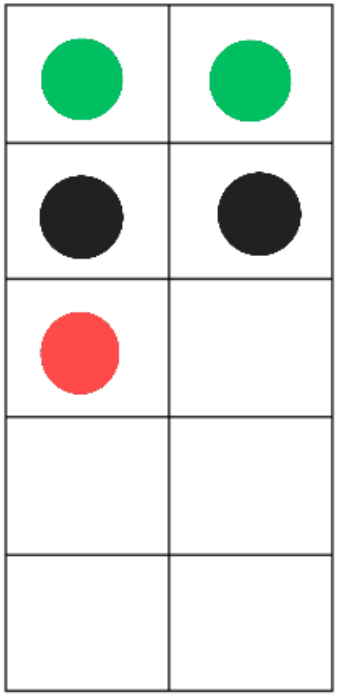


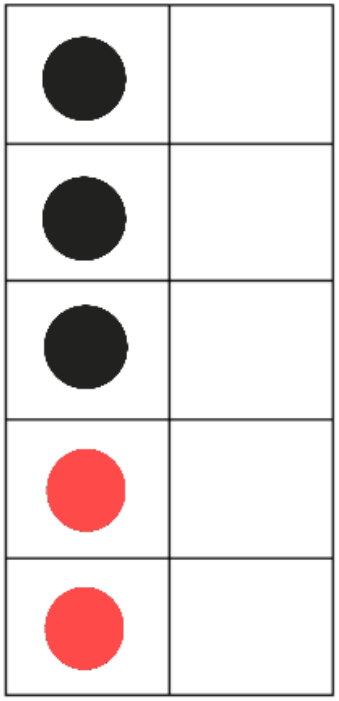


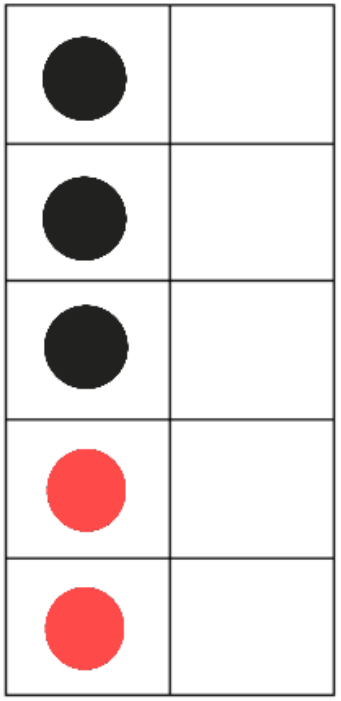
Numeracy BluePrints Activities

Activity : Show me 5 and below

Ask learners to show you how they would draw 5 dots and below then talk about how they see the dots eg 5 = 2 + 2 + 1 or 5 = 3 + 2 or 5 = 4 + 1





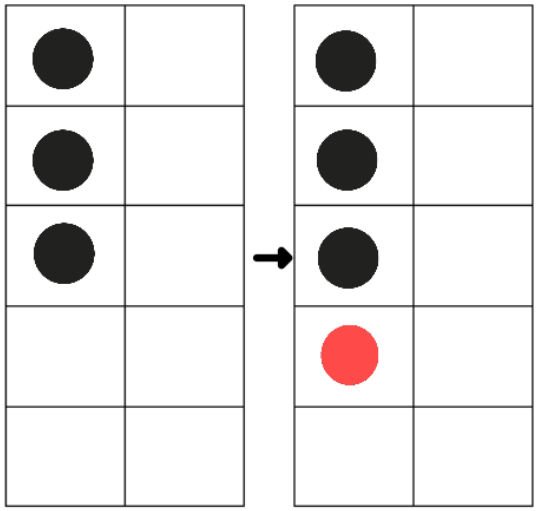


Numeracy BluePrints Activities

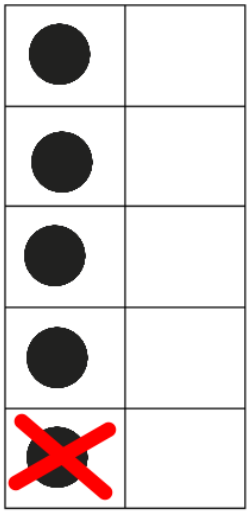
Activity : Add 1 or take away 1 for 5 and below

Ask learners to draw a number of dots and then add or remove to see how many dots there are afterwards. Write some number sentences.

3 + 1 = 4



5 – 1 = 4

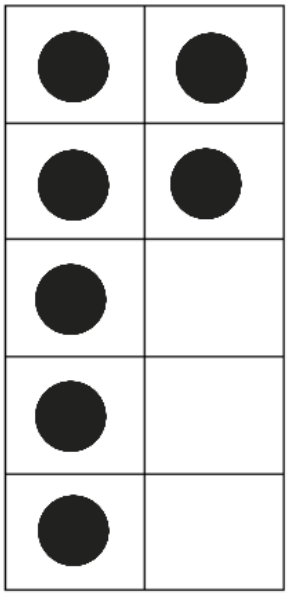


Numeracy BluePrints Activities

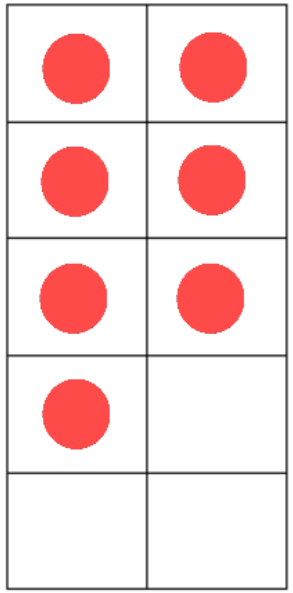
Activity : Subitizing (between 6 - 10)

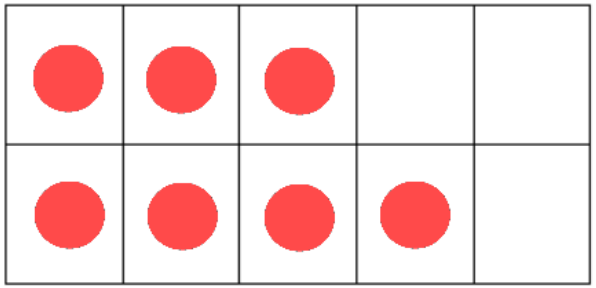
Show random images between 6 – 10 dots for 2 seconds and write some number sentences. Vary images between base 5 and double format. Turn sideways etc.

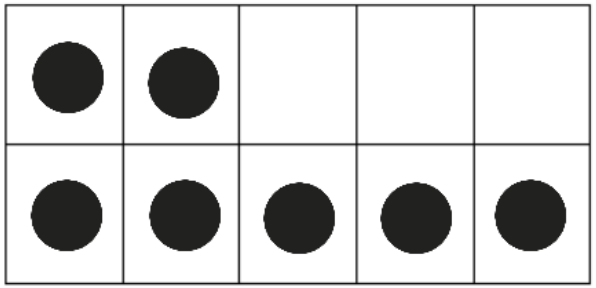
5 + 2 = 7
2 + 2 + 3



6 + 1 = 7
4 + 3 = 7
3 + 3 + 1 = 7





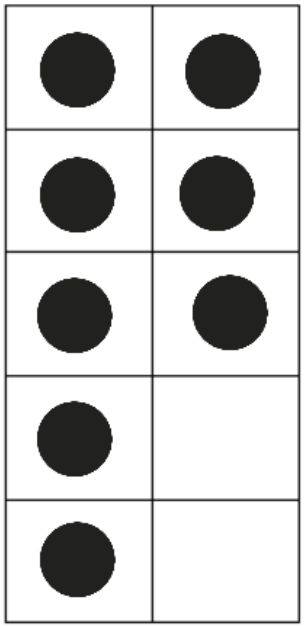


Numeracy BluePrints Activities

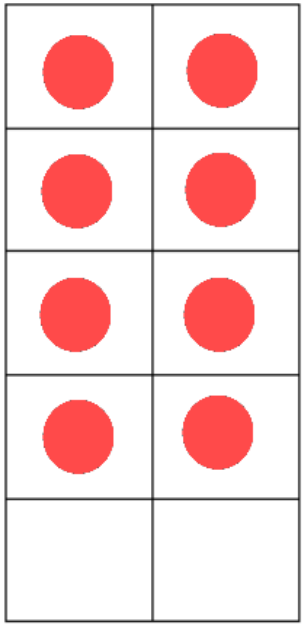
Activity : Show me a number of dots

Ask learners to show you how they would display between 6 – 10 dots and write some number sentences. Discuss the different answers

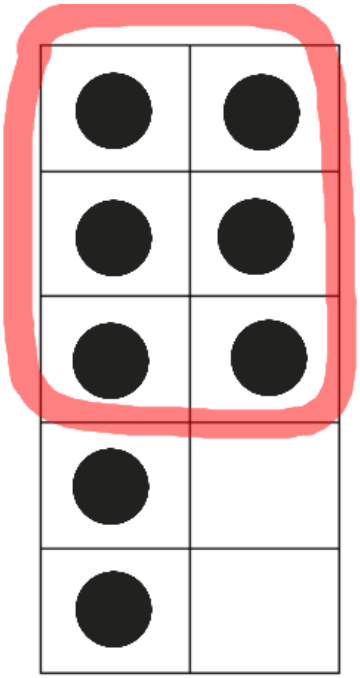
5 + 3 = 8



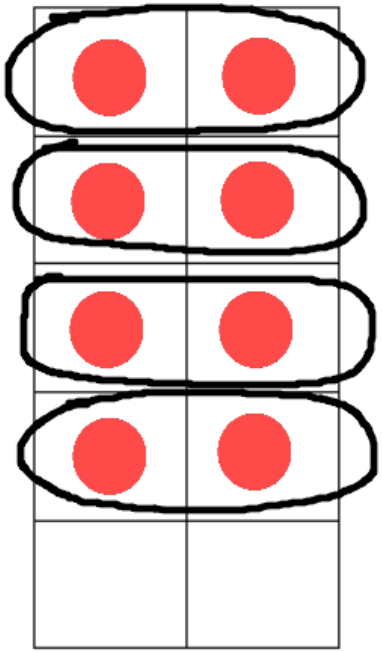
4 + 4 = 8



6 + 2 = 8



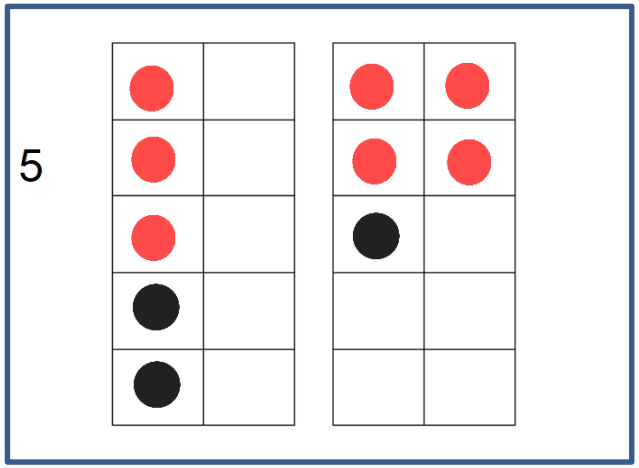
2 + 2 + 2 + 2 = 8

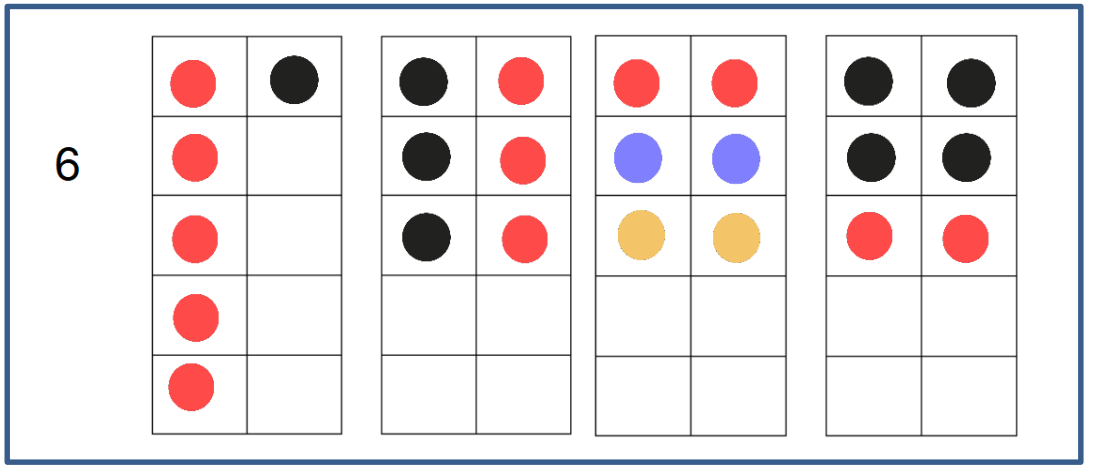


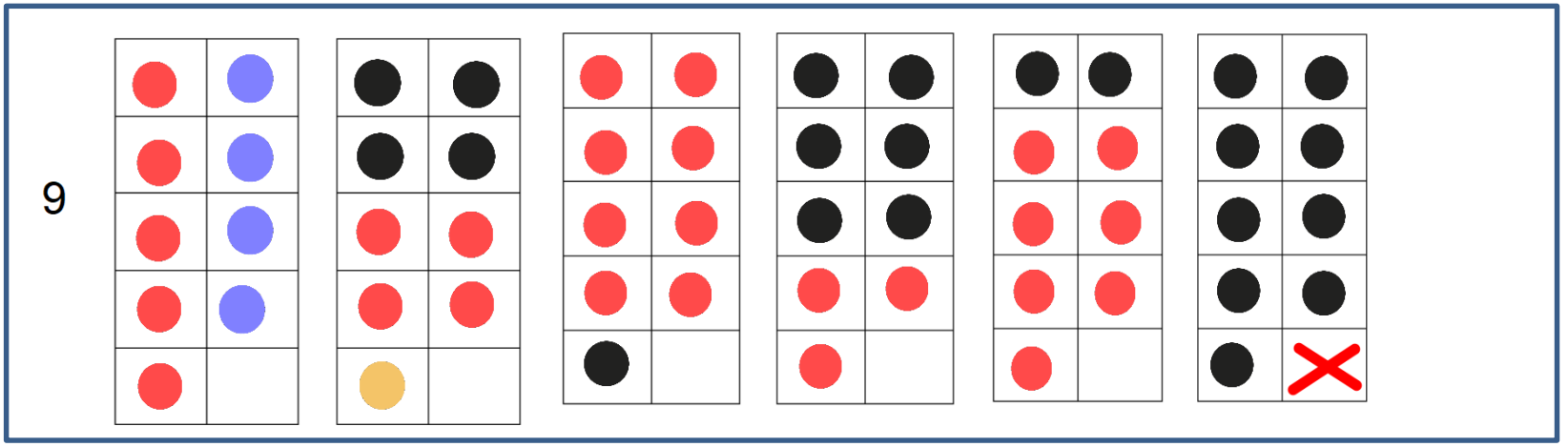
Numeracy BluePrints Activities

Activity : The story of 4, 5, 6, 7, 8 and 9

Ask learners to investigate different numbers and the different ways they can be represented.



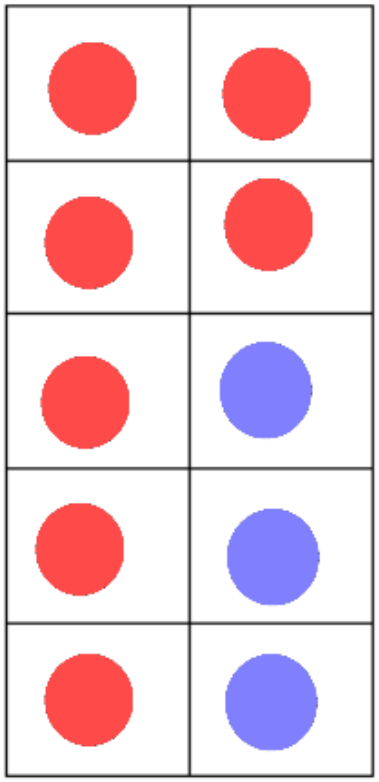




Numeracy BluePrints Activities

Activity : Number bonds to 10

Draw 7 dots in the 10 frame. Investigate number bonds to 10



$7 + 3 = 10$

$3 + 7 = 10$

$10 - 7 = 3$

$10 - 3 = 7$

Numeracy BluePrints Activities

Activity : Writing numbers in the 10 frames

Encourage pupils to practice number formation within the 10 frames. Talk about the different structures and patterns.

1	6
2	7
3	8
4	9
5	10

11	16
12	17
13	18
14	19
15	20

1	2
3	4
5	6
7	8
9	10

11	12
13	14
15	16
17	18
19	20

Numeracy BluePrints Activities

Activity : Writing numbers in the 10 frames

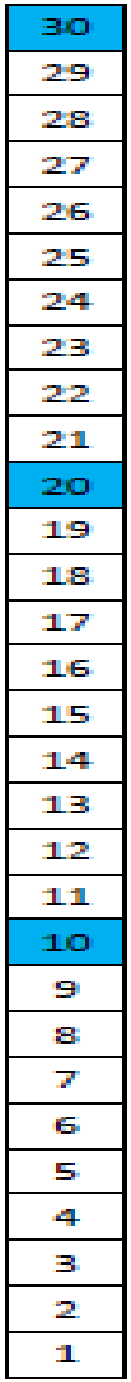
Encourage pupils to practice number formation within the 10 frames. Talk about the different structures and patterns.

5	10
4	9
3	8
2	7
1	6

15	20
14	19
13	18
12	17
11	16

9	10
7	8
5	6
3	4
1	2

19	20
17	18
15	16
13	14
11	12



Numeracy BluePrints Activities

Activity : Numberline counting forwards and backwards

Use the number line to understand the order of numbers.

What is the number that is above/higher than 7?

What is the number that is 2 above/higher than 8?

What is the number that is below/lower than 13?

What is the number that is 2 below/lower than 25?

7 add 2

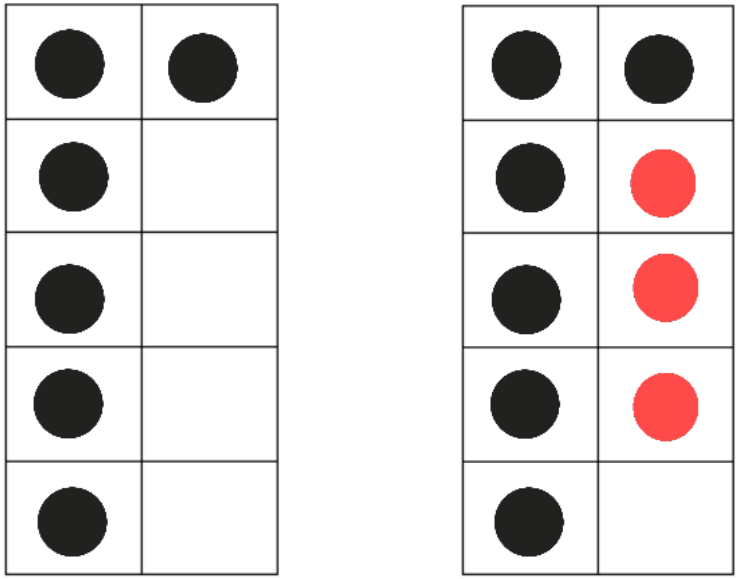
6 subtract 2

Important that pupils understand the structure and order of numbers before the study the 100 square.

Numeracy BluePrints Activities

Activity : Adding 2 and 3 within 10

Start with 6 dots, add in an extra 3 dots. How many dots are there now?

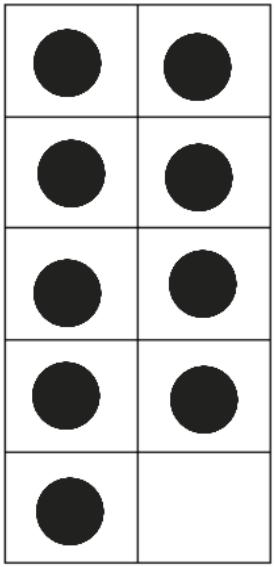


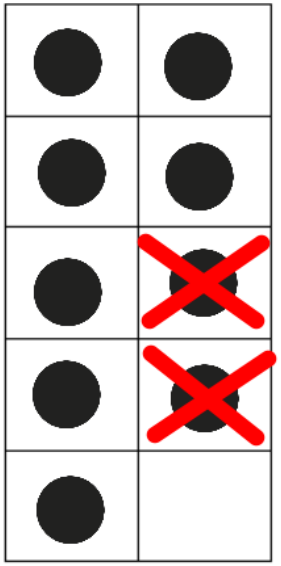
6 + 3 = 9

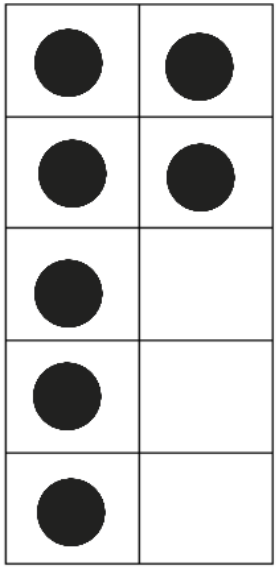
Numeracy BluePrints Activities

Activity : Subtracting 2 and 3 within 10

Start with 9 dots cross our/remove 2 dots. How many dots are there now?





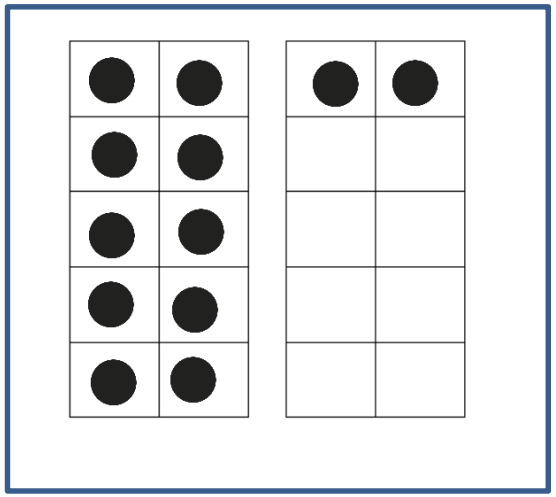


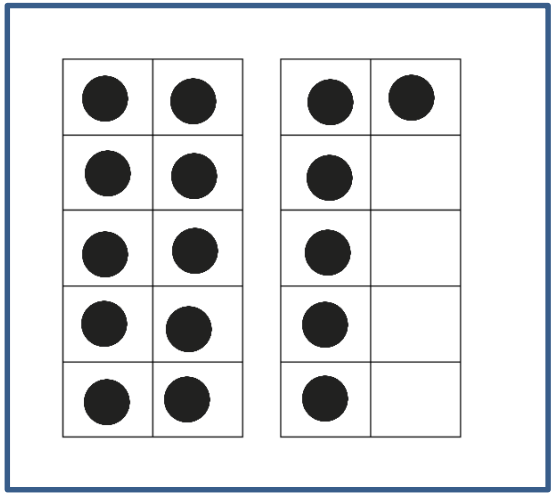
$$9 - 2 = 7$$

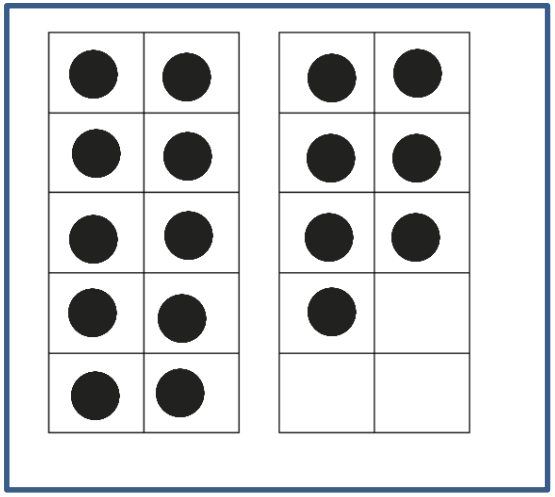
Numeracy BluePrints Activities

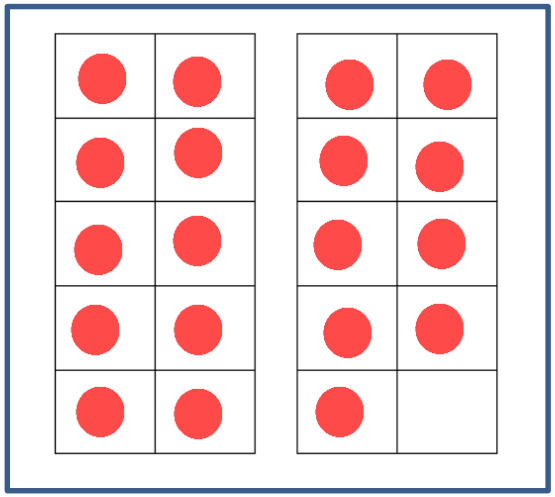
Activity : Subitizing (between 11 - 20)

Show random images between 11 – 20 dots for 2 – 3 seconds.







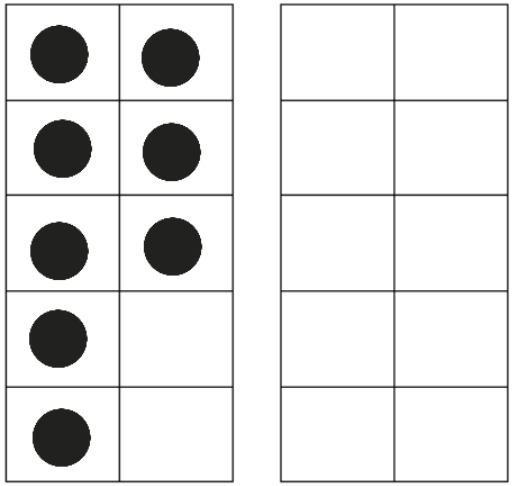


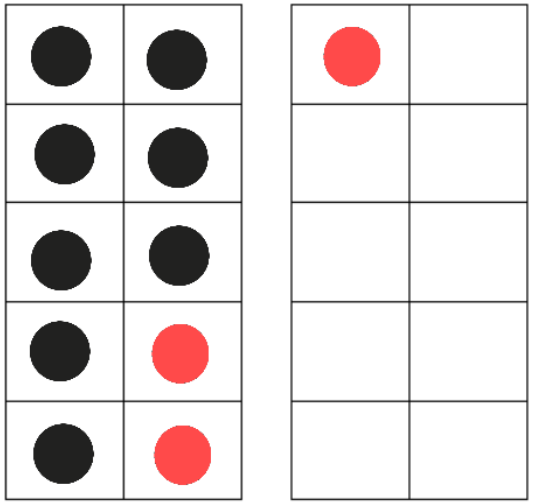
Numeracy BluePrints Activities

Activity : I wish I had ……

I have 8 dots. I wish I had 11 …..

Ask learners to draw 8 dots. Tell them your wish is to have 11. How do they make your wish come true!

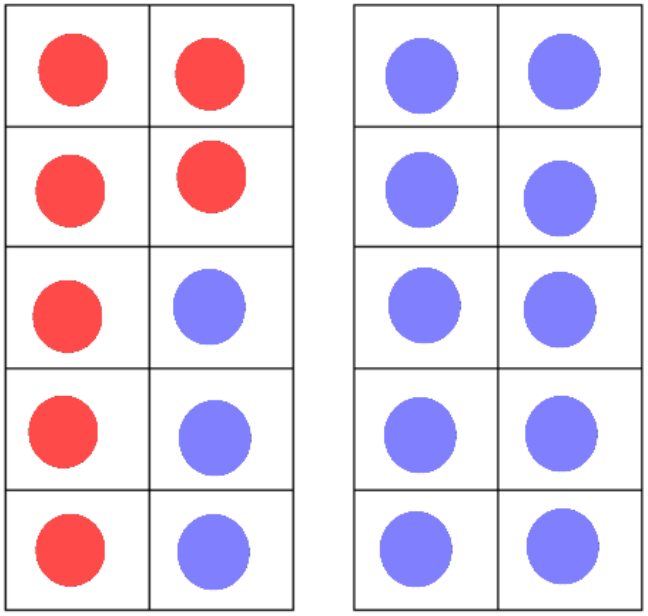




Numeracy BluePrints Activities

Activity : Number bonds to 20

Draw 7 dots in the two 10 frames. Investigate number bonds to 20



$7 + 13 = 20$

$13 + 7 = 20$

$20 - 7 = 13$

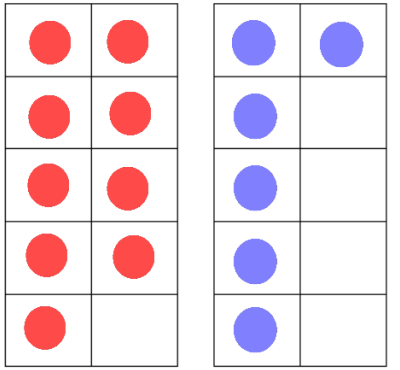
$20 - 13 = 7$

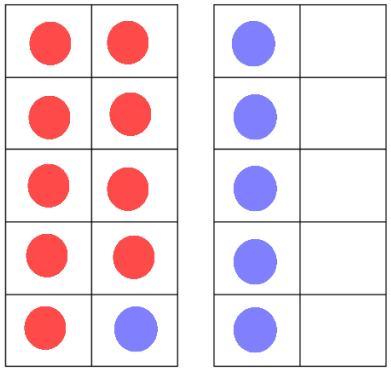
Numeracy BluePrints Activities

Activity : Developing counting stategies

Draw 9 dots in one 10 frame. Draw 6 dots in the other 10 frame.

How many dots are there altogether? What strategy can you adopt?





9 + 6

Speak to learners about the spaces left in the first 10 frame.
Could we use some of the blue dots to 'make a complete 10'.
How many blue dots do we need?
How many blue dots do we leave?

= 9 + 1 + 5

= 10 + 5

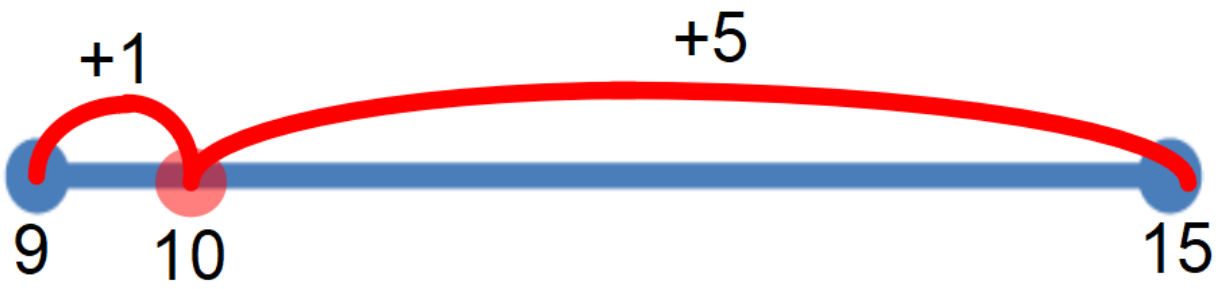
= 15

Link this to the abstract process by using 'The Empty Number Line' See next slide.

Numeracy BluePrints Activities

Activity : Developing counting stategies

Record the process on the empty number line and show the bridge through 10 strategy?



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= 10 + 5

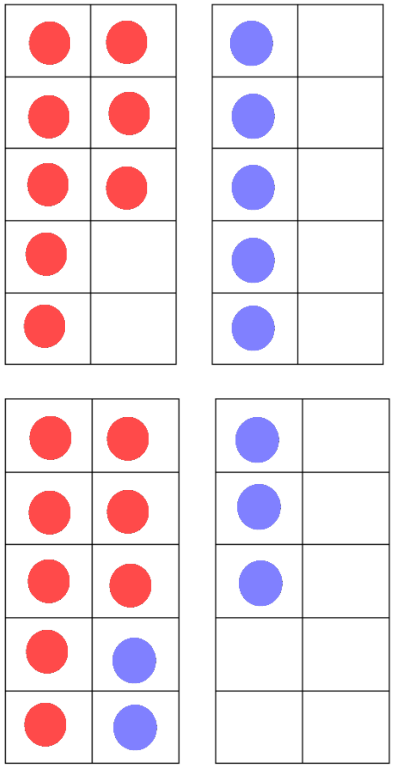
= 15

Numeracy BluePrints Activities

Activity : Developing counting stategies

Draw 8 dots in one 10 frame. Draw 5 dots in the other 10 frame.

How many dots are there altogether? What strategy can you use?



8 + 5

Speak to learners about the spaces left in the first 10 frame.
Could we use some of the blue dots to 'make a complete 10'.
How many blue dots do we need?
How many blue dots do we leave?

= 8 + 2 + 3

= 10 + 3

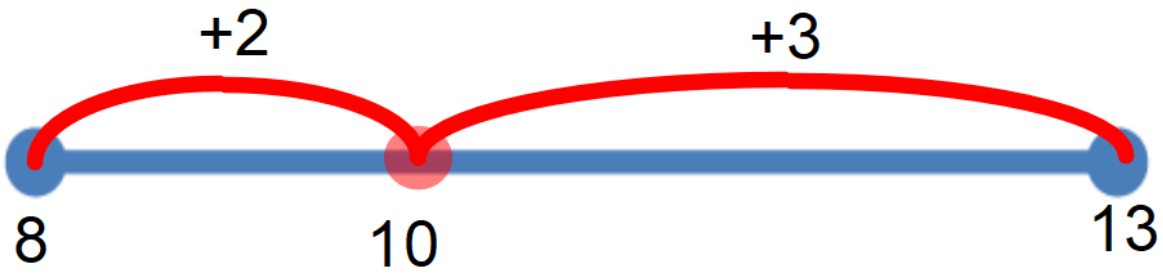
= 13

Link this to the abstract process by using 'The Empty Number Line' See next slide.

Numeracy BluePrints Activities

Activity : Developing counting stategies

Record the process on the empty number line and show the bridge through 10 strategy?



8 + 5

Speak to learners about the spaces left in the first 10 frame.
Could we use some of the blue dots to 'make a complete 10'.
How many blue dots do we need?
How many blue dots do we leave?

= 8 + 2 + 3

= 10 + 3

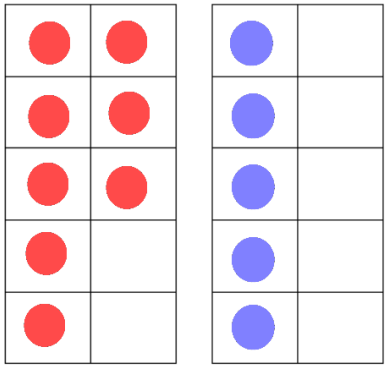
= 13

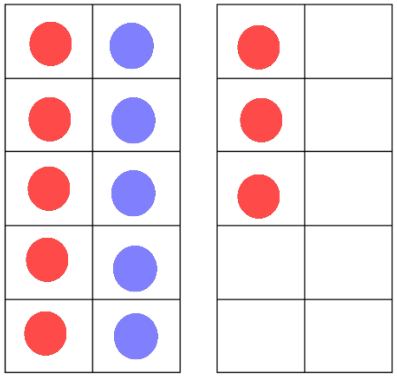
Numeracy BluePrints Activities

Activity : Developing counting stategies

Draw 8 dots in one 10 frame. Draw 5 dots in the other 10 frame.

How many dots are there altogether? What strategy can you use?





8 + 5

Some learners may spot there is double 5 within this picture and look at this strategy.

= 5 + 3 + 5

= 5 + 5 + 3

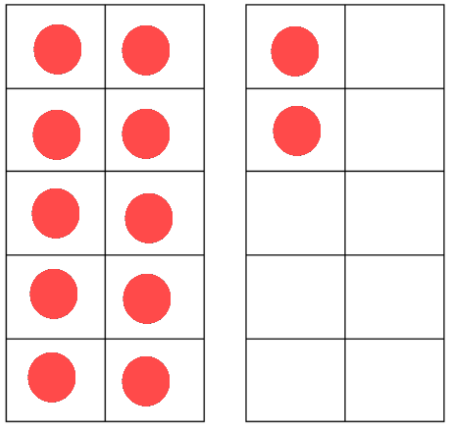
= 10 + 3

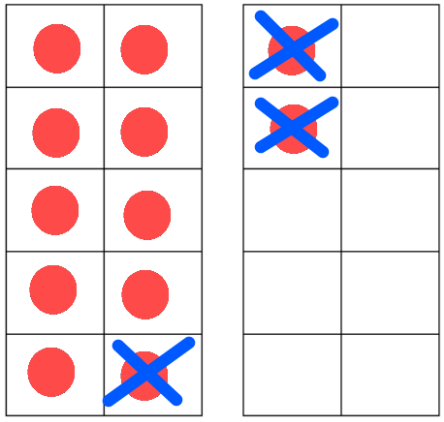
= 13

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw 12 dots. Cross off 3 dots. How many dots are left?





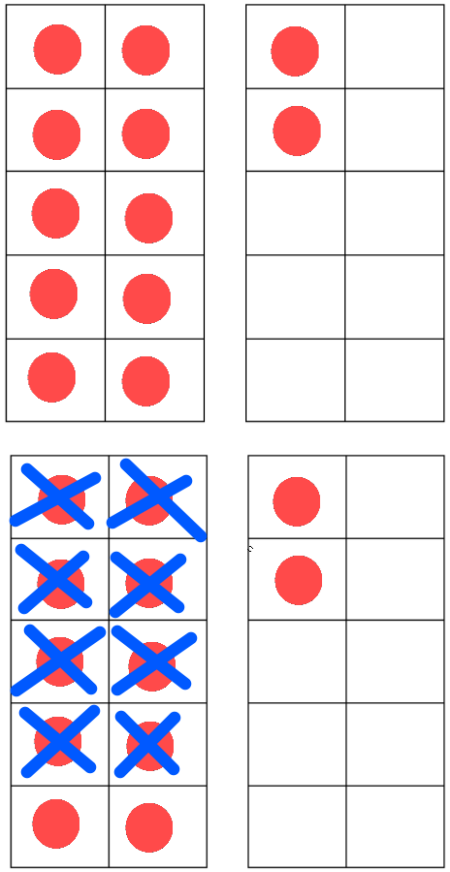
12 – 3

= 9

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw 12 dots. Cross off 8 dots. How many dots are left?



12 – 8

= 4

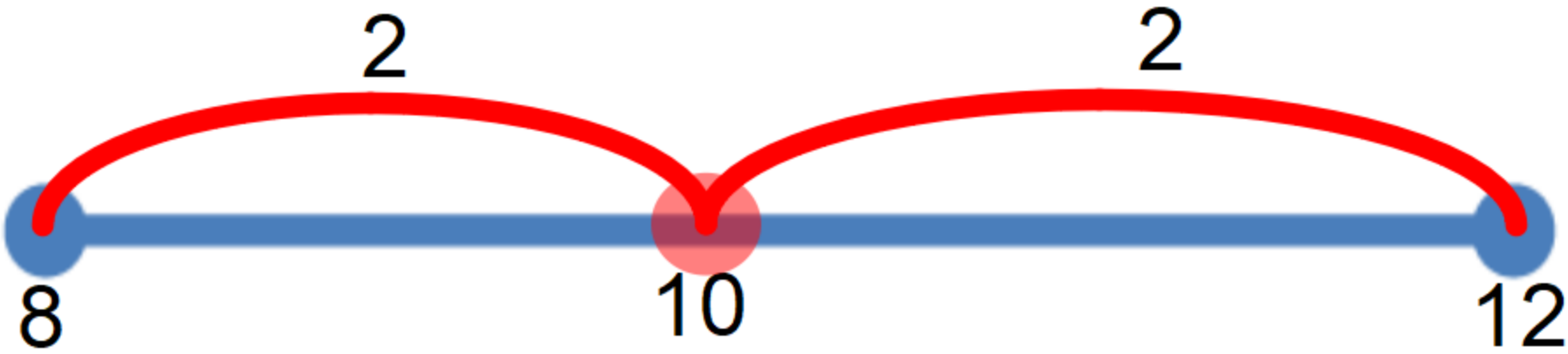
Talk about the difference in strategy here. In this case it is easier to take off the 8 from the “start” and use the count up method for subtraction.

Link this to the abstract process by using ‘The Empty Number Line’ See next slide.

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw a number line with 8 and 12 at each end. Use counting up and bridging through 10 to work out the difference.



12 – 8

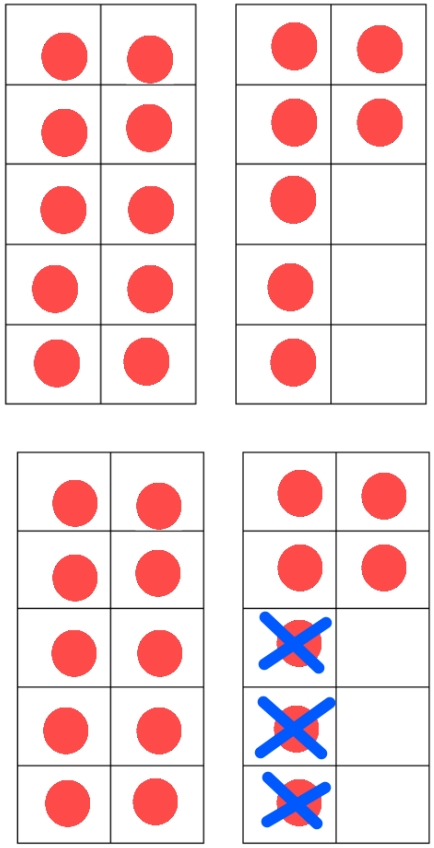
= 2 + 2

= 4

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw 17 dots. Cross off 3 dots. How many dots are left?



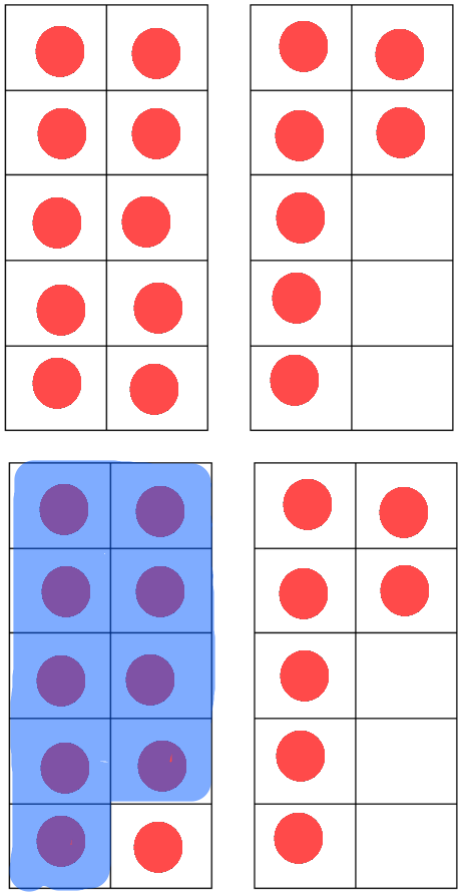
17 – 3

= 14

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw 17 dots. Cross off 9 dots. How many dots are left?



17 – 9

= 8

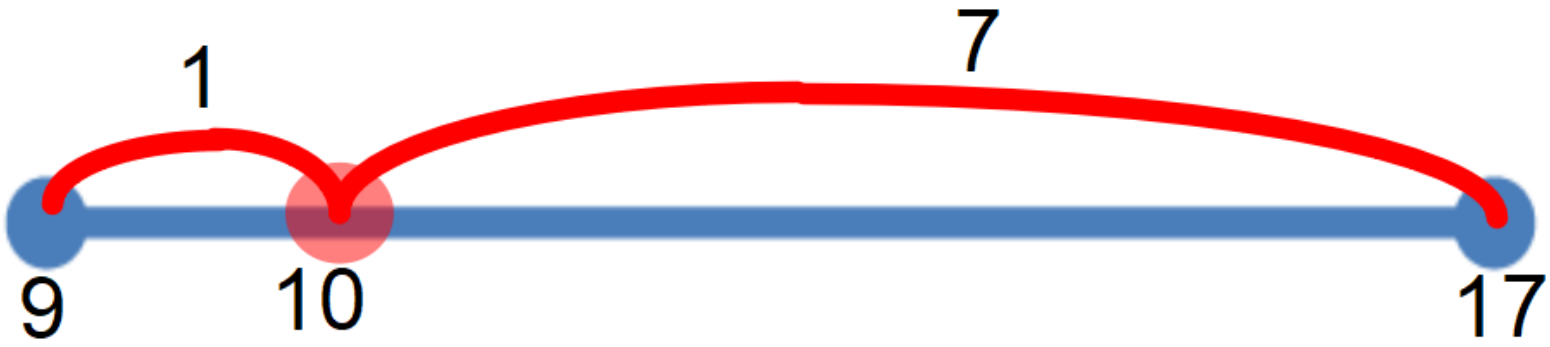
Talk about the difference in strategy here. In this case it is easier to take off the 9 from the "start" and use the count up method for subtraction.

Link this to the abstract process by using 'The Empty Number Line' See next slide.

Numeracy BluePrints Activities

Activity : Subtraction within 20

Draw a number line with 9 and 17 at each end. Use counting up and bridging through 10 to work out the difference.



17 – 9

= 1 + 7

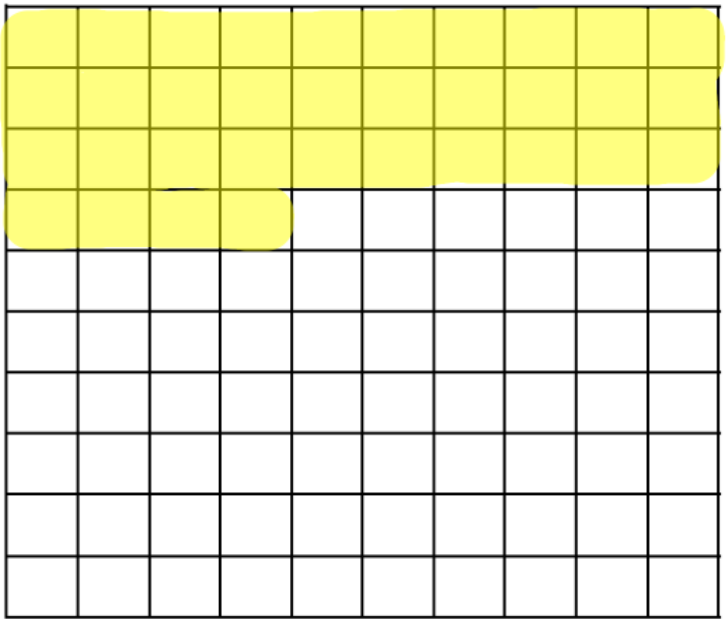
= 8

Numeracy BluePrints Activities

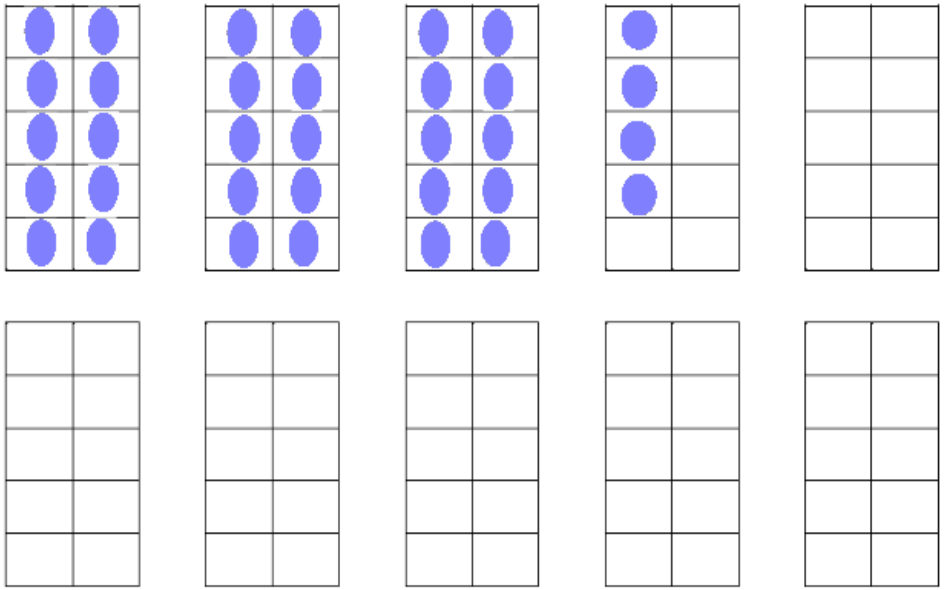
Activity : Represent numbers between 21 - 100

Represent and investigate what the number 34 looks like.

The Big Grid



TEN 10 Frames



34 is made up of 3 tens and 4 units or ones

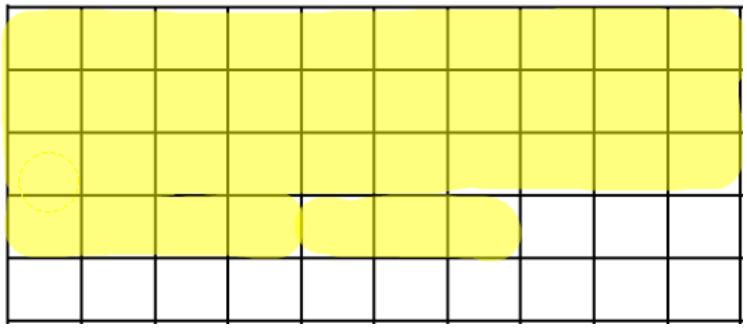
Numeracy BluePrints Activities

Activity : Number bonds to 50

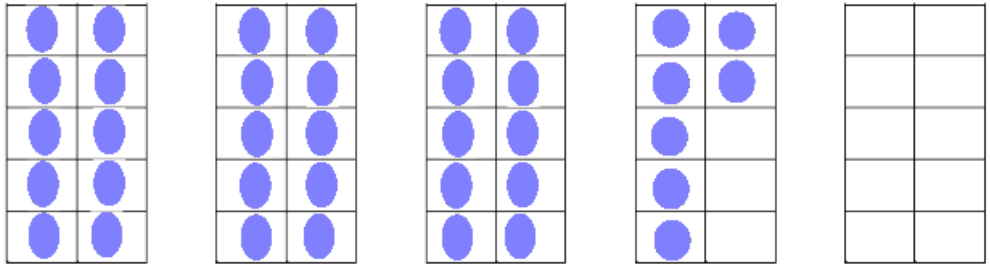
Represent the number 37.

What is left blank?

The Big Grid



TEN 10 Frames



37 + 13 = 50

13 + 37 = 50

50 – 37 = 13

50 – 13 = 37

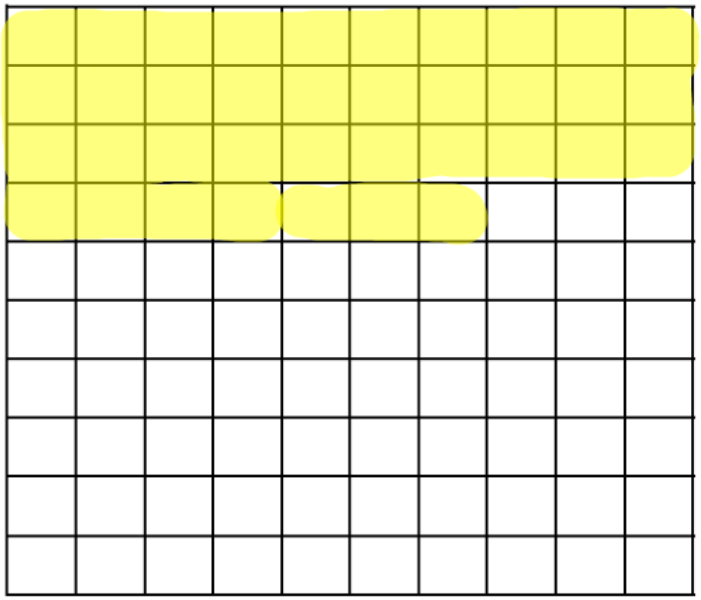
Numeracy BluePrints Activities

Activity : Number bonds to 100

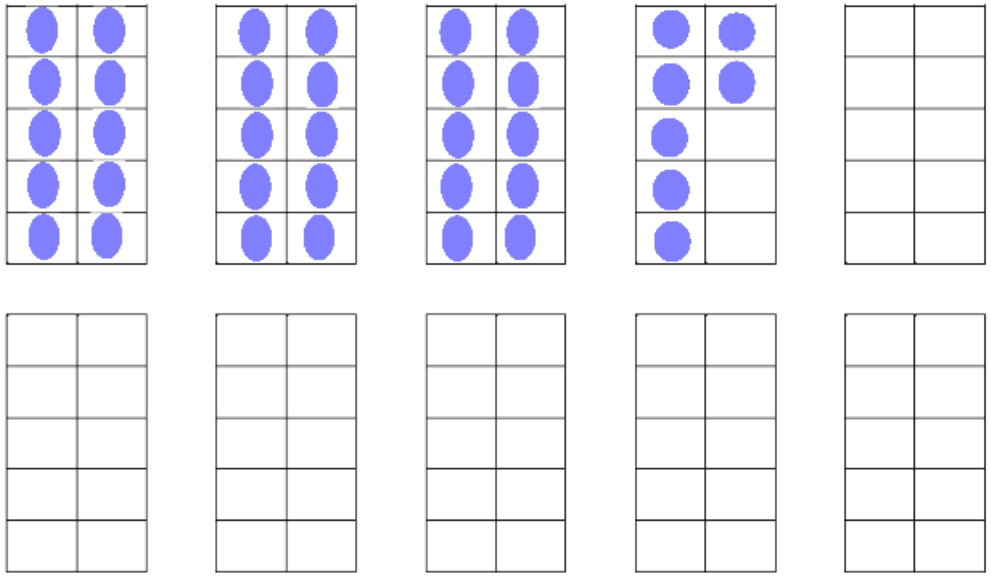
Represent the number 37.

What is left blank?

The Big Grid



TEN 10 Frames



37 + 63 = 100

63 + 37 = 100

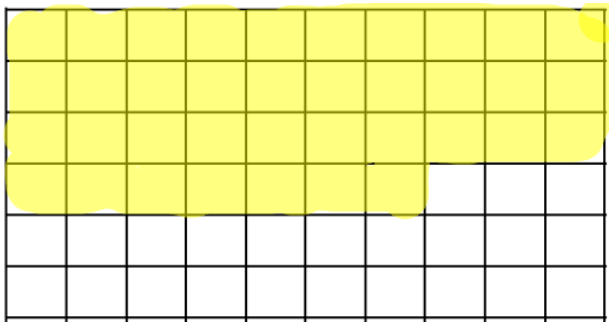
100 – 37 = 63

100 – 63 = 37

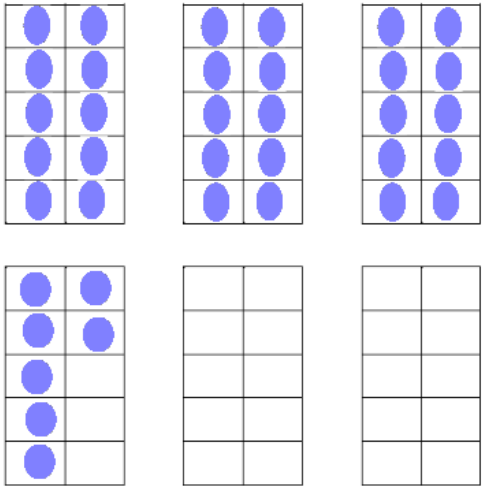
Numeracy BluePrints Activities

Activity : Number bonds to 60 (time)

Represent the number 37.



What is left blank?



37 + 23 = 60

23 + 37 = 60

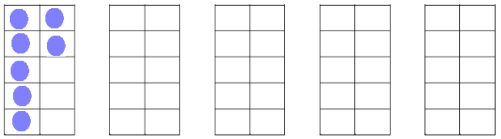
60 – 37 = 23

60 – 23 = 37

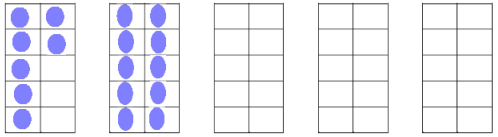
Numeracy BluePrints Activities

Activity : Adding 10

Represent the number 7. Repeatedly add 10 more



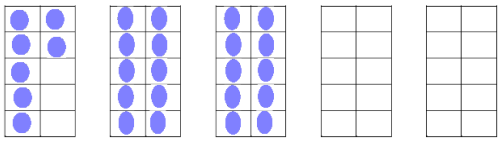
7



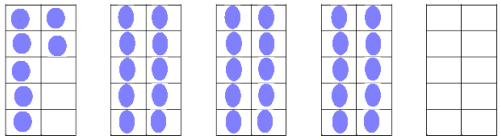
7 + 10 = 17

What do you notice?

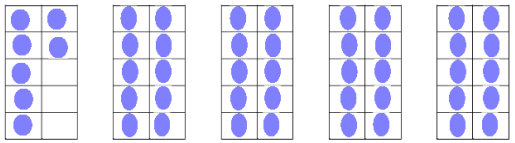
What do you wonder?



17 + 10 = 27



27 + 10 = 37



37 + 10 = 47

Link to 100 square activity on next page.

Numeracy BluePrints Activities

Activity : Adding 10

Represent the number 7. Repeatedly add 10 more

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

7

7 + 10 = 17

17 + 10 = 27

27 + 10 = 37

37 + 10 = 47

What do you notice?

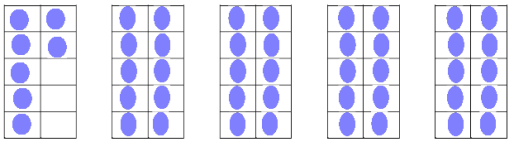
What do you wonder?

Numeracy BluePrints Activities

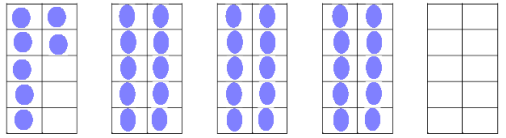
Activity : Subtracting 10

Represent the number 47. Repeatedly remove 10.

47



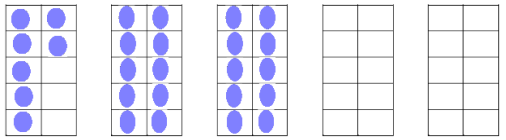
47 – 10 = 37



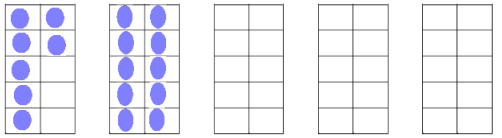
What do you notice?

What do you wonder?

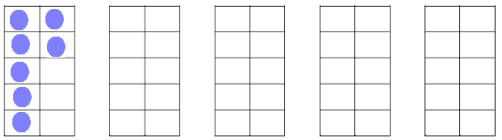
37 – 10 = 27



27 – 10 = 17



17 – 10 = 7



Link to 100 square activity on next page.

Numeracy BluePrints Activities

Activity : Subtracting 10

Represent the number 47. Repeatedly remove 10.

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

47

What do you notice?

47 – 10 = 37

What do you wonder?

37 – 10 = 27

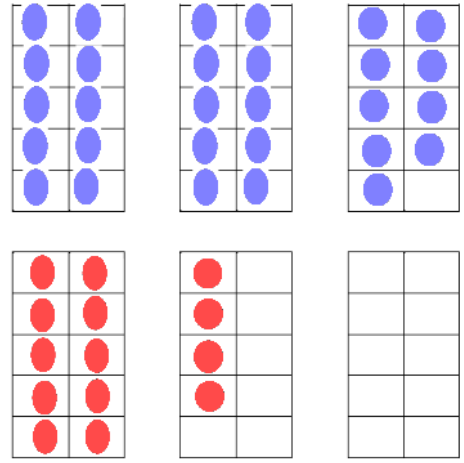
27 – 10 = 17

17 – 10 = 7

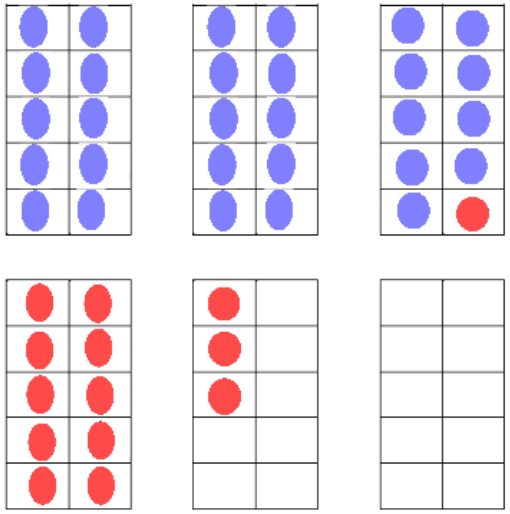
Numeracy BluePrints Activities

Activity : Adding double digit numbers'

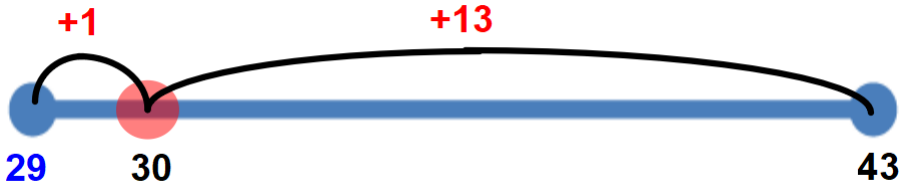
29 + 14



29 + 14
29 + 1 + 13
30 + 13
= 43



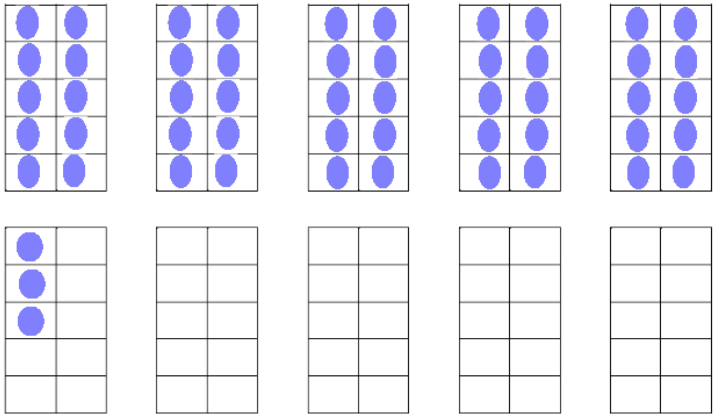
Draw 29 dots in the top 10 frames. Draw 14 dots in the bottom 10 frames. Move 1 of the dots from the 14 red dots to make a another full ten with the blue dots. Write down and record the process on 'The empty Number Line'



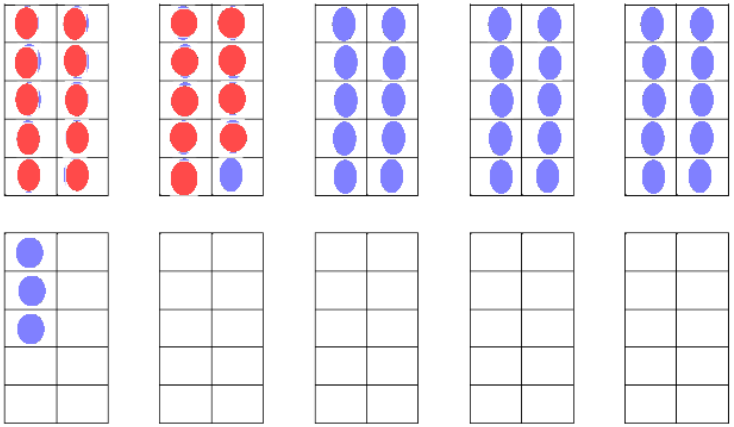
Numeracy BluePrints Activities

Activity : Subtracting within 100

Represent the number 53. Remove 19



Draw 53 dots in the 10 frames. Draw 19 dots in a different colour or rub them off. Look at what is left?



How many blues are left?

1 + 10 + 10 + 10 + 3 = 34

53 – 19 = 34

Link this to visual method of counting up on the 100 square on next slide

Numeracy BluePrints Activities

Activity : Subtracting within 100

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1
10
10
10
3

Circle 19 and highlight every number on the way to 53

1 + 10 + 10 + 10 + 3 = 34

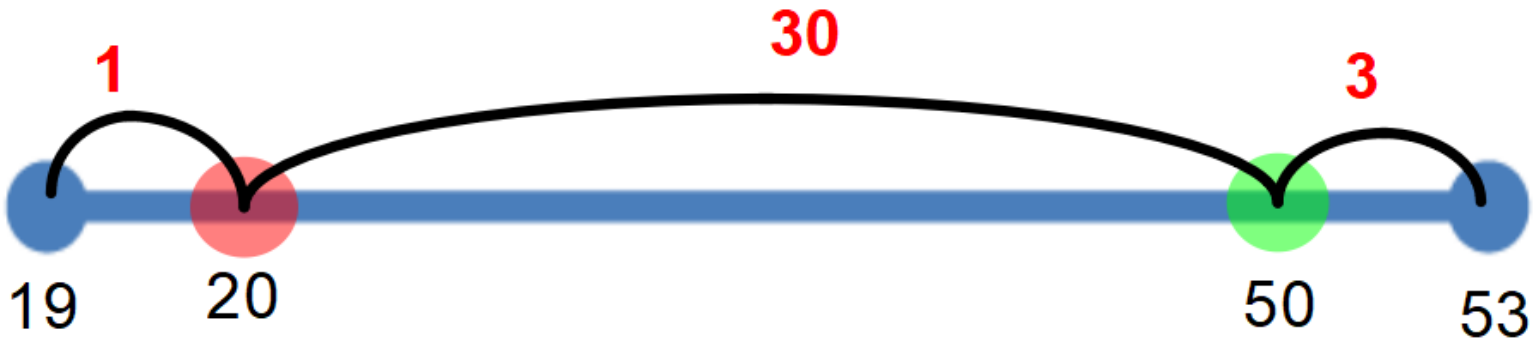
53 – 19 = 34

Link this to visual method of counting up on ‘The Empty Number Line’ on the next slide

Numeracy BluePrints Activities

Activity : Subtracting within 100

Put 19 at one end and 53 at the other end. Add in some nice landing spots or friendly numbers and count the jumps.



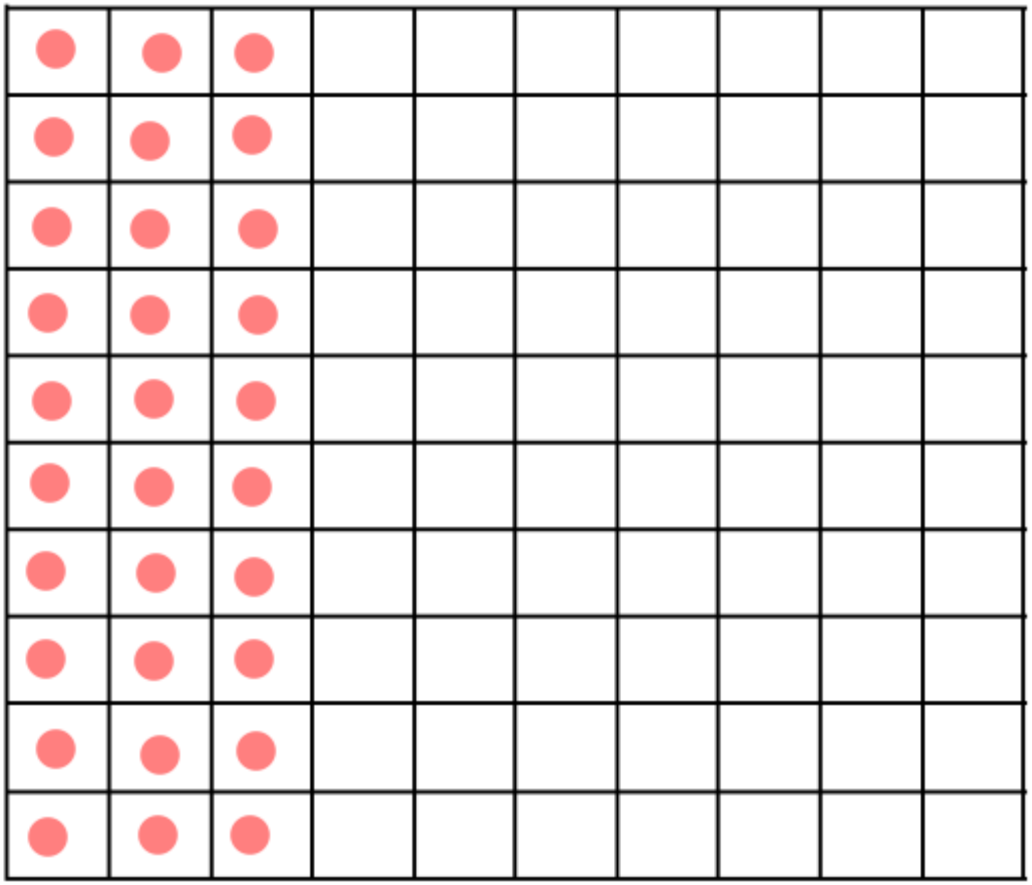
1 + 30 + 3 = 34

53 – 19 = 34

Numeracy BluePrints Activities

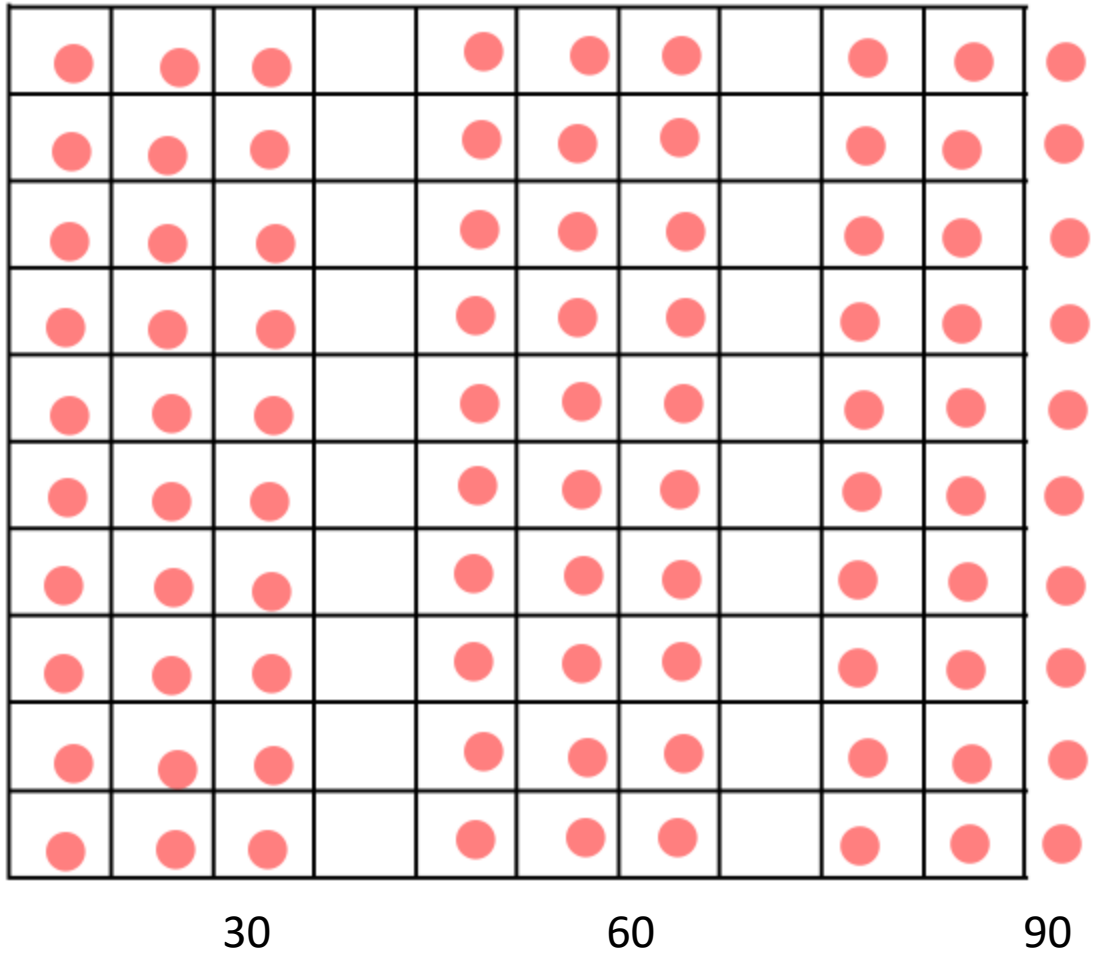
Activity : Counting up in 3s ‘The 3 times table’

1 group of 3 = 3
2 groups of 3 = 6
3 groups of 3 = 9
4 groups of 3 = 12
5 groups of 3 = 15
6 groups of 3 = 18
7 groups of 3 = 21
8 groups of 3 = 24
9 groups of 3 = 27
10 groups of 3 = 30



Numeracy BluePrints Activities

Activity : Counting up in 3s ‘The 3 times table’



Numeracy BluePrints Activities

Activity : Counting up in 3s ‘The 3 times table’

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Use patterns to calculate

14 x 3 = 42

57 ÷ 3 = 19

32 x 3 = 96

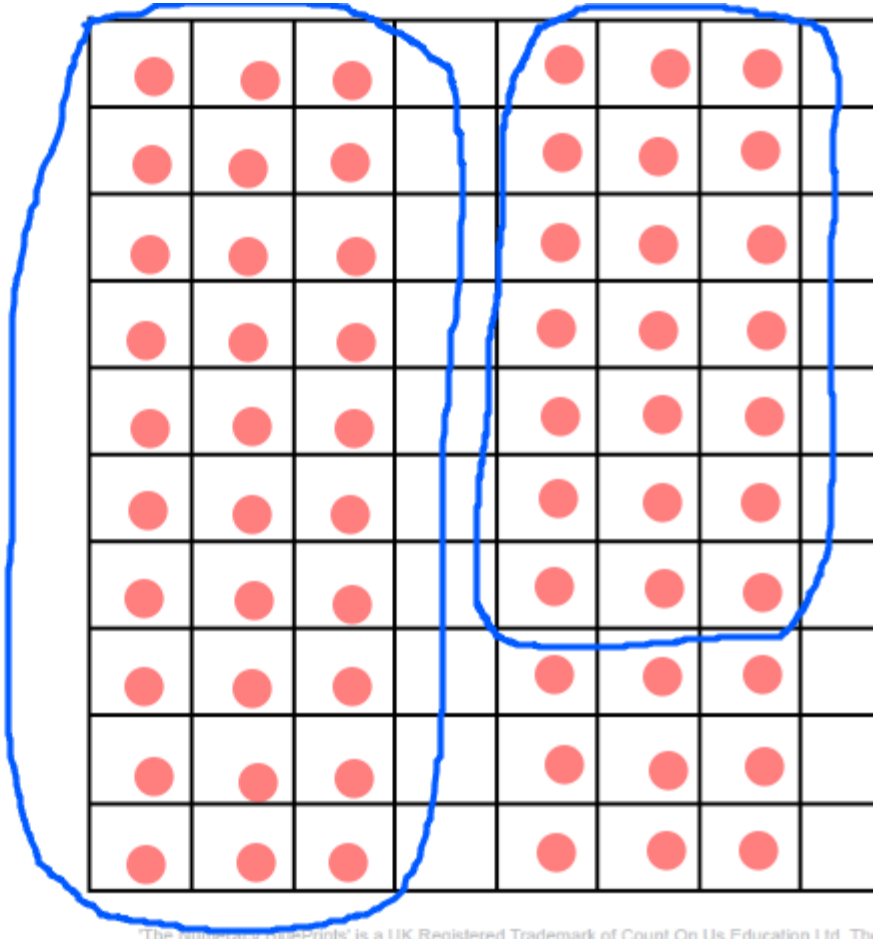
Numeracy BluePrints Activities

Activity : Counting up in 3s ‘The 3 times table’

17 x 3 =

10 groups of 3
plus
7 groups of 3

= 30 + 21 = 51

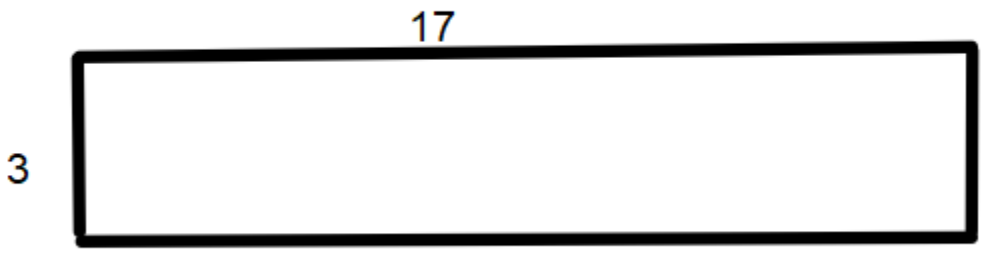


Link this to visual method of multiplication on next slide(bar modelling)

Numeracy BluePrints Activities

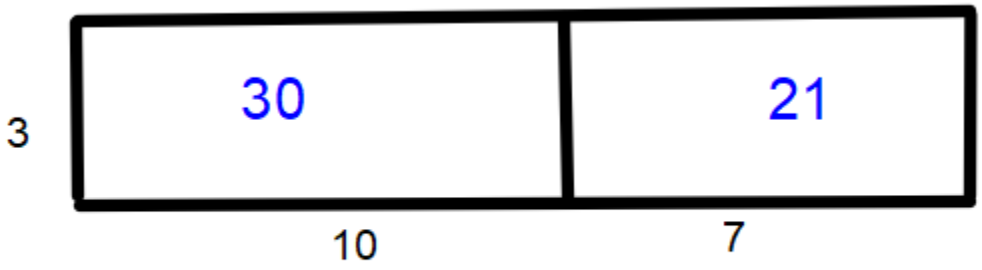
Activity : Counting up in 3s ‘The 3 times table’

17 x 3



Instead of multiplying 3 by 17

Multiply 3 by 10 and by 7 separately and add the answers

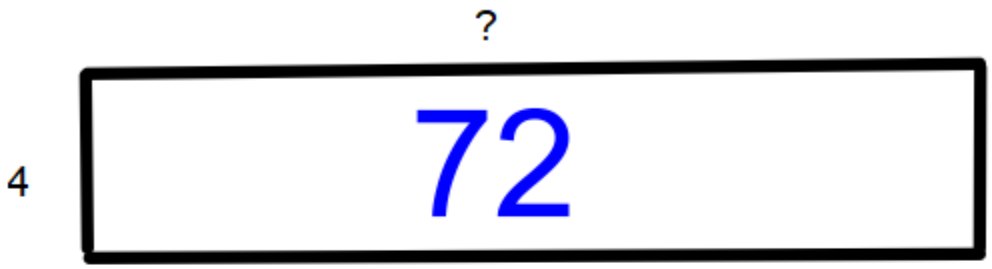


17 x 3 = 30 + 21 = 51

Numeracy BluePrints Activities

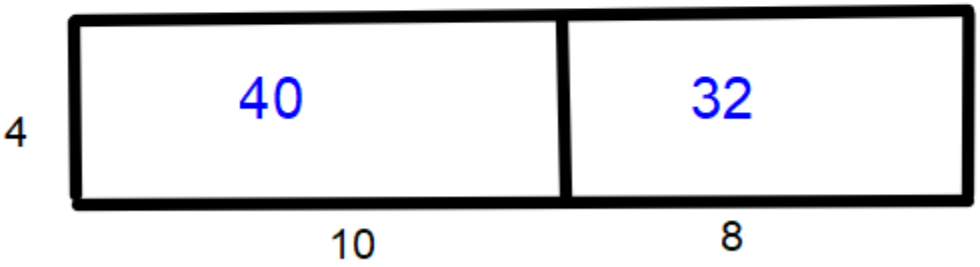
Activity : Dividing

72 divided by 4



When dividing by 4 the key number is 40 so split 72 up into

40 and 32



72 divided by 4 = 10 + 8 = 18

Numeracy BluePrints Activities

Activity : Estimating with the number line

Put 0 at one end and 100 at the other end. Put a mark where you think 71 would go?

Numeracy BluePrints Activities

Activity : Estimating with the number line

Put 0 at one end and 1 at the other end. Put a mark in and ask what number **could** the mark represent?

Possible answers: 0.3, 3/10 , 0.25, 1/4 , 0.23, 26%, …etc

Numeracy BluePrints Activities

Activity : What am I thinking?

Someone in the class think of a number between 1 – 100 and the rest have to ask mathematical Yes or No answer question to determine the number.

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Rules:

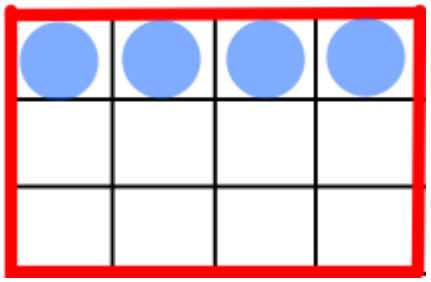
No Guessing. No questions can be are you 27?

Only 1 type of question. Eg Once you ask are you higher than 50 you cannot ask if you are higher than any other number?

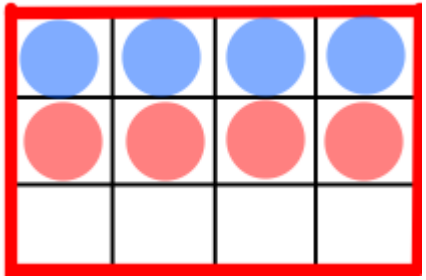
Numeracy BluePrints Activities

Activity : Equivalent/Simplifying Fractions in The Big Grid

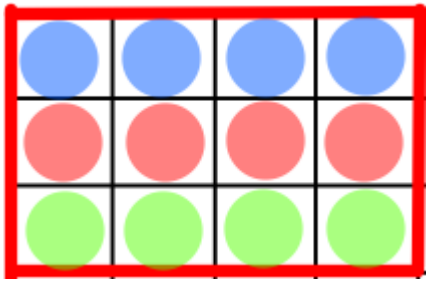
Draw a rectangle 4 by 3. Add 4 dots along each row and explore equivalent fractions.



$$\frac{4}{12} = \frac{1}{3}$$



$$\frac{8}{12} = \frac{2}{3}$$



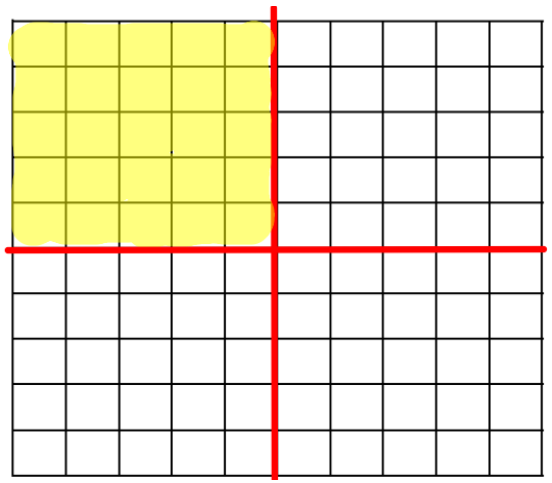
$$\frac{12}{12} = \frac{3}{3} = 1$$

Numeracy BluePrints Activities

Activity : Equivalent fractions and perctanges in The Big Grid

Let ‘The Big Grid’ represent 100%. Therefore each box represents 1%. Split ‘The Big Grid’ into section to explore the link between fractions and percentages

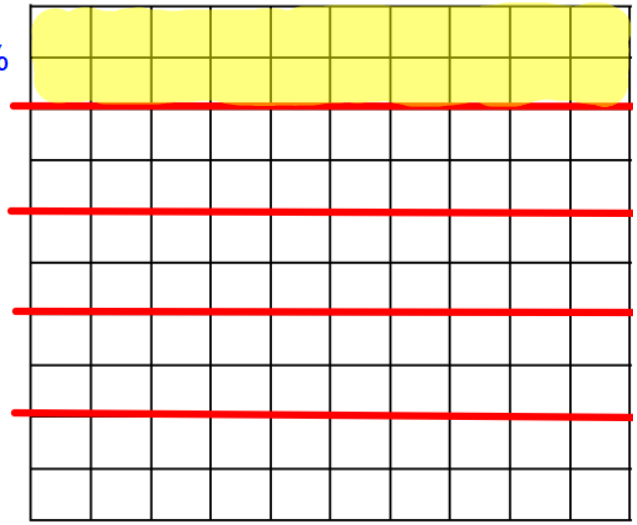
$\frac{1}{4}$ = 25%



$\frac{3}{4}$ = 75%

$\frac{1}{5}$ = 20%

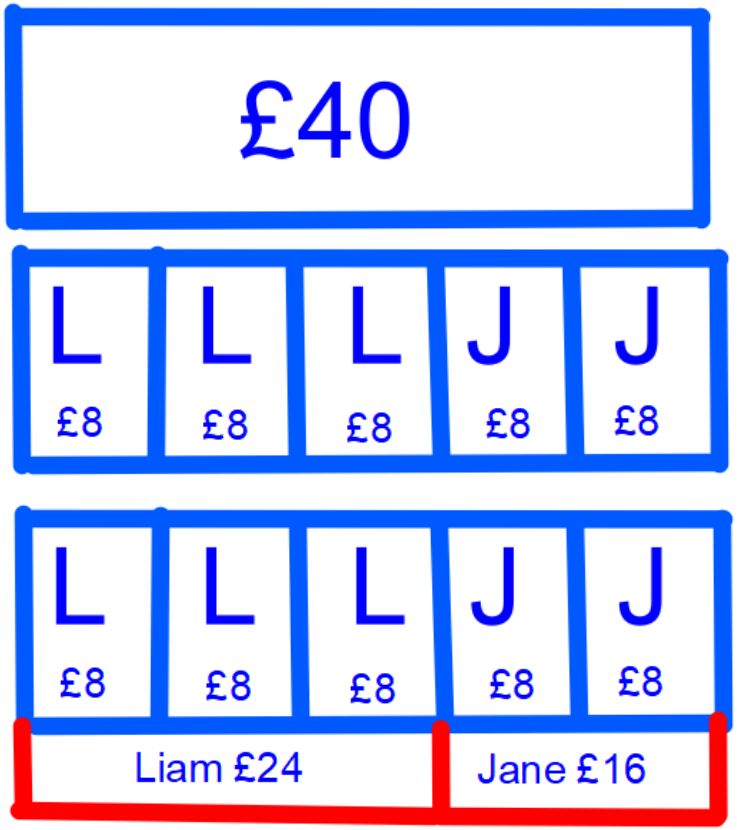
$\frac{4}{5}$ = 80%



Numeracy BluePrints Activities

Activity : Ratio and bar modelling

Liam and Jane are clearing out their Grans house. Liam does 3 hours work and Jane does 2 hours work. Their Gran gives them £40. How should they split the money?



Draw a bar to represent the £40

Split the bar into 5 sections.
Liam(L) should get 3 sections and Jane(J) should get 2 sections.

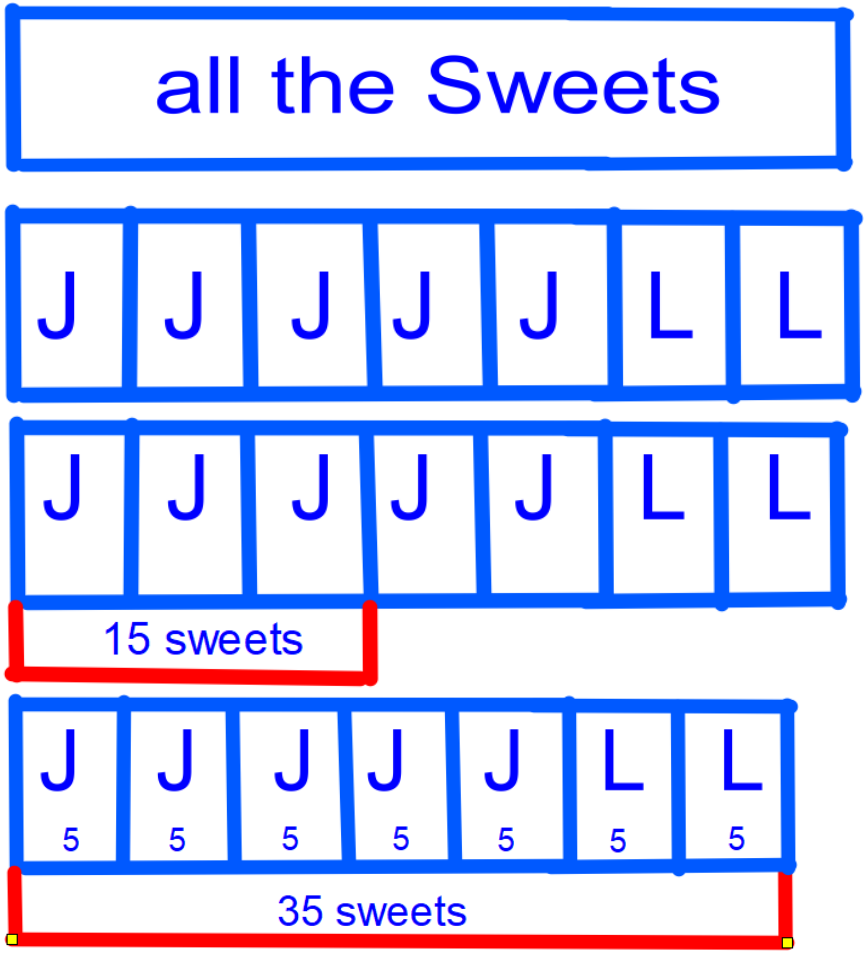
Each section is worth £8 as 40 / 5 = 8

Liam should get £24 and Jane should get £16.

Numeracy BluePrints Activities

Activity : Ratio and bar modelling

Jim decides to share his sweets with his sister Lucy. Jim and Lucy share their sweets in the ratio 5:2. Jim gets 15 sweets more than Lucy. How many sweets do they have altogther?



Draw a bar to represent all the sweets.

Split the bar into 7 sections.
Jim(J) should get 5 sections and Lucy(L) should get 2 sections.

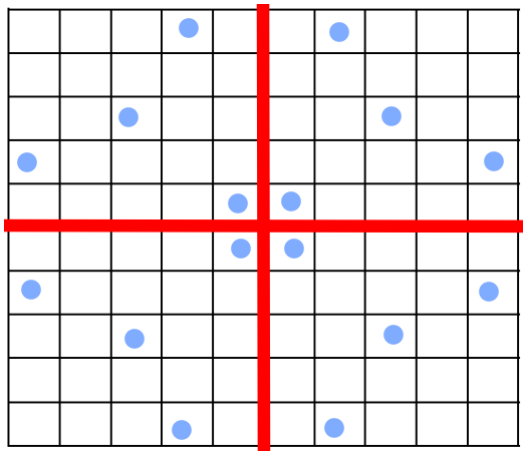
Jim gets 15 sweets more but he also has 3 more sections so the 3 sections must be the 15 extra sweets. 1 section must equal 5 sweets.

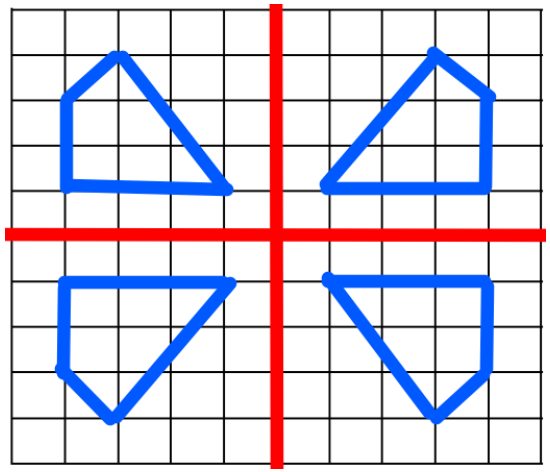
There must have been 35 sweets to begin with.

Numeracy BluePrints Activities

Activity : Symmetry in the Big grid

Draw randowm dots or shapes in one quarter and make the shape symmetrical



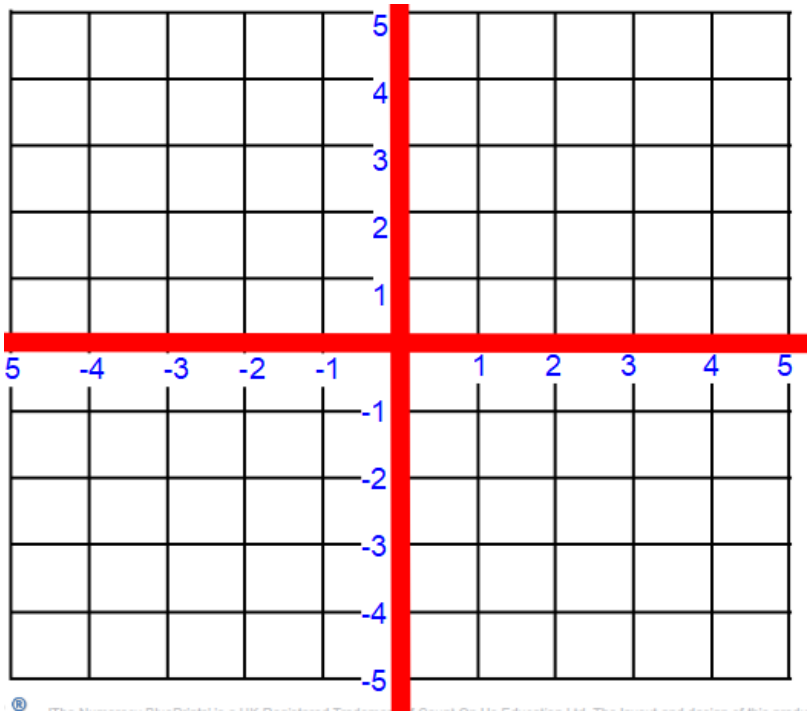


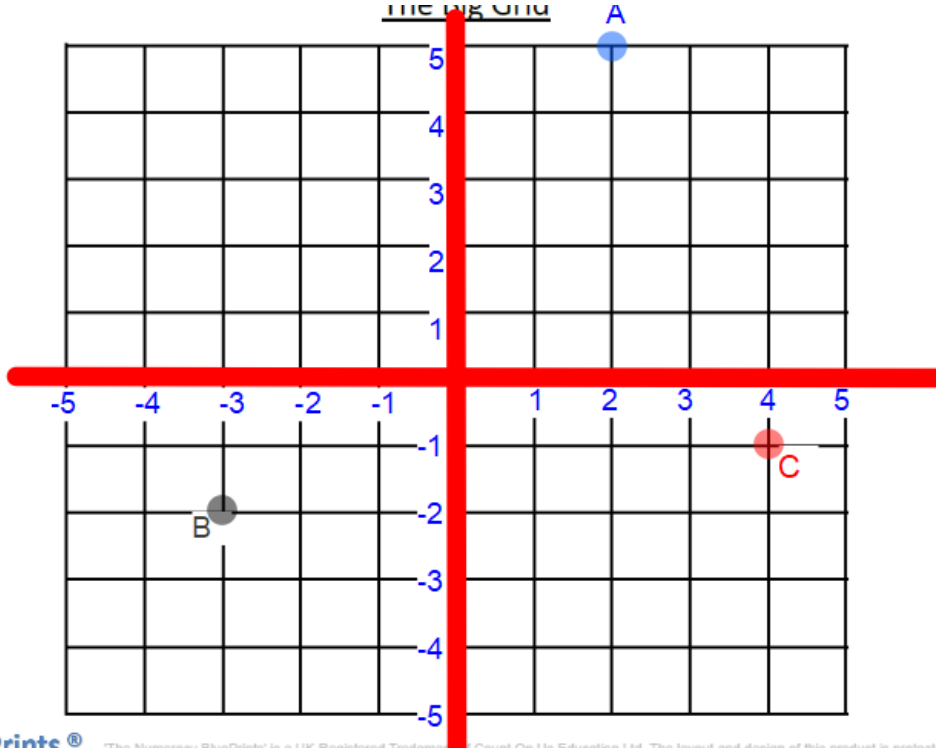
Numeracy BluePrints Activities

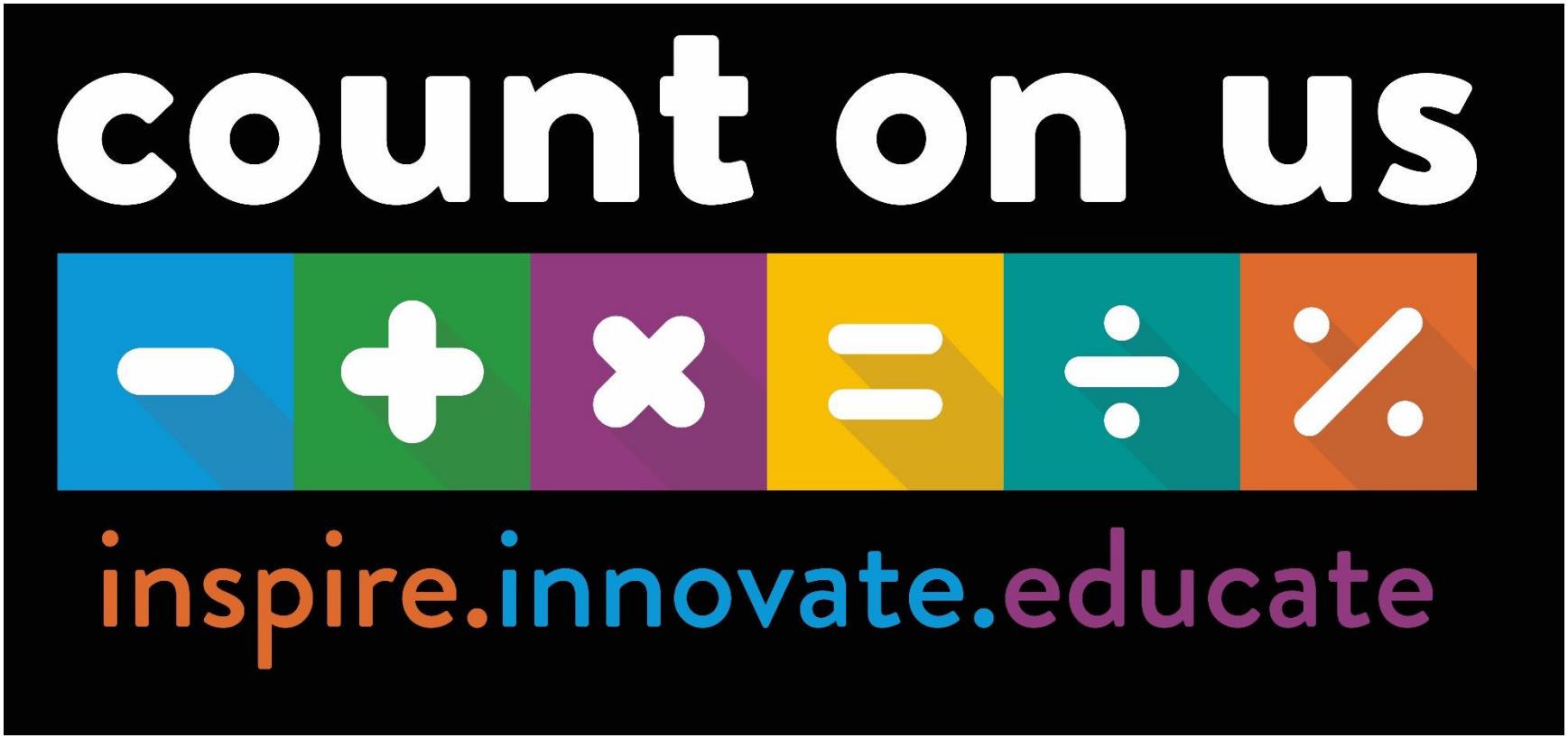
Activity : Symmetry in the Big grid

Plot the points on the coordinate axis.

A(2, 5) B(- 3, - 2) C (4, - 1)







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