

## Year 1

### Using place value

Count in 1s

e.g.  $45 + 1$

Count in 10s

e.g.  $45 + 10$  without counting on in 1s

34	35	36
44	45	46
54	55	56

Add 10 to any given 2-digit number

### Counting on

Count on in 1s

e.g.  $8 + 3$  as 8, 9, 10, 11



Add, putting the larger number first

Count on in 10s

e.g.  $45 + 20$  as 45, 55, 65

## Year 2

### Using place value

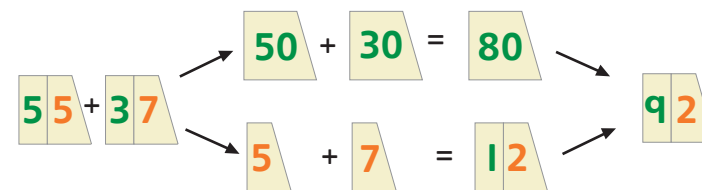
Know 1 more or 10 more than any number

e.g. 1 more than 67

e.g. 10 more than 85

Partitioning

e.g.  $55 + 37$  as  $50 + 30$  and  $5 + 7$ , then finally combine the two totals:  $80 + 12$



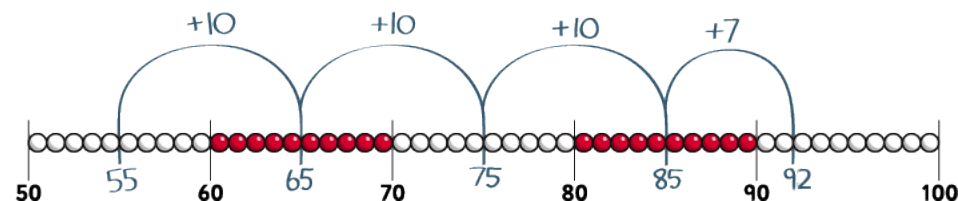
### Counting on

Add 10 and multiples of 10 to a given 1- or 2-digit number

e.g.  $76 + 20$  as 76, 86, 96 or in one hop:  $76 + 20 = 96$

Add two 2-digit numbers by counting on in 10s, then in 1s

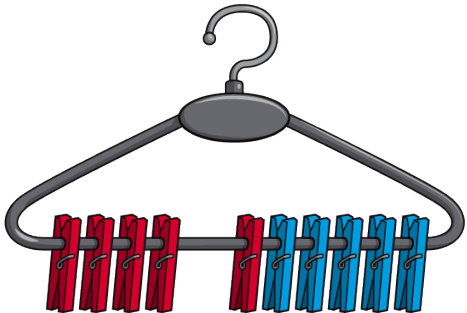

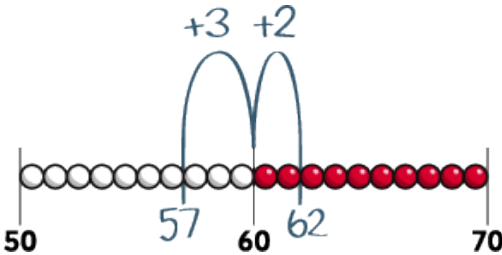
e.g.  $55 + 37$  as  $55 + 30$  (85) + 7 = 92



Add near multiples of 10

e.g.  $46 + 19$

e.g.  $63 + 21$

	Year 1	Year 2
Mental Addition	<p><b>Using number facts</b>            'Story' of 4, 5, 6, 7, 8 and 9            e.g. <math>7 = 7 + 0</math>, <math>6 + 1</math>, <math>5 + 2</math>, <math>4 + 3</math>            Number bonds to 10            e.g. <math>5 + 5</math>, <math>6 + 2</math>, <math>7 + 3</math>, <math>8 + 2</math>, <math>9 + 1</math>, <math>10 + 0</math></p>  <p style="text-align: center;"><math>4 + 6 = 10</math></p> <p>Use patterns based on known facts when adding            e.g. <math>4 + 3 = 7</math> so we know <math>24 + 3</math>, <math>44 + 3</math>, <math>74 + 3</math></p>	<p><b>Using number facts</b>            Know pairs of numbers which make the numbers up to and including 12            e.g. <math>8 = 4 + 4</math>, <math>3 + 5</math>, <math>2 + 6</math>, <math>1 + 7</math>, <math>0 + 8</math>            e.g. <math>10 = 5 + 5</math>, <math>4 + 6</math>, <math>3 + 7</math>, <math>2 + 8</math>, <math>1 + 9</math>, <math>0 + 10</math>            Use patterns based on known facts when adding            e.g. <math>6 + 3 = 9</math>, so we know <math>36 + 3 = 39</math>, <math>66 + 3 = 69</math>, <math>56 + 3 = 59</math></p>  <p>Bridging 10            e.g. <math>57 + 5 = 57 + 3 (60) + 2 = 62</math></p>  <p>Add three or more 1-digit numbers, spotting bonds to 10 or doubles            e.g. <math>3 + 5 + 3 = 6 + 5 = 11</math>            e.g. <math>8 + 2 + 4 = 10 + 4 = 14</math></p>

## Year 1


### Using place value

Count back in 1s

e.g. *Know 53 – 1*

Count back in 10s

e.g. *Know 53 – 10 without counting back in 1s*

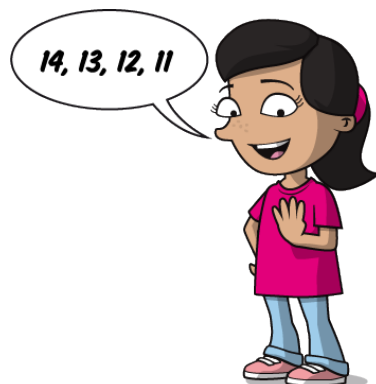
32	33	34
42	43	44
52		54

### Taking away

Count back in 1s

e.g. *11 – 3 as 11, 10, 9, 8*

e.g. *14 – 3 as 14, 13, 12, 11*



Count back in 10s

e.g. *53 – 20 as 53, 43, 33*

## Year 2

### Using place value

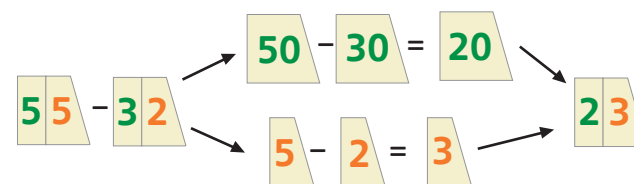
Know 1 less or 10 less than any number

e.g. *1 less than 74*

e.g. *10 less than 82*

Partitioning

e.g. *55 – 32 as 50 – 30 and 5 – 2 and combine the answers: 20 + 3*



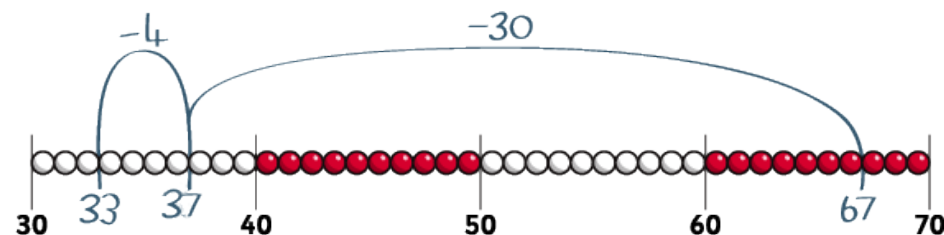
### Taking away

Subtract 10 and multiples of 10

e.g. *76 – 20 as 76, 66, 56 or in one hop: 76 – 20 = 56*

Subtract two 2-digit numbers by counting back in 10s, then in 1s

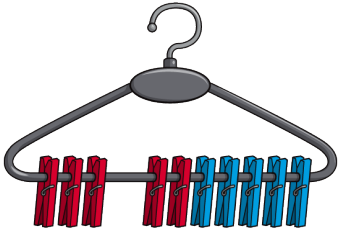
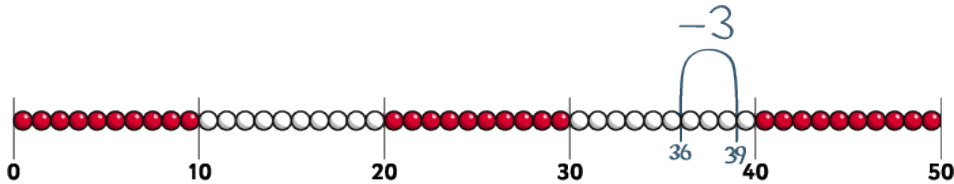
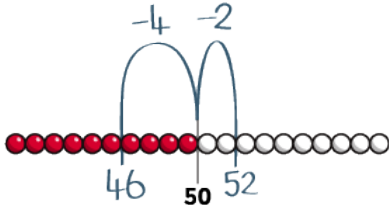
e.g. *67 – 34 as 67 subtract 30 (37) then count back 4 (33)*



Subtract near multiples of 10

e.g. *74 – 21*

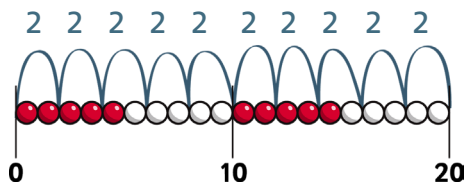
e.g. *57 – 19*

	Year 1	Year 2
Mental subtraction	<p><b>Using number facts</b></p> <p>'Story' of 4, 5, 6, 7, 8 and 9</p> <p>e.g. 'Story' of 7 is <math>7 - 1 = 6</math>, <math>7 - 2 = 5</math>, <math>7 - 3 = 4</math></p> <p>Number bonds to 10</p> <p>e.g. <math>10 - 1 = 9</math>, <math>10 - 2 = 8</math>, <math>10 - 3 = 7</math></p>  <p><math>10 - 7 = 3</math></p> <p>Subtract using patterns of known facts</p> <p>e.g. <math>7 - 3 = 4</math> so we know <math>27 - 3 = 24</math>, <math>47 - 3 = 44</math>, <math>77 - 3 = 74</math></p>	<p><b>Using number facts</b></p> <p>Know pairs of numbers which make the numbers up to and including 12 and derive related subtraction facts</p> <p>e.g. <math>10 - 6 = 4</math>, <math>8 - 3 = 5</math>, <math>5 - 2 = 3</math></p> <p>Subtract using patterns of known facts</p> <p>e.g. <math>9 - 3 = 6</math>, so we know <math>39 - 3 = 36</math>, <math>69 - 3 = 66</math>, <math>89 - 3 = 86</math></p>  <p>Bridging 10</p> <p>e.g. <math>52 - 6</math> as <math>52 - 2 (50) - 4 = 46</math></p>  <p><b>Counting up</b></p> <p>Find a difference between two numbers on a line where the numbers are close together</p> <p>e.g. <math>51 - 47</math></p>

## Year 1

### Counting in steps ('clever' counting)

Count in 2s



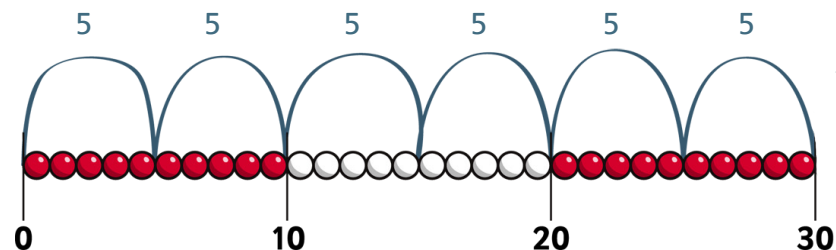
Count in 10s

I	2	3	4	5	6	7	8	9	
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

## Year 2

### Counting in steps ('clever' counting)

Count in 2s, 5s and 10s

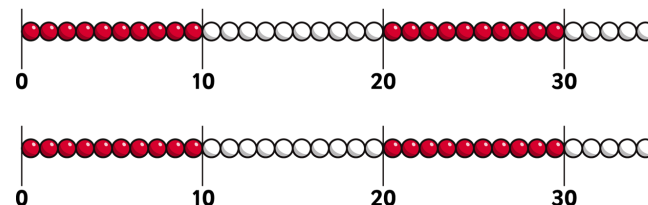


Begin to count in 3s

### Doubling and halving

Begin to know doubles of multiples of 5 to 100

e.g. *double 35 is 70*



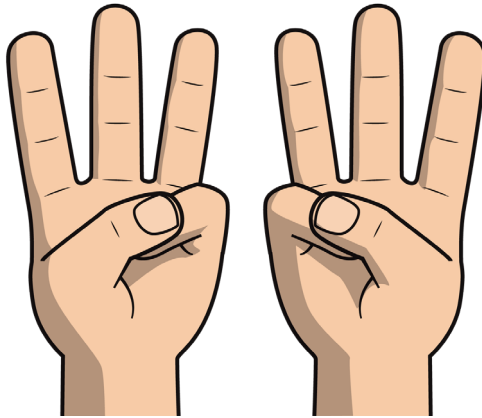
Begin to double 2-digit numbers less than 50 with 1s digits of 1, 2, 3, 4 or 5

## Year 1

### Doubling and halving

Find doubles to double 5 using fingers

e.g. *double 3*



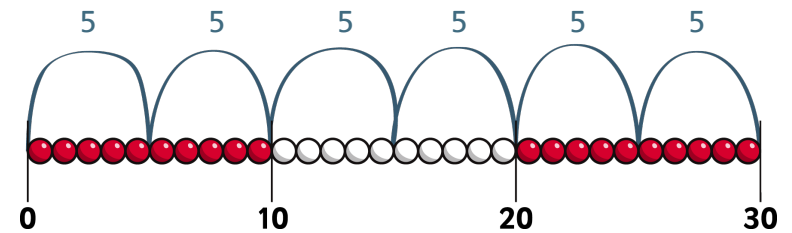
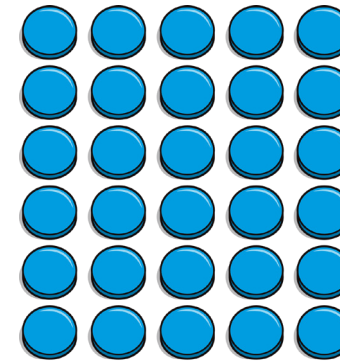
## Year 2

### Grouping

Use arrays to find answers to multiplication and relate to 'clever' counting

e.g.  $3 \times 4$  as *three lots of four things*

e.g.  $6 \times 5$  as *six steps in the 5s count as well as six lots of five*



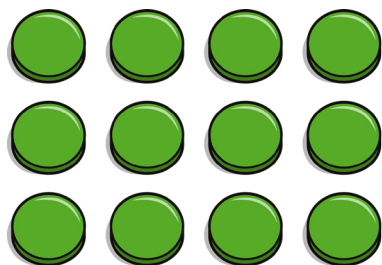
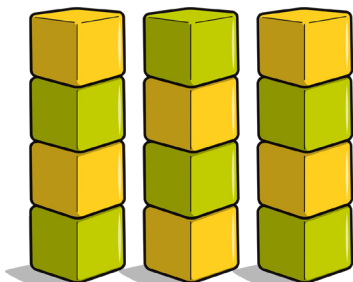
Understand that  $5 \times 3$  can be worked out as three 5s or five 3s

## Year 1

### Grouping

Begin to use visual and concrete arrays and sets of objects to find the answers to 'three lots of four' or 'two lots of five'

e.g. *three lots of four*

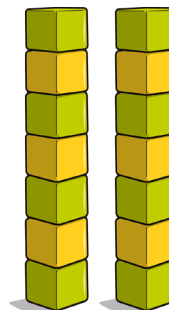


## Year 2

### Using number facts

Know doubles to double 20

e.g. *double 7 is 14*



Start learning  $\times 2$ ,  $\times 5$ ,  $\times 10$  tables, relating these to 'clever' counting in 2s, 5s, and 10s

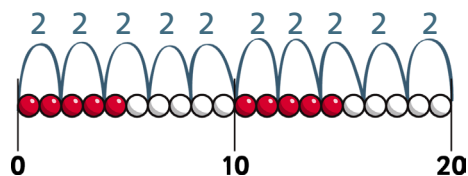
e.g.  $5 \times 10 = 50$ , and five steps in the 10s count = 10, 20, 30, 40, 50



## Year 1

### Counting in steps ('clever' counting)

Count in 2s

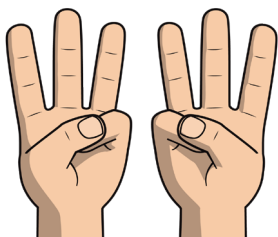


Count in 10s

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

### Doubling and halving

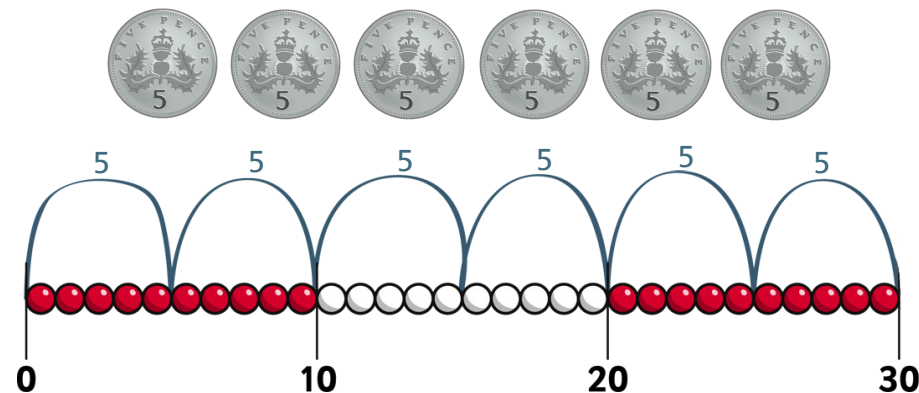
Find half of even numbers up to 12, including realising that it is hard to halve an odd number



## Year 2

### Counting in steps ('clever' counting)

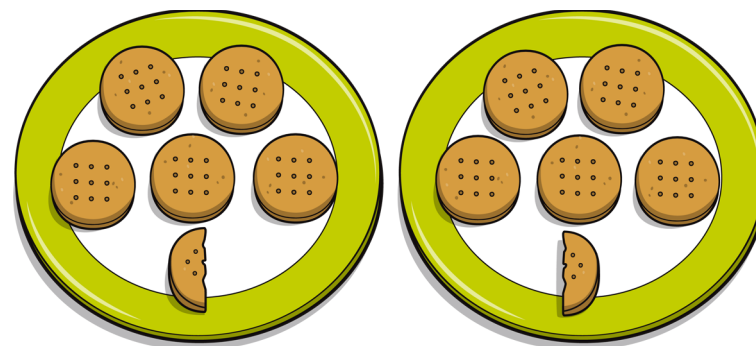
Count in 2s, 5s and 10s



Begin to count in 3s

### Doubling and halving

Find half of numbers up to 40, including realising that half of an odd number gives a remainder of 1 or an answer containing a  $\frac{1}{2}$   
e.g.  $\frac{1}{2}$  of 11 =  $5\frac{1}{2}$



Begin to know half of multiples of 10 to 100  
e.g. half of 70 is 35



## Year 1

### Grouping

Begin to use visual and concrete arrays and 'sets of' objects to find the answers to questions such as 'How many towers of three can I make with twelve cubes?'

### Sharing

Begin to find half of a quantity using sharing

e.g. find half of 16 cubes by giving one each repeatedly to two children

## Year 2

### Grouping

Relate division to multiplication by using arrays or towers of cubes to find answers to division

e.g. 'How many towers of five cubes can I make from twenty cubes?' as  $\_ \times 5 = 20$  and also as  $20 \div 5 = \_$



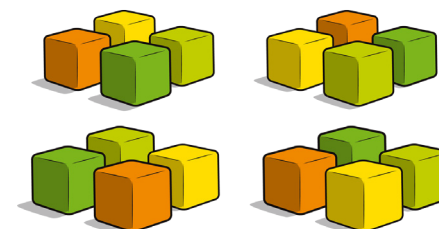
Relate division to 'clever' counting and hence to multiplication

e.g. 'How many fives do I count to get to twenty?'

### Sharing

Begin to find half or a quarter of a quantity using sharing

e.g. find a quarter of 16 cubes by sorting the cubes into four piles



Find  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  of small quantities

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

### Using number facts

Know half of even numbers to 24

Know  $\times 2$ ,  $\times 5$  and  $\times 10$  division facts

Begin to know  $\times 3$  division facts