

Introduction

This book visually displays pictorial representations of arithmetic number sentences. This will allow maths learners in Year 2 to understand a range of arithmetic methods and strategies. There are no written methods, encouraging you and your child to discuss how the number sentences have been calculated. Your child can learn different methods and strategies through frequent practice, ensuring the development of their arithmetic understanding, knowledge and skills.

A variety of maths resources are pictorially represented.

- Place Value Chart
- Base 10
- Numicon
- Multilink Cubes
- Counters
- Tens Frame
- Number Lines
- Number Grids
- Part Whole Models
- Bar Models
- Groups of

Concrete - the use of objects that can be handled or manipulated to explain how to accurately calculate the number sentence.

Pictorial - the use of mathematical images to show representations of the accurate calculation of the number sentence.

Abstract - the use of efficient formal written methods applied to prove the accurate calculation of the number sentence.

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How many 100s, 10s and 1s	1
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Adding

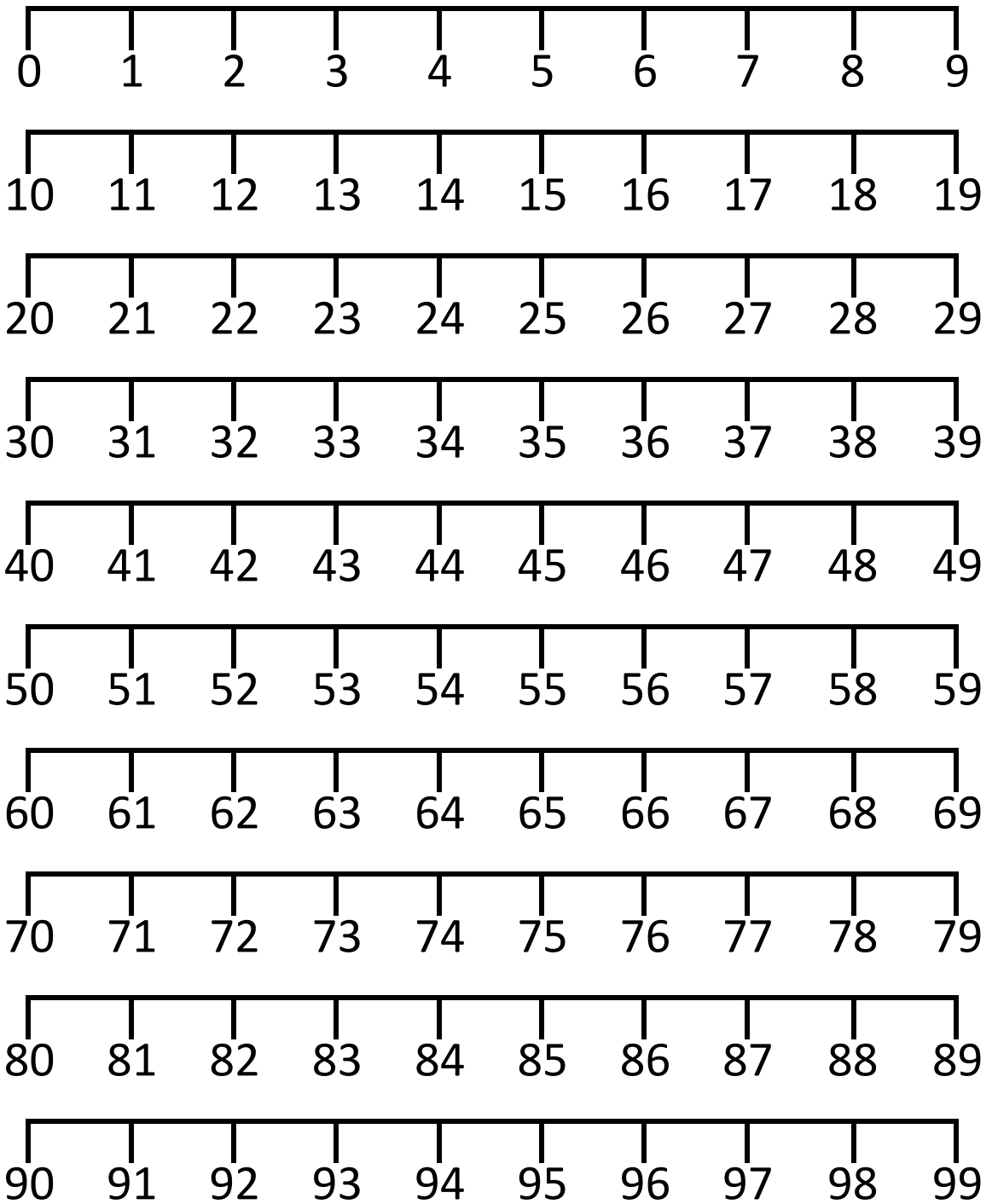
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Number Line



Number Grid

0	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	101	102	103	104	105	106	107	108	109
110	111	112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127	128	129
130	131	132	133	134	135	136	137	138	139
140	141	142	143	144	145	146	147	148	149



2x tables, counting on 2 more

2	x	0	=	0
2	x	1	=	2 = 2
2	x	2	=	2+2 = 4
2	x	3	=	2+2+2 = 6
2	x	4	=	2+2+2+2 = 8
2	x	5	=	2+2+2+2+2 = 10
2	x	6	=	2+2+2+2+2+2 = 12
2	x	7	=	2+2+2+2+2+2+2 = 14
2	x	8	=	2+2+2+2+2+2+2+2 = 16
2	x	9	=	2+2+2+2+2+2+2+2+2 = 18
2	x	10	=	2+2+2+2+2+2+2+2+2+2 = 20
2	x	11	=	2+2+2+2+2+2+2+2+2+2+2 = 22
2	x	12	=	2+2+2+2+2+2+2+2+2+2+2+2 = 24

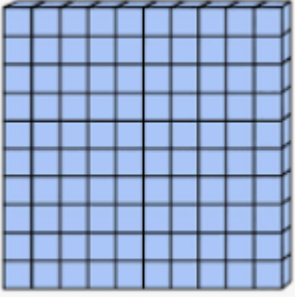
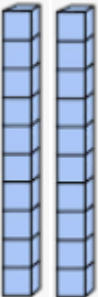

3x tables, counting on 3 more

3	x	0	=	0
3	x	1	=	3 = 3
3	x	2	=	3+3 = 6
3	x	3	=	3+3+3 = 9
3	x	4	=	3+3+3+3 = 12
3	x	5	=	3+3+3+3+3 = 15
3	x	6	=	3+3+3+3+3+3 = 18
3	x	7	=	3+3+3+3+3+3+3 = 21
3	x	8	=	3+3+3+3+3+3+3+3 = 24
3	x	9	=	3+3+3+3+3+3+3+3+3 = 27
3	x	10	=	3+3+3+3+3+3+3+3+3+3 = 30
3	x	11	=	3+3+3+3+3+3+3+3+3+3+3 = 33
3	x	12	=	3+3+3+3+3+3+3+3+3+3+3+3 = 36

How many hundreds, tens or ones

Hundreds 100s	Tens 10s	Ones 1s
	1 	5 

15 (2-digits) = 1 tens (10s) and 5 ones (1s)

Hundreds 100s	Tens 10s	Ones 1s
1 	2 	5 

125 (3-digits) = 1 hundreds (100s), 2 tens (10s) and 5 ones (1s)

Questions

1) 14 =

3) 21 =

5) 70 =

7) 123 =

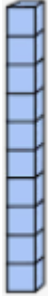

2) 18 =

4) 45 =

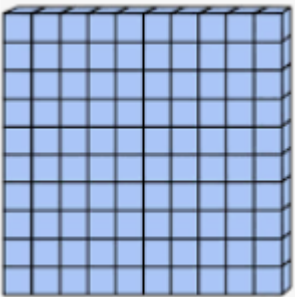
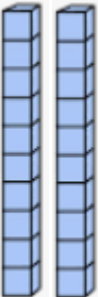

6) 83 =

8) 139 =

Value of each digit

Hundreds 100s	Tens 10s	Ones 1s
	1 	5 

15 (2-digits) = 1 tens x 10 (10s) = 10
5 ones x 1 (1s) = 5

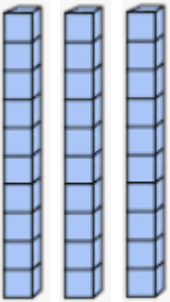

Hundreds 100s	Tens 10s	Ones 1s
1 	2 	5 

125 (3-digits) = 1 hundreds x 100 (100s) = 100
2 tens x 10 (10s) = 20
5 ones x 1 (1s) = 5

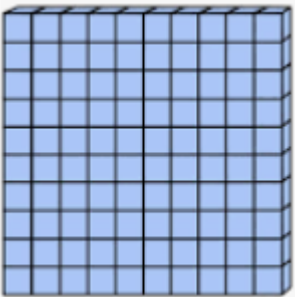
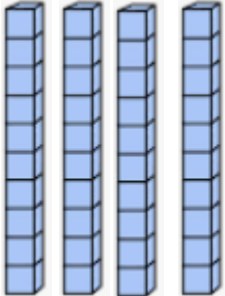

Questions

- | | | | |
|---------|---------|---------|----------|
| 1) 15 = | 3) 24 = | 5) 57 = | 7) 123 = |
| 2) 20 = | 4) 32 = | 6) 68 = | 8) 139 = |

Standard partitioning

Hundreds 100s	Tens 10s	Ones 1s
	3	5
		

$$\begin{aligned}
 35 \text{ (2-digits)} &= 3 \text{ tens} \times 10 \text{ (10s)} = 30 \\
 &5 \text{ ones} \times 1 \text{ (1s)} = 5 \\
 35 \text{ (2-digits)} &= 30 + 5
 \end{aligned}$$

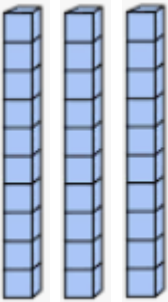

Hundreds 100s	Tens 10s	Ones 1s
1	4	5
		

$$\begin{aligned}
 145 \text{ (3-digits)} &= 1 \text{ hundreds} \times 100 \text{ (100s)} = 100 \\
 &4 \text{ tens} \times 10 \text{ (10s)} = 40 \\
 &5 \text{ ones} \times 1 \text{ (1s)} = 5 \\
 145 \text{ (3-digits)} &= 100 + 40 + 5
 \end{aligned}$$

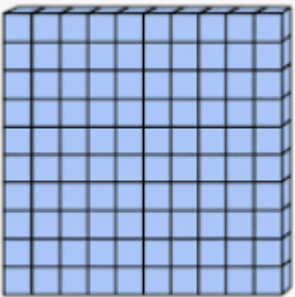
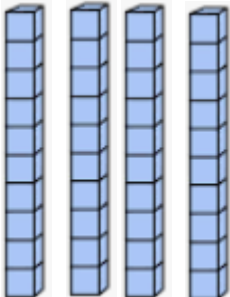

Questions

- | | | | |
|---------|---------|----------|----------|
| 1) 14 = | 3) 21 = | 5) 103 = | 7) 123 = |
| 2) 18 = | 4) 45 = | 6) 117 = | 8) 139 = |

Non-Standard partitioning

Hundreds 100s	Tens 10s	Ones 1s
	3	5
		

$$\begin{aligned}
 35 \text{ (2-digits)} &= 30 + 3 + 2 \\
 &= 20 + 10 + 5 \\
 &= 20 + 10 + 3 + 2
 \end{aligned}$$

Hundreds 100s	Tens 10s	Ones 1s
1	4	5
		

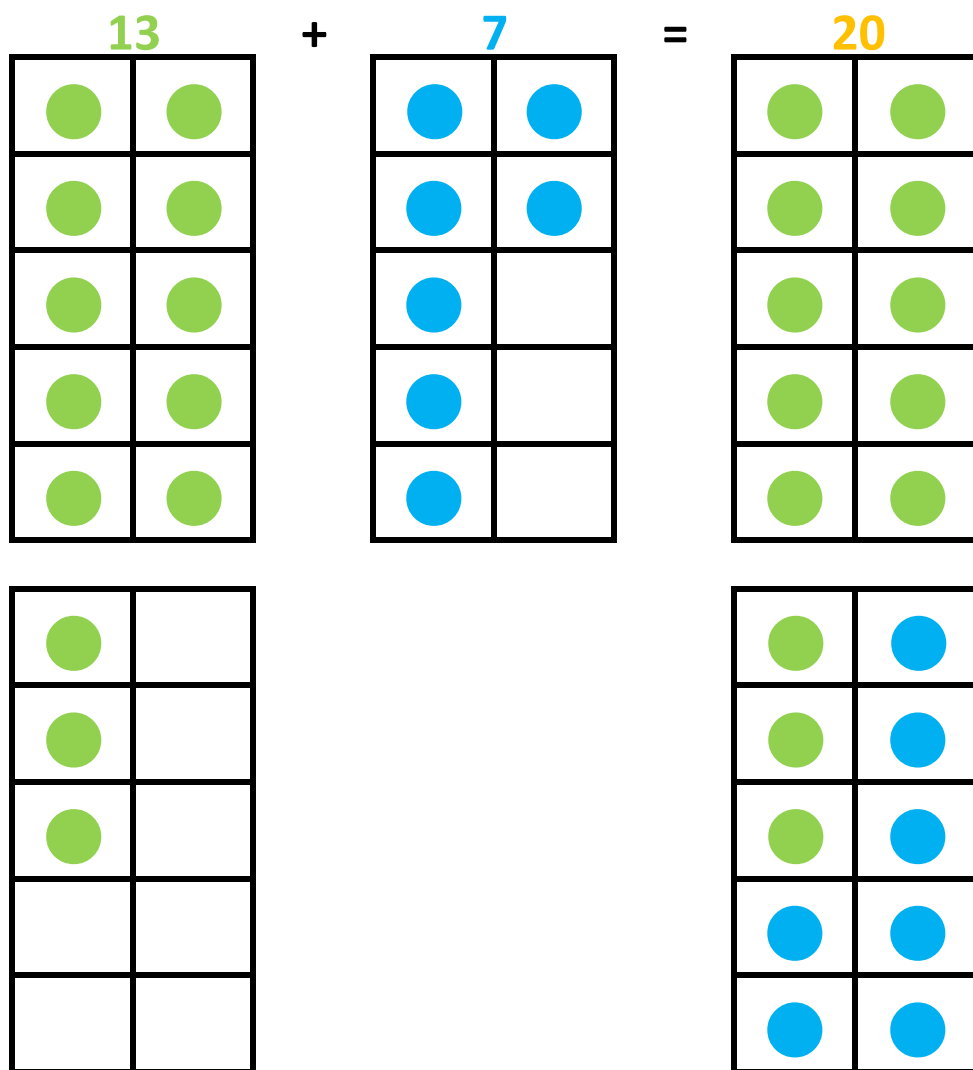
$$\begin{aligned}
 145 \text{ (3-digits)} &= 100 + 40 + 3 + 2 \\
 &= 100 + 20 + 20 + 5 \\
 &= 120 + 20 + 3 + 2
 \end{aligned}$$

Questions

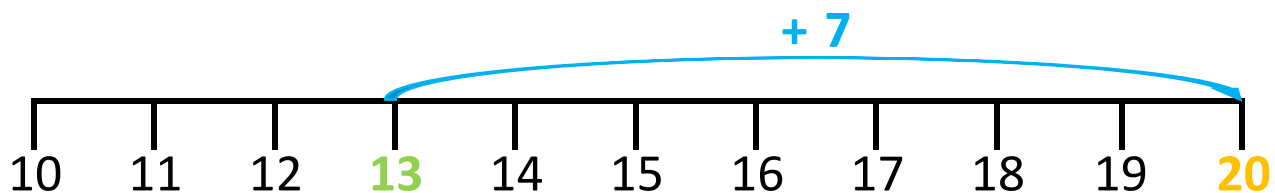
- | | | | |
|---------|---------|----------|----------|
| 1) 14 = | 3) 21 = | 5) 103 = | 7) 123 = |
| 2) 18 = | 4) 45 = | 6) 117 = | 8) 139 = |

Number bonds to twenty

Number Sentence



Number Line



Questions

- 1) $1 + 19 =$ 3) $5 + \underline{\quad} = 20$ 5) $\underline{\quad} + 12 = 20$
 2) $4 + 16 =$ 4) $9 + \underline{\quad} = 20$ 6) $\underline{\quad} + 14 = 20$

Number bonds to fifty

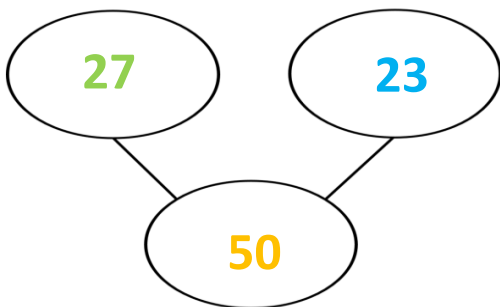
Number Sentence

$$27 + (10 + 10 + 3) = 50$$

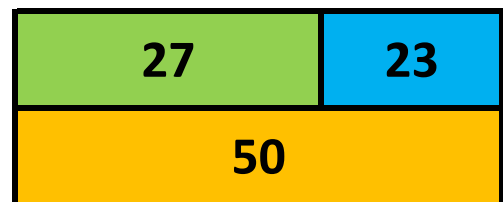
Number Grid

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

Part Whole Model



Bar Model



Questions

1) $17 + 33 = \underline{\quad}$
2) $5 + 45 = \underline{\quad}$

3) $10 + \underline{\quad} = 50$
4) $18 + \underline{\quad} = 50$

5) $\underline{\quad} + 30 = 50$
6) $\underline{\quad} + 28 = 50$

Number bonds to one hundred

Number Sentence

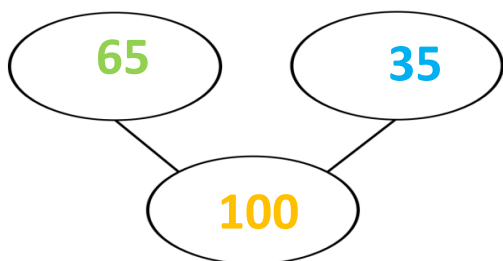
$$65 + 35 = 100$$

(10+10+10+5)

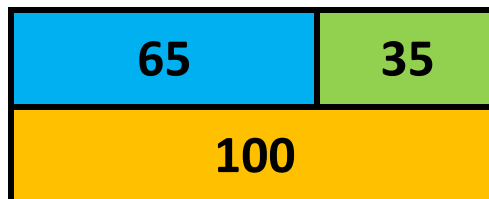
Number Grid

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
101	102	103	104	105	106	107	108	109	110

Part Whole Model



Bar Model



Questions

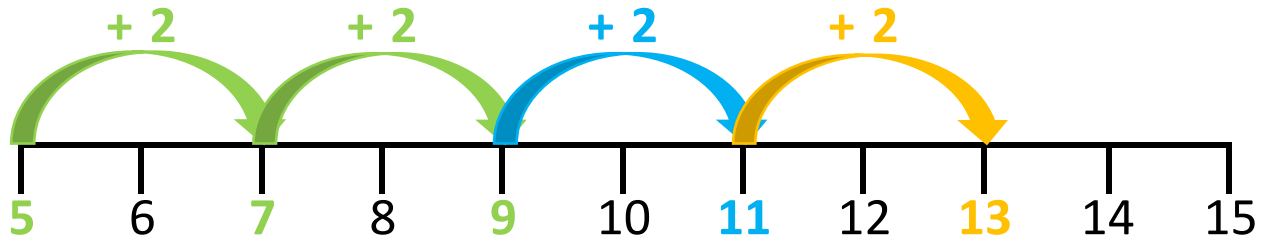
- | | | |
|--------------|---------------------------|---------------------------|
| 1) 35 + 65 = | 3) 10 + <u> </u> = 100 | 5) <u> </u> + 80 = 100 |
| 2) 55 + 45 = | 4) 45 + <u> </u> = 100 | 6) <u> </u> + 25 = 100 |

Number patterns of twos

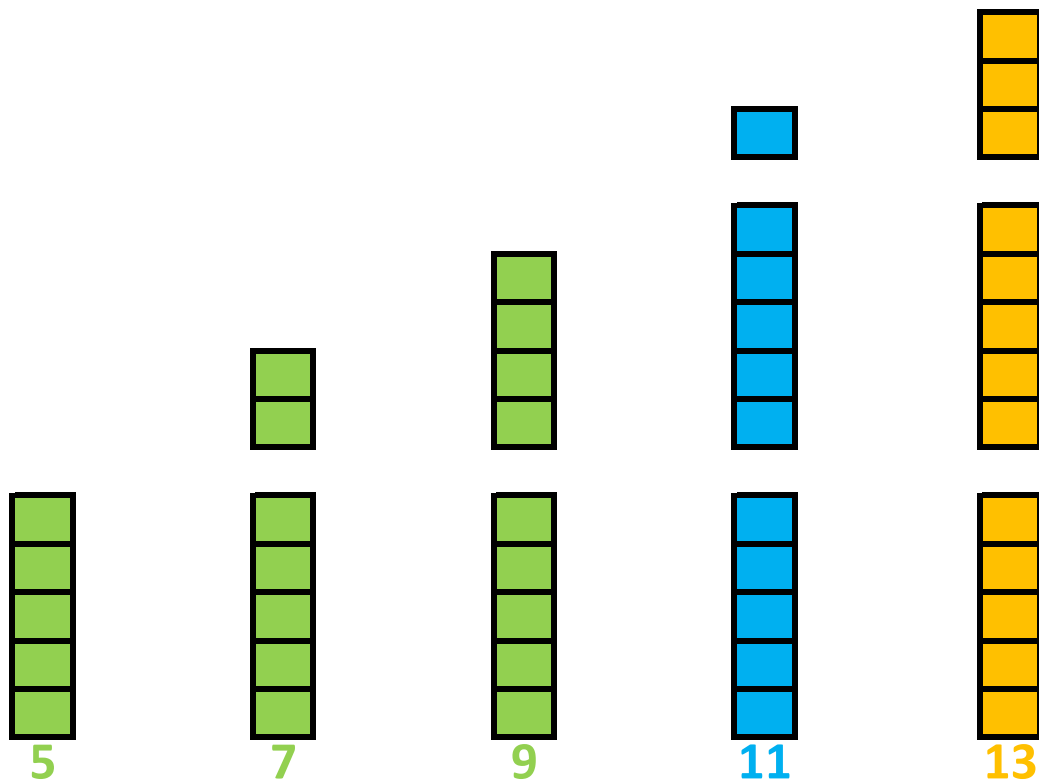
Number Sentence

$$5, 7, 9, ?, ? = 5, 7, 9, 11, 13$$

Number Line



Objects



Questions

1) 0, 2, 4, ,
2) 10, 12, 14, ,

3) 18, 20, 22, ,
4) 20, 22, 24, ,

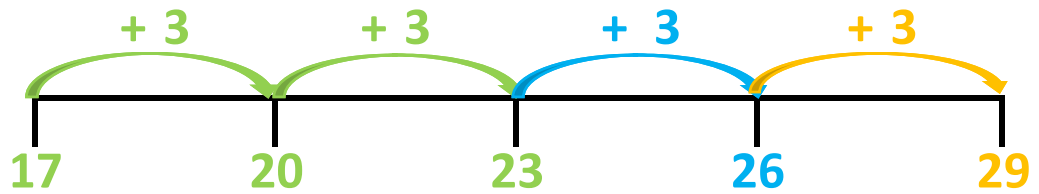
5) 32, 34, 36, ,
6) 68, 70, 72, ,

Number patterns of threes

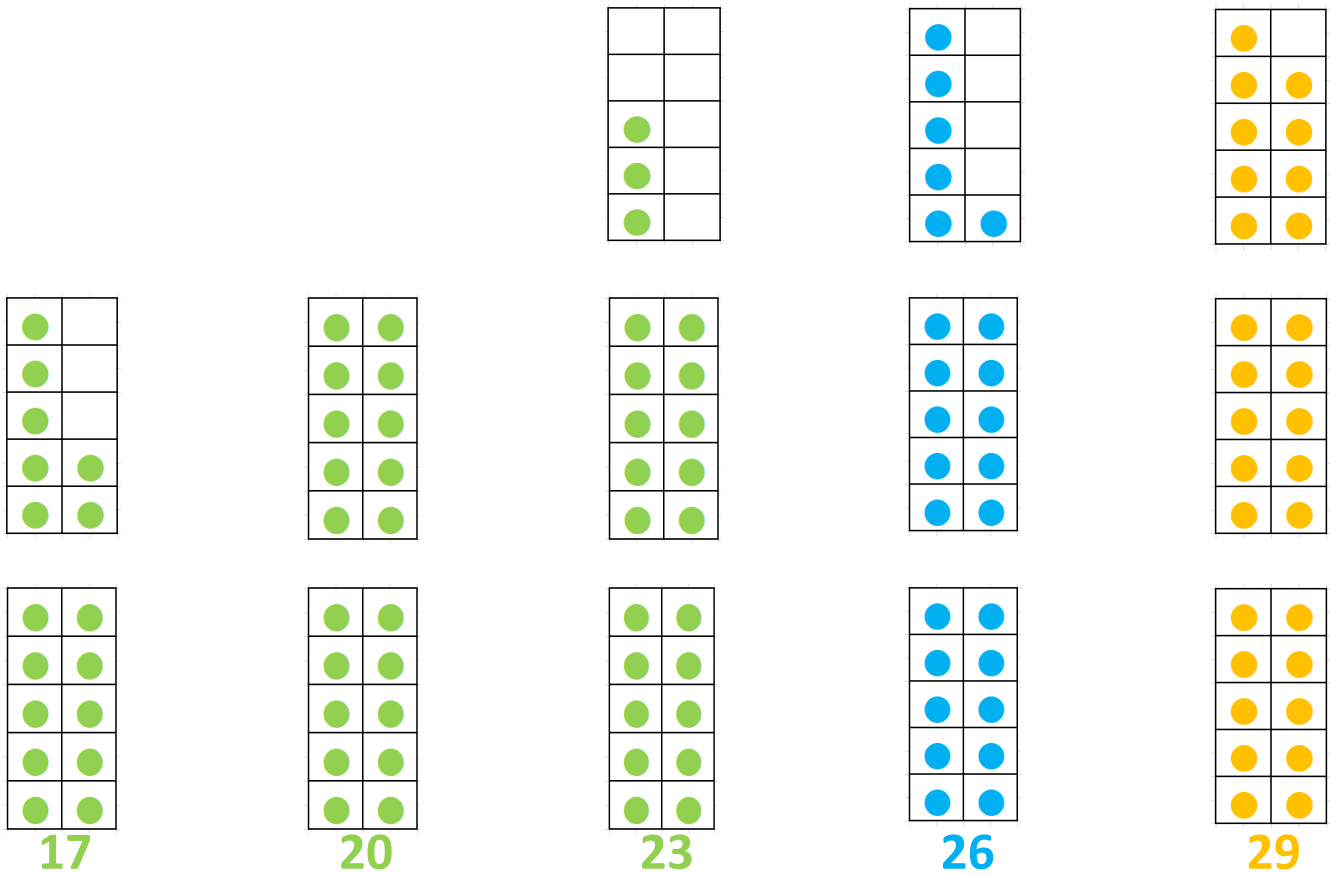
Number Sentence

$$17, 20, 23, ?, ? = 17, 20, 23, 26, 29$$

Number Line



Tens Frame



Questions

1) 3, 6, 9, ,
 2) 15, 18, 21, ,

3) 24, 27, 30, ,
 4) 33, 36, 39, ,

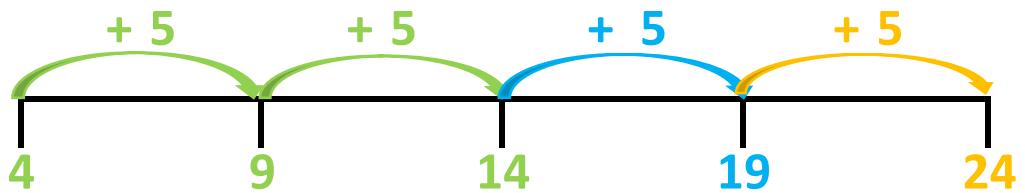
5) 42, 45, 48, ,
 6) 63, 66, 69, ,

Number patterns of fives

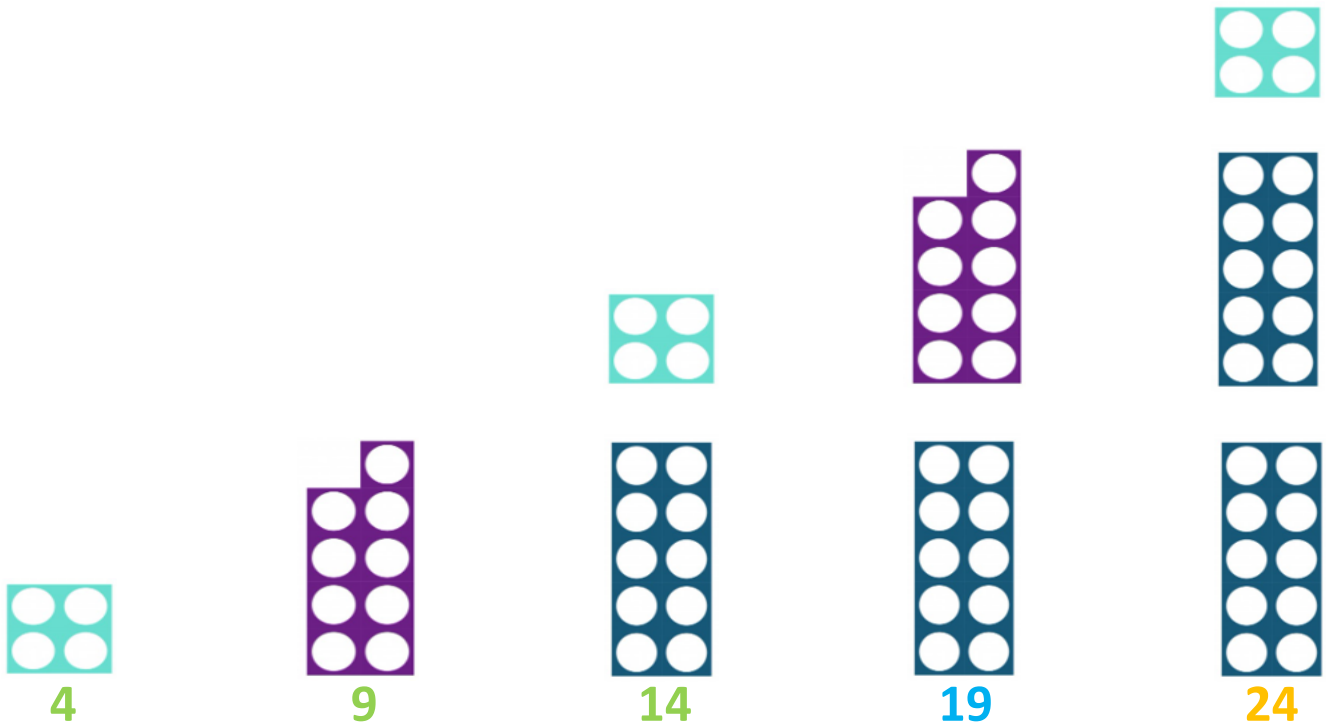
Number Sentence

$$4, 9, 14, ?, ? = 4, 9, 14, 19, 23$$

Number Line



Numicon



Questions

1) 2, 7, 12, ,
2) 14, 19, 24, ,

3) 28, 33, 38, ,
4) 35, 40, 45, ,

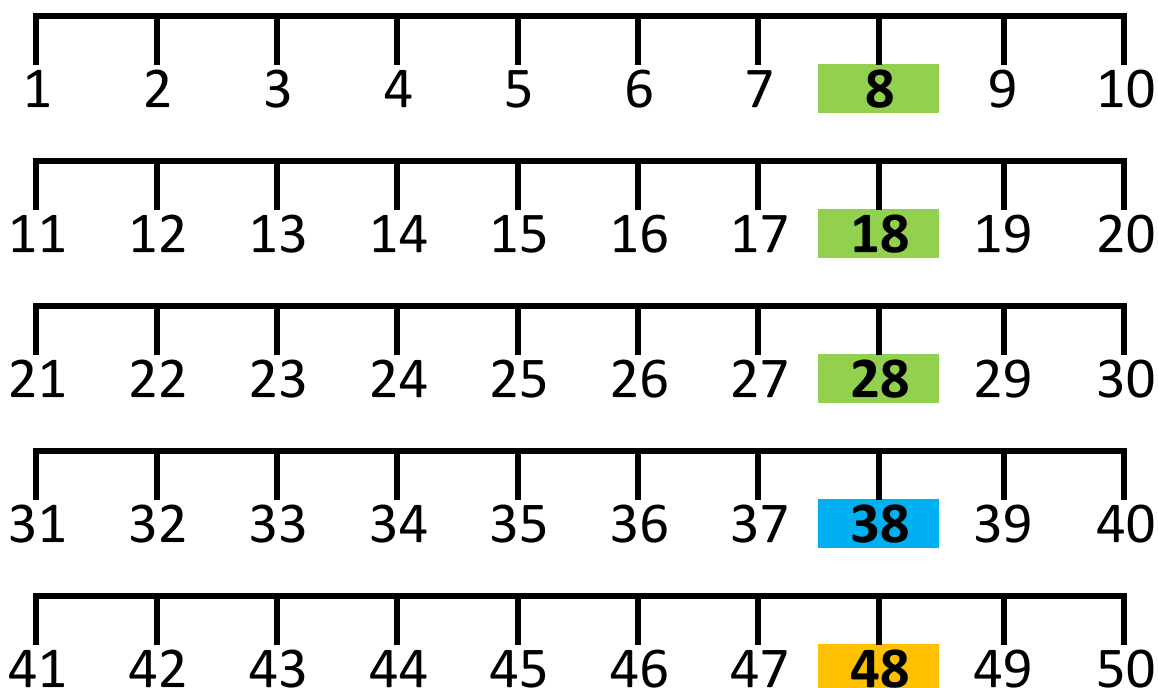
5) 45, 45, 50, ,
6) 55, 60, 65, ,

Number patterns of tens

Number Sentence

$$8, 18, 28, ?, ? = 8, 18, 28, 38, 48$$

Number Line



Number 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

Questions

1) 6, 16, 26, ,

2) 40, 50, 60, ,

3) 52, 62, 72, ,

4) 70, 80, 90, ,

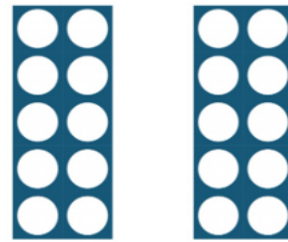
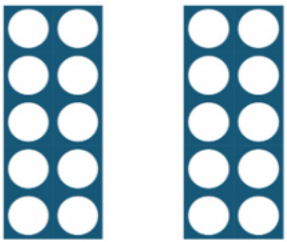
5) 90, 100, 110, ,

6) 120, 130, 140, ,

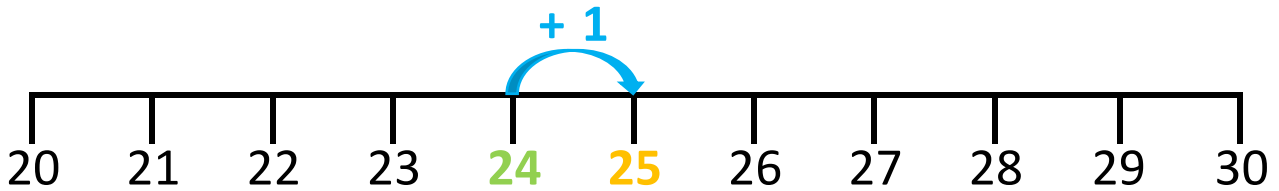
1 More

Number Sentence

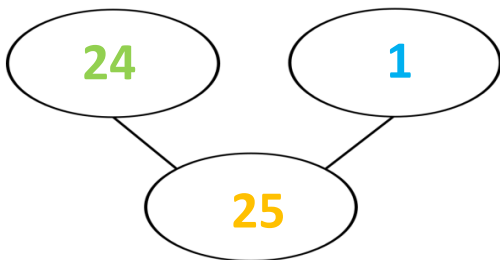
$$24 + 1 = 25$$



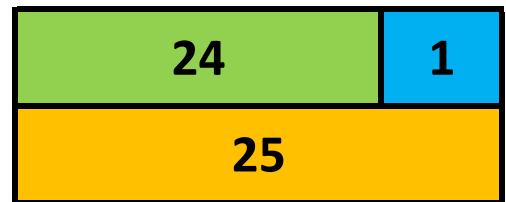
Number Line



Part Whole Model



Bar Model



Questions

1) $33 + 1 =$

3) $52 + 1 =$

5) $75 + 1 =$

2) $47 + 1 =$

4) $68 + 1 =$

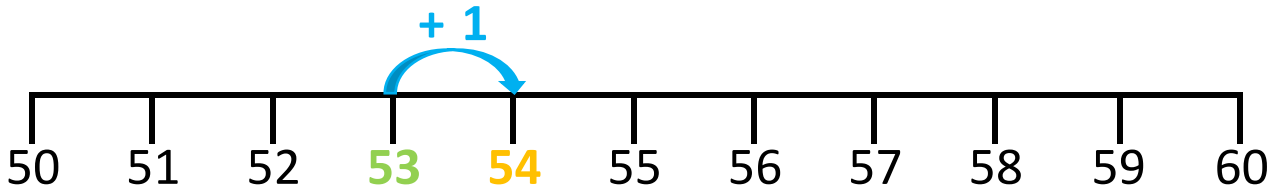
6) $99 + 1 =$

More than 1

Number Sentence

$$53 + 1 = 54$$

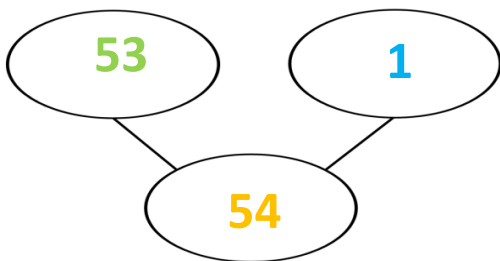
Number Line



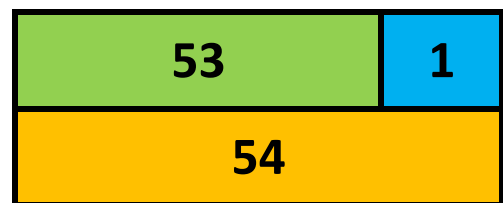
Number Grid

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

Part Whole Model



Bar Model



Questions

1) $15 + 1 =$

3) $29 + 1 =$

5) $67 + 1 =$

2) $22 + 1 =$

4) $43 + 1 =$

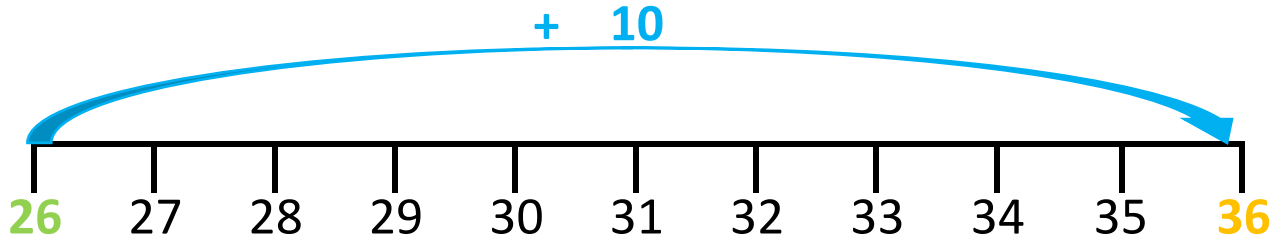
6) $96 + 1 =$

10 More

Number Sentence

$$26 + 10 = 36$$

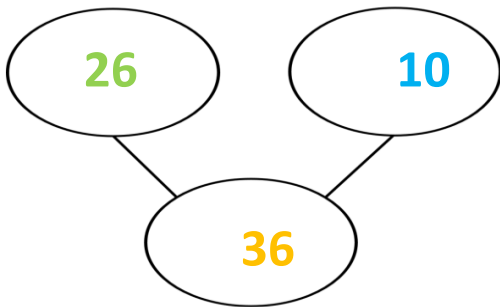
Number Line



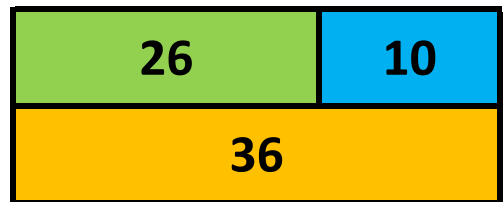
Number Grid

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

Part Whole Model



Bar Model



Questions

1) $37 + 10 =$

3) $51 + 10 =$

5) $73 + 10 =$

2) $48 + 10 =$

4) $62 + 10 =$

6) $85 + 10 =$

More than 10

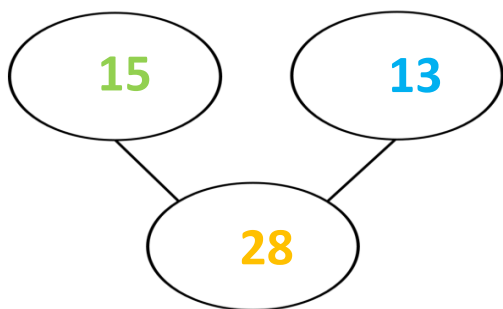
Number Sentence

$$23 + 18 = 41$$

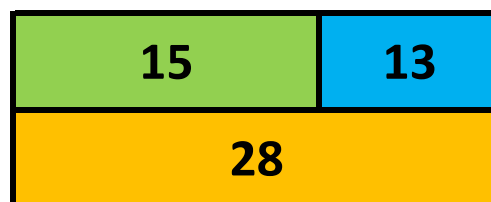
Number Grid

0	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	28	29	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49

Part Whole Model



Bar Model



Questions

1) $28 + 19 =$

3) $45 + 25 =$

5) $65 + 29 =$

2) $36 + 44 =$

4) $57 + 31 =$

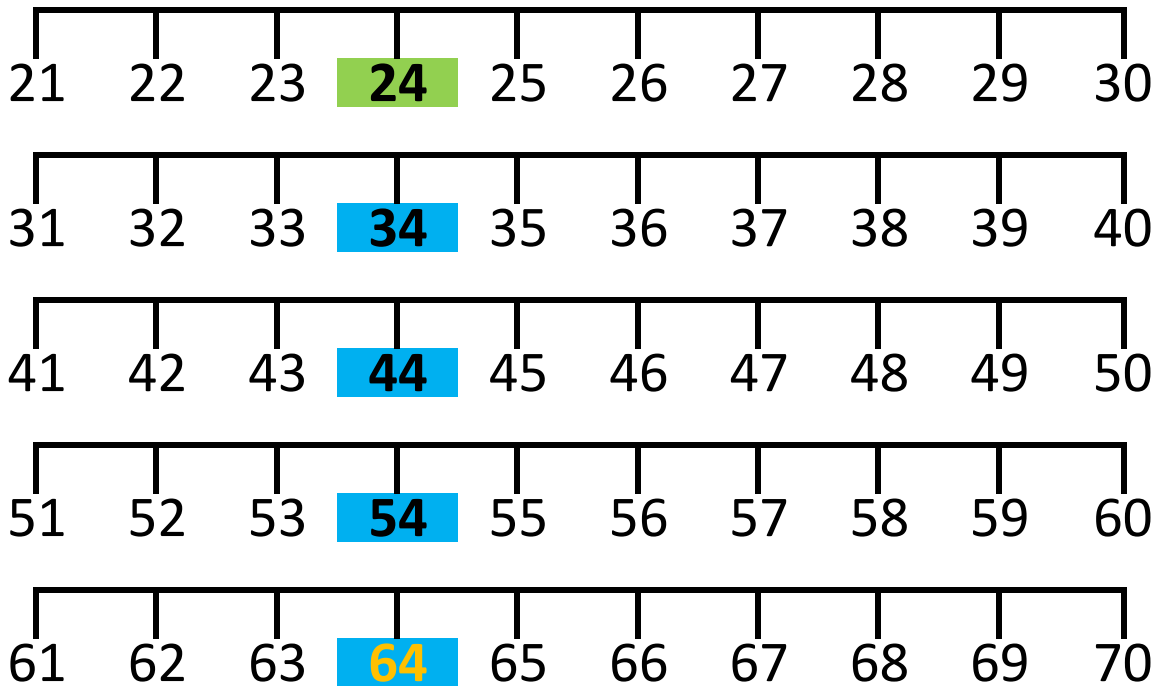
6) $85 + 14 =$

Multiples of 10

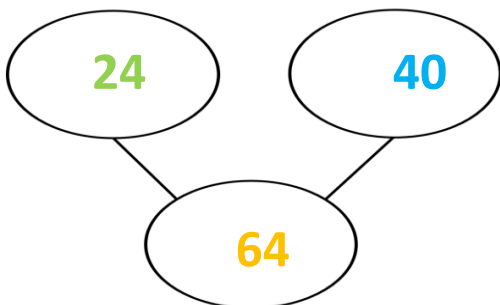
Number Sentence

$$24 + 40 = 64$$

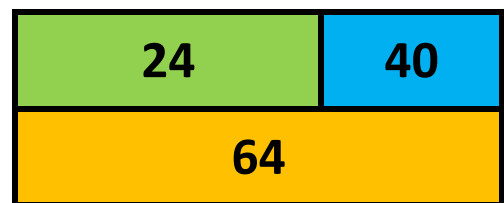
Number Line



Part Whole Model



Bar Model



Questions

1) $32 + 50 =$

3) $54 + 20 =$

5) $75 + 30 =$

2) $46 + 40 =$

4) $63 + 30 =$

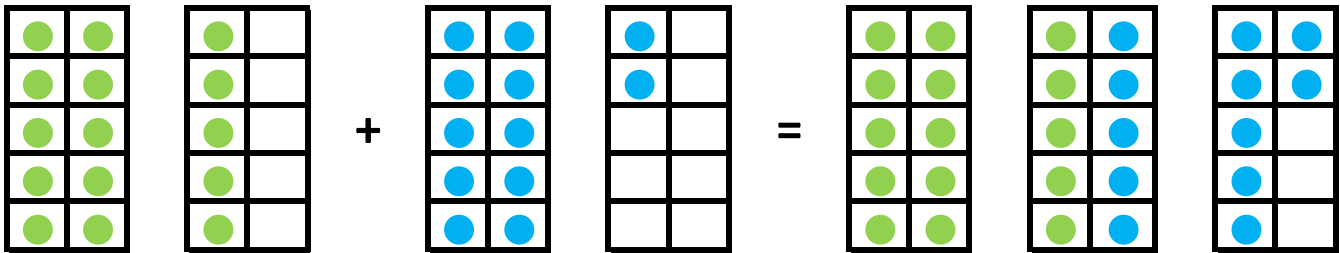
6) $89 + 20 =$

Doubling

Number Sentence

$$15 + 6 + 6 = 27$$

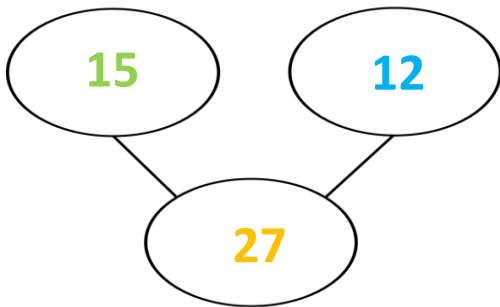
Tens Frame



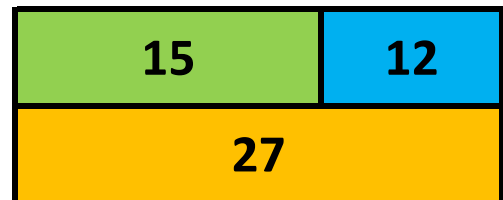
Number Grid

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Part Whole Model



Bar Model



Questions

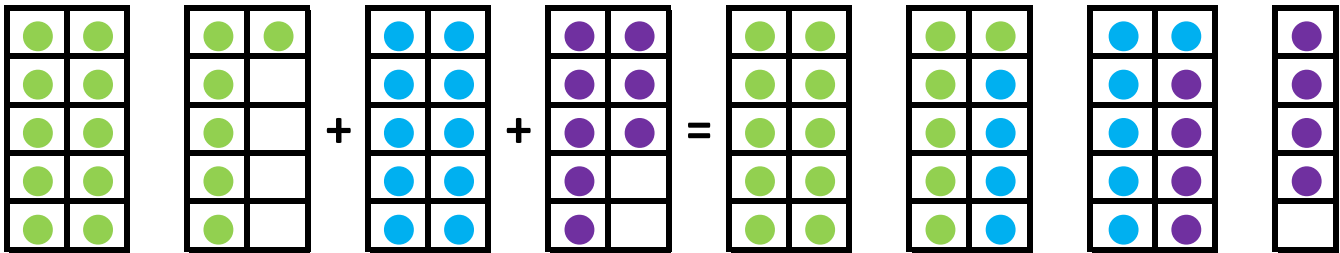
- 1) $8 + 8 =$ 5) $6 + 6 + 7 =$ 5) $30 + 3 + 3 =$
2) $9 + 9 =$ 6) $21 + 5 + 5 =$ 6) $15 + 15 + 15 =$

Three numbers

Number Sentence

$$16 + 10 + 8 = 34$$

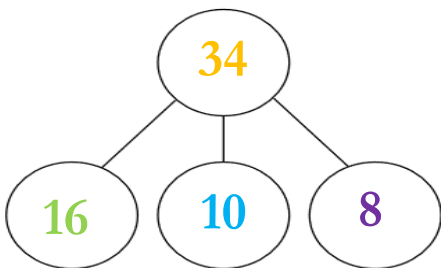
Tens Frame



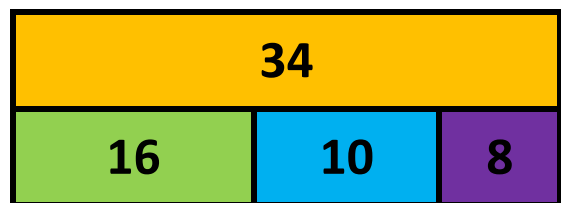
Number Grid

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

Part Whole Model



Bar Model



Questions

1) $4 + 3 + 5 =$

2) $9 + 4 + 10 =$

3) $20 + 40 + 30 =$

4) $10 + 20 + 60 =$

Column addition (exchanging)

Number Sentence

$$35 + 7 = 42$$

Step 1

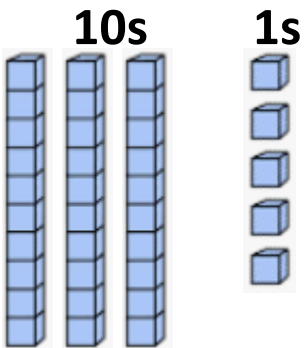
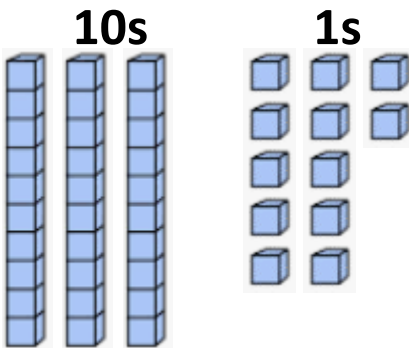
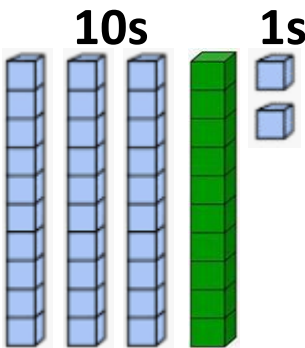
$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 3 \quad 5 \\ + \quad 7 \\ \hline \hline \end{array}$$

Step 2

$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 3 \quad 5 \\ + \quad 7 \\ \hline \quad 2 \\ \hline 1 \end{array}$$

Step 3

$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 3 \quad 5 \\ + \quad 7 \\ \hline 4 \quad 2 \\ \hline 1 \end{array}$$

Step 1	Step 2	Step 3
		

Questions

1) $18 + 5 =$

3) $34 + 8 =$

5) $34 + 28 =$

2) $26 + 7 =$

4) $25 + 19 =$

6) $47 + 39 =$

Column addition (exchanging)

Number Sentence

$$28 + 16 = 44$$

Step 1

$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 28 \\ + 16 \\ \hline \end{array}$$

Step 2

$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 28 \\ + 16 \\ \hline 4 \\ \hline 1 \end{array}$$

Step 3

$$\begin{array}{r} \underline{10s} \quad \underline{1s} \\ 28 \\ + 16 \\ \hline 44 \\ \hline 1 \end{array}$$

Step 1	Step 2	Step 3

Questions

1) $18 + 5 =$

3) $34 + 8 =$

5) $34 + 28 =$

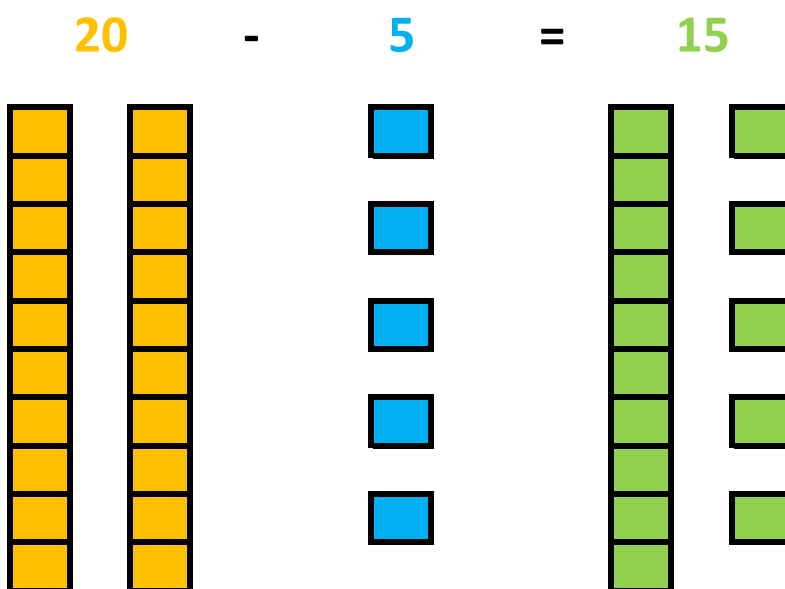
2) $26 + 7 =$

4) $25 + 19 =$

6) $47 + 39 =$

Number bonds to twenty

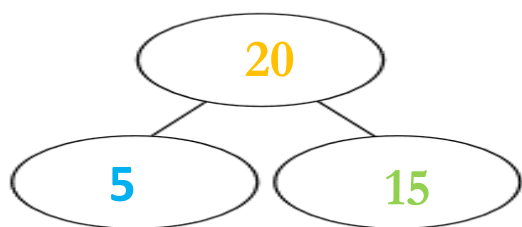
Number Sentence



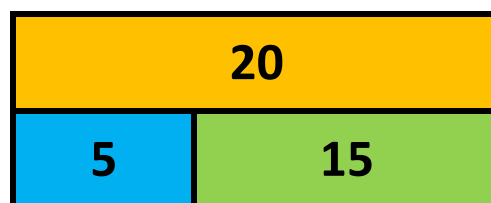
Number Grid

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Part Whole Model



Bar Model



Questions

1) $20 - 18 =$

3) $20 - 16 =$

5) $20 - 14 =$

2) $20 - 9 =$

4) $20 - 7 =$

6) $20 - 10 =$

Number bonds to fifty

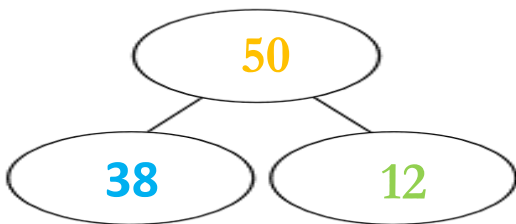
Number Sentence

$$50 - (10+10+10+8) = 12$$

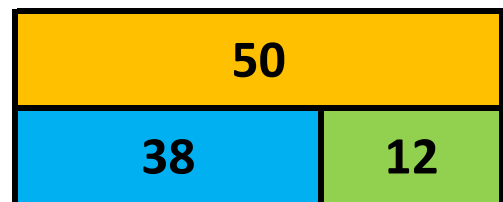
Number Grid

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

Part Whole Model



Bar Model



Questions

1) $50 - 43 =$

2) $50 - 36 =$

3) $50 - 40 =$

4) $50 - 35 =$

5) $50 - 30 =$

6) $50 - 25 =$

Number bonds to one hundred

Number Sentence

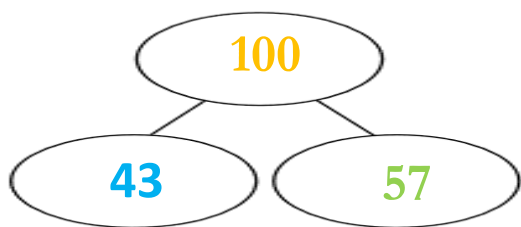
$$100 - 43 = 57$$

(10+10+10+10+3)

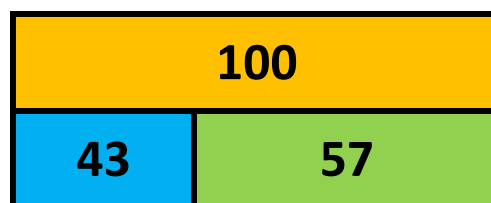
Number Grid

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

Part Whole Model



Bar Model



Questions

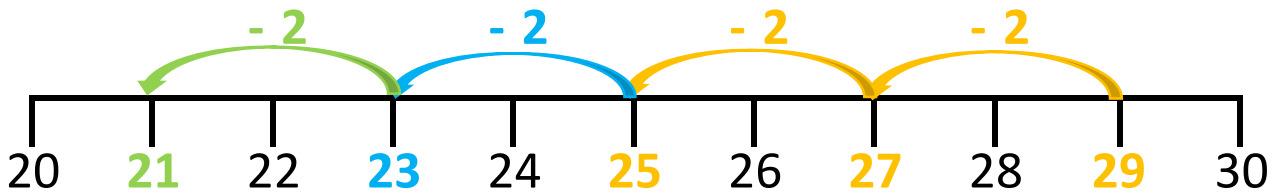
- 1) $100 - 68 = \underline{\quad}$ 3) $100 - 80 = \underline{\quad}$ 5) $100 - 10 =$
2) $100 - 47 = \underline{\quad}$ 4) $100 - 25 = \underline{\quad}$ 6) $100 - 65 =$

Number patterns of twos

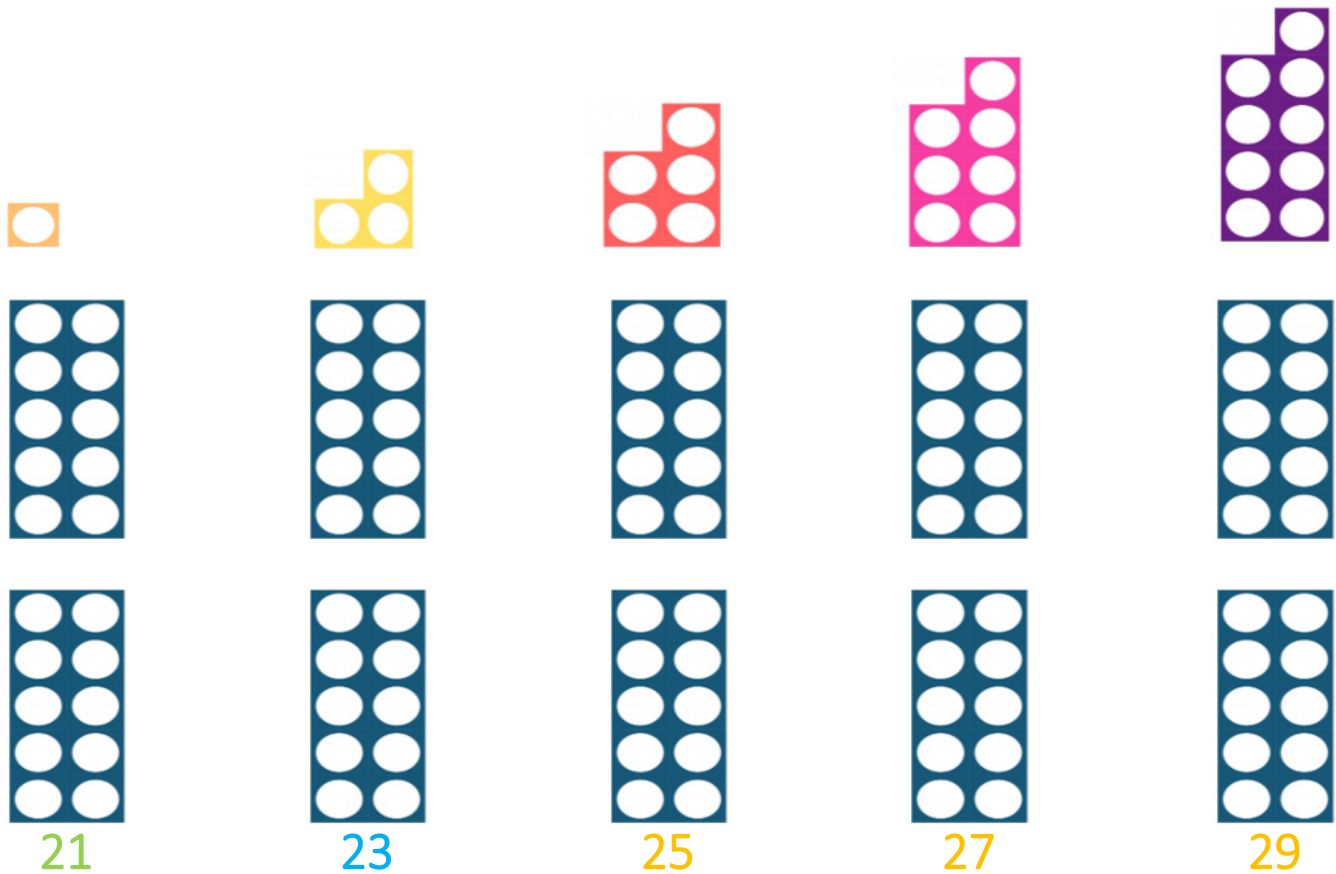
Number Sentence

$$29, 27, 25, ?, ? = 29, 27, 25, 23, 21$$

Number Line



Numicon



Questions

1) 30, 28, 26, ,
2) 33, 31, 29, ,

3) 42, 40, 38, ,
4) 51, 49, 47, ,

5) 60, 58, 56, ,
6) 78, 76, 74, ,

Number patterns of threes

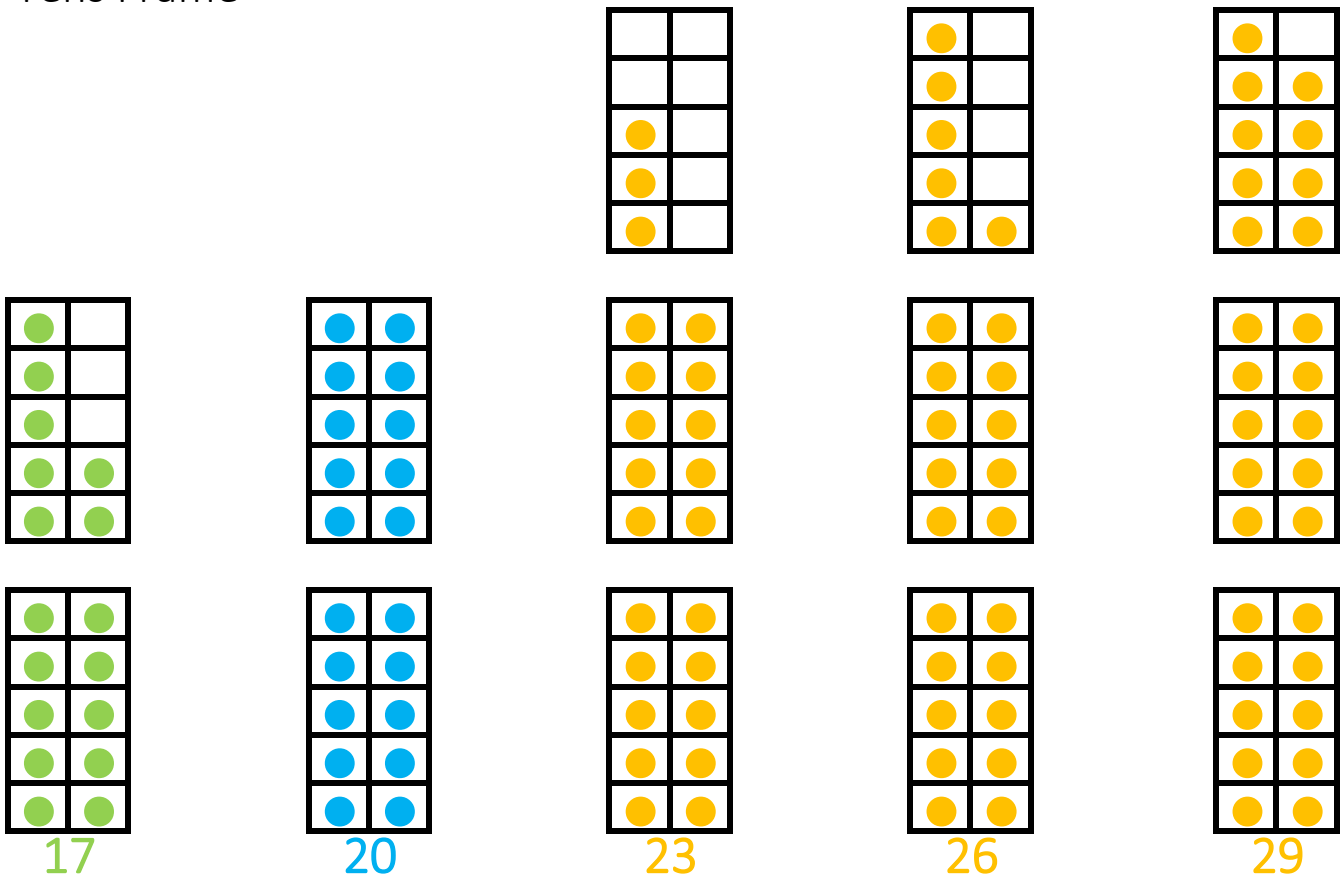
Number Sentence

$$29, 26, 23, ?, ? = 29, 26, 23, 20, 17$$

Number Grid

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Tens Frame



Questions

- 1) 28, 25, 22, ,
 2) 37, 34, 31, ,

- 3) 46, 43, 40, ,
 4) 52, 49, 46, ,

- 5) 63, 60, 57, ,
 6) 84, 81, 78, ,

Number patterns of fives

Number Sentence

$$83, 78, 73, ?, ? = 83, 78, 73, 68, 63$$

Number 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
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

Questions

1) 100, 95, 90, ,

2) 89, 84, 79, ,

3) 72, 67, 62, ,

4) 60, 55, 50, ,

5) 50, 45, 40, ,

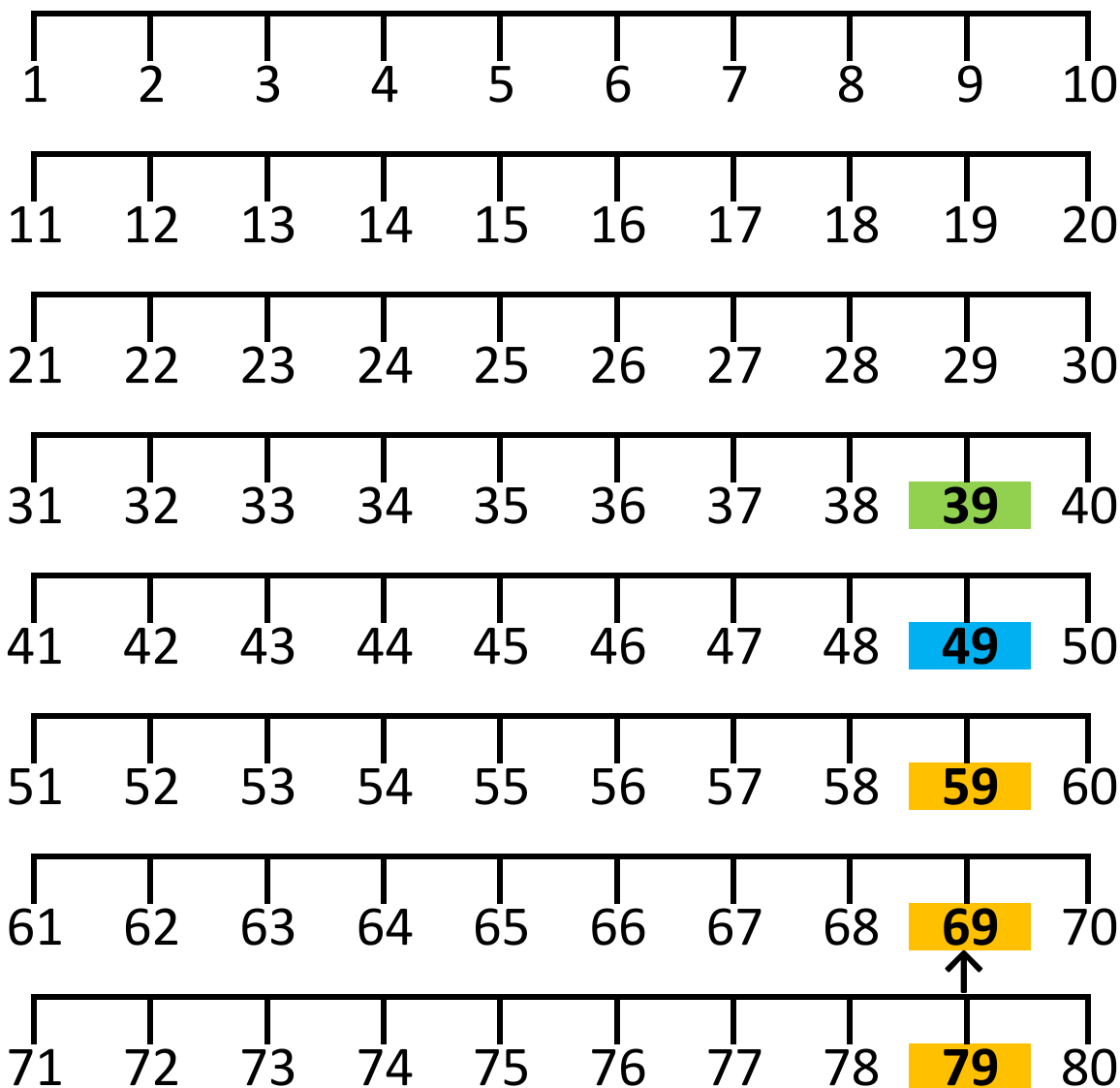
6) 38, 33, 28, ,

Number patterns of tens

Number Sentence

$$79, 69, 59, ?, ? = 79, 69, 59, 49, 39$$

Number Line



Questions

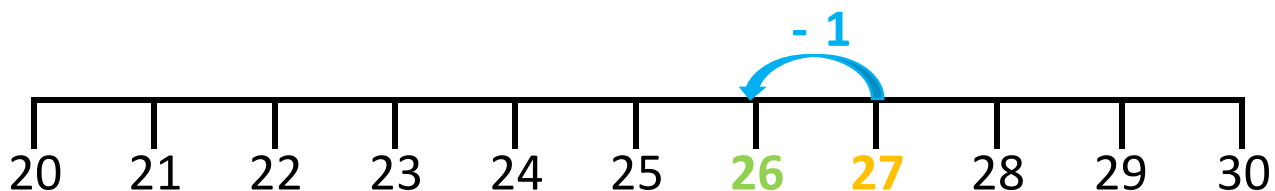
- 1) 80, 70, 60, , 3) 73, 63, 53, , 5) 130, 120, 110,
2) 90, 80, 70, , 4) 68, 58, 48, , 6) 180, 170, 160,

1 less

Number Sentence

$$27 - 1 = 26$$

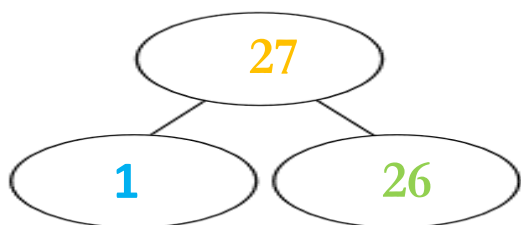
Number Line



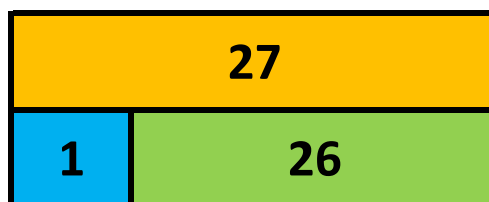
Number Grid

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

Part Whole Model



Bar Model



Questions

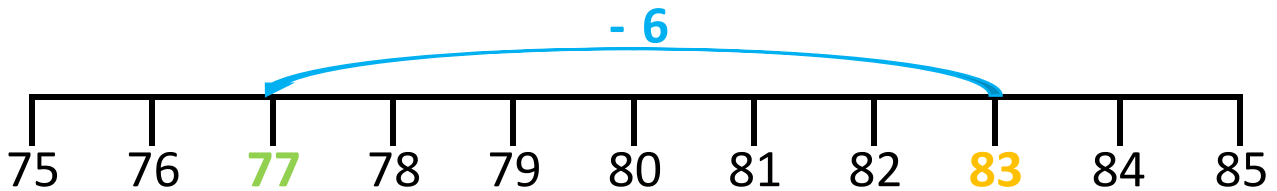
- 1) $15 - 1 = \underline{\quad}$ 3) $29 - 1 = \underline{\quad}$ 5) $67 - 1 = \underline{\quad}$
2) $22 - 1 = \underline{\quad}$ 4) $43 - 1 = \underline{\quad}$ 6) $96 - 1 = \underline{\quad}$

More than 1 less

Number Sentence

$$83 - 6 = 77$$

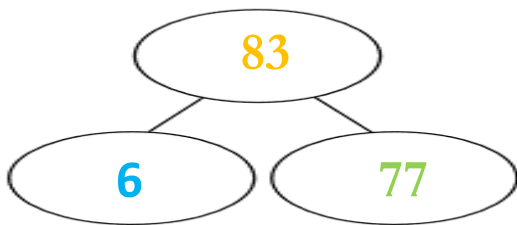
Number Line



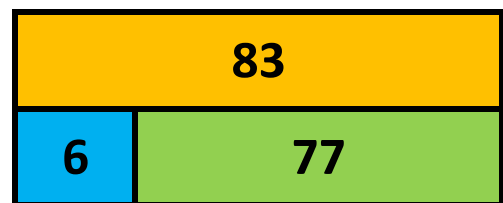
Number Grid

71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90

Part Whole Model



Bar Model



Questions

1) $25 - 3 =$

3) $44 - 5 =$

5) $81 - 4 =$

2) $39 - 6 =$

4) $56 - 3 =$

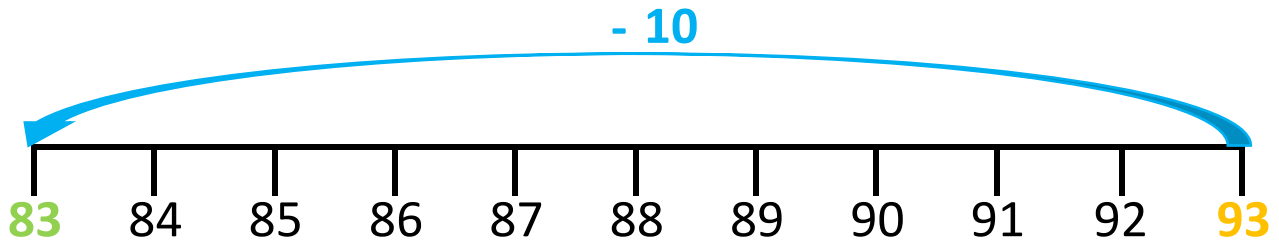
6) $97 - 7 =$

10 less

Number Sentence

$$93 - 10 = 83$$

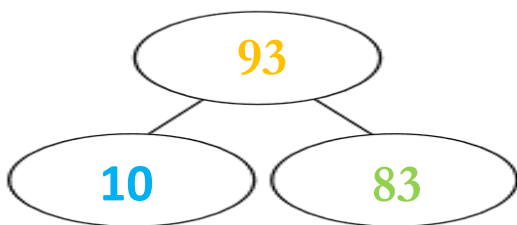
Number Line



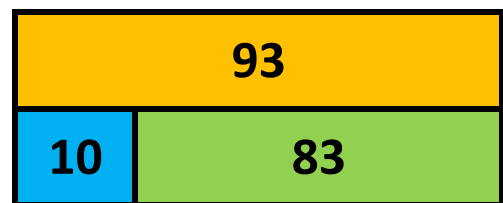
Number Grid

81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Part Whole Model



Bar Model



Questions

1) $40 - 10 =$

3) $70 - 10 =$

5) $38 - 10 =$

2) $90 - 10 =$

4) $29 - 10 =$

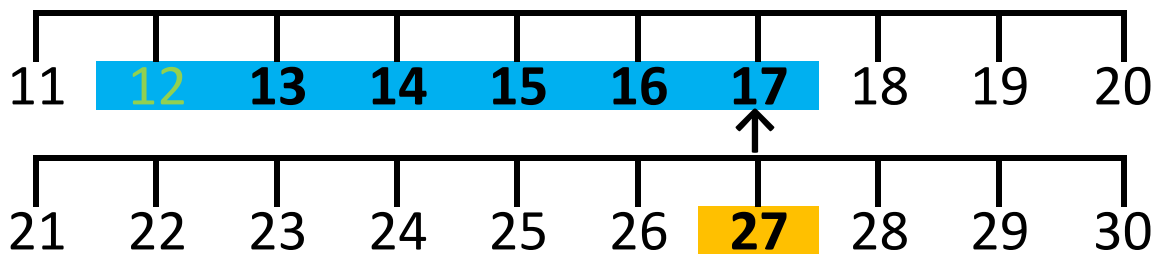
6) $73 - 10 =$

More than 10 less

Number Sentence

$$27 - 15 = 12$$

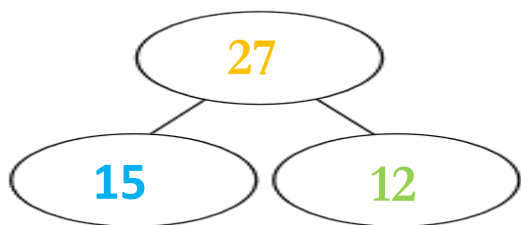
Number Line



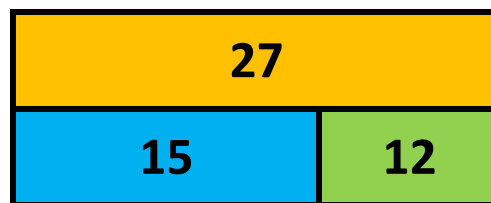
Number Grid

11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Part Whole Model



Bar Model



Questions

1) $28 - 13 =$

3) $47 - 15 =$

5) $78 - 19 =$

2) $39 - 17 =$

4) $55 - 22 =$

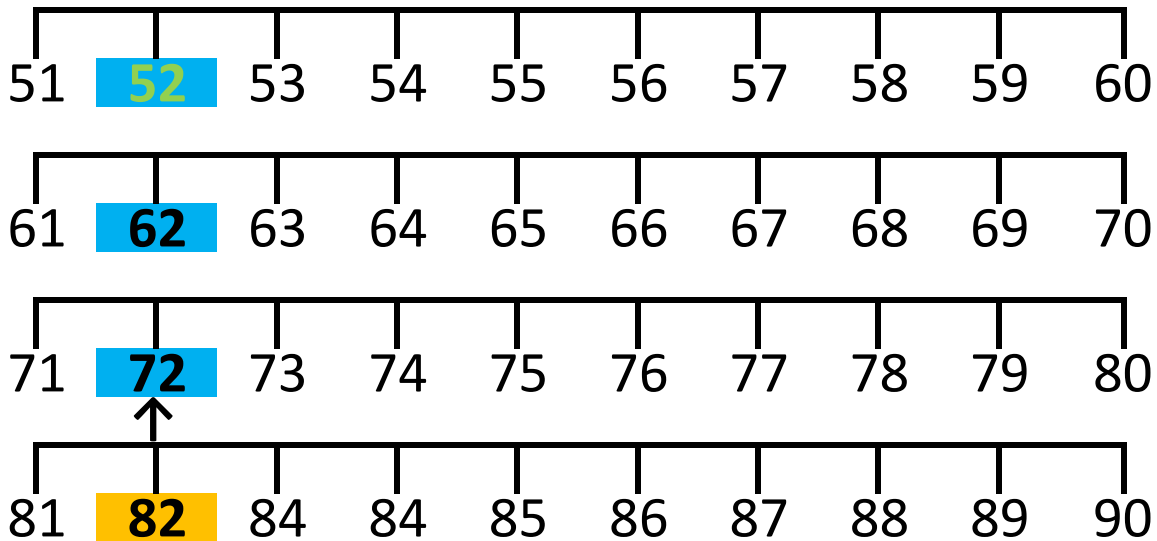
6) $83 - 34 =$

Multiples of 10

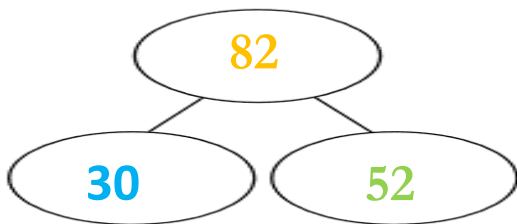
Number Sentence

$$82 - 30 = 52$$

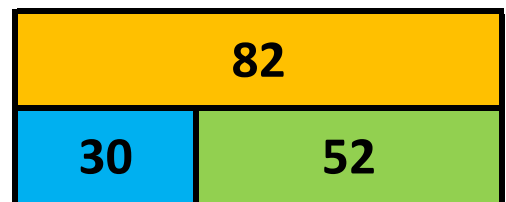
Number Line



Part Whole Model



Bar Model



Questions

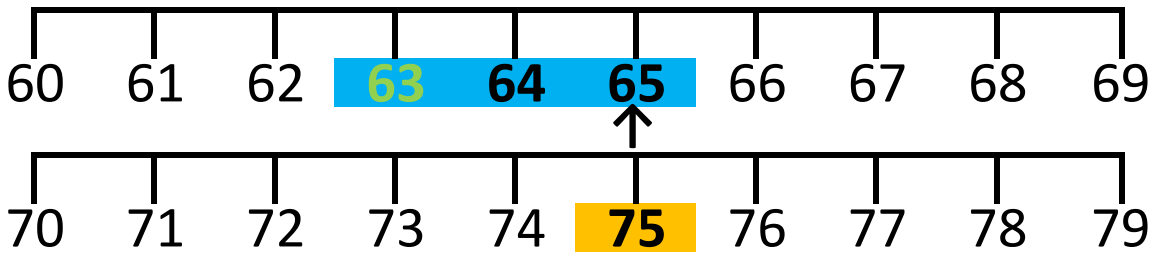
- | | | |
|----------------|----------------|-----------------|
| 1) $98 - 30 =$ | 3) $64 - 30 =$ | 5) $107 - 50 =$ |
| 2) $86 - 40 =$ | 4) $72 - 20 =$ | 6) $118 - 70 =$ |

Doubling

Number Sentence

$$75 - 6 - 6 = 63$$

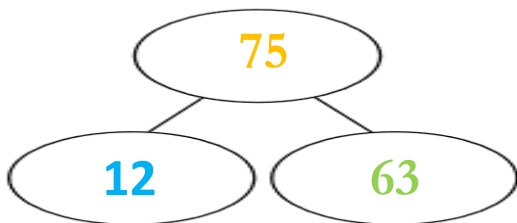
Number Line



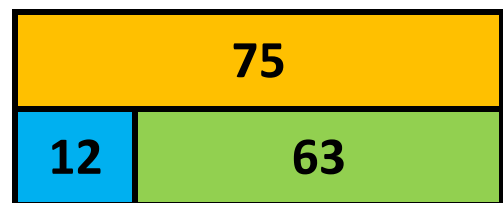
Number Grid

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80

Part Whole Model



Bar Model



Questions

1) $26 - 2 - 2 =$

2) $39 - 3 - 3 =$

3) $45 - 7 - 7 =$

4) $76 - 6 - 6 =$

Three numbers

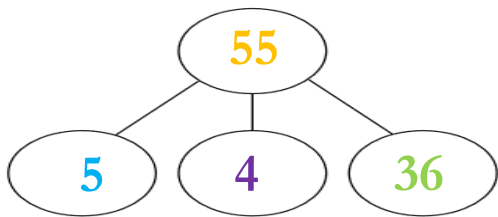
Number Sentence

$$55 - 15 - 4 = 36$$

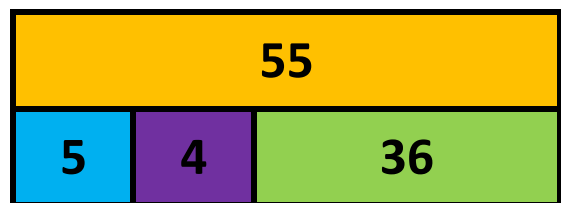
Number Grid

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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

Part Whole Model



Bar Model



Questions

1) $21 - 3 - 5 =$

2) $28 - 6 - 3 =$

3) $58 - 7 - 4 =$

4) $77 - 5 - 6 =$

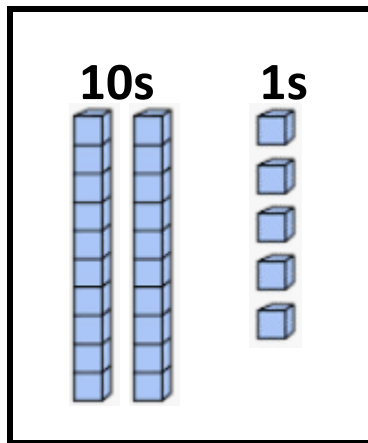
Column subtraction (exchanging)

Number Sentence

$$25 - 6 = 19$$

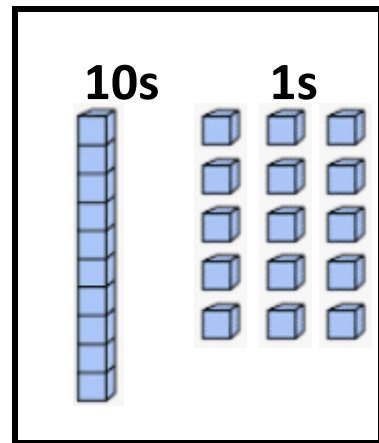
Step 1

$$\begin{array}{r} \underline{10s \quad 1s} \\ 25 \\ - 6 \\ \hline \end{array}$$



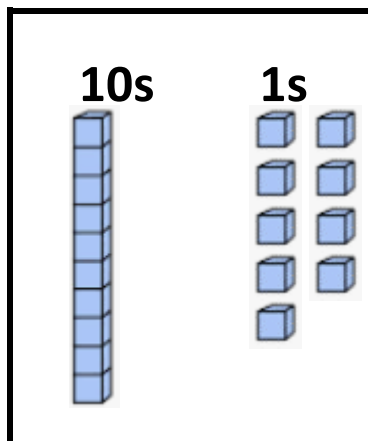
Step 2

$$\begin{array}{r} \underline{10s \quad 1s} \\ 1 \\ 2 \quad 15 \\ - 6 \\ \hline \end{array}$$



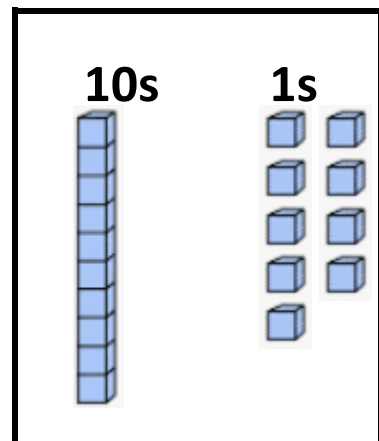
Step 3

$$\begin{array}{r} \underline{10s \quad 1s} \\ 1 \\ 2 \quad 15 \\ - 6 \\ \hline 19 \end{array}$$



Step 4

$$\begin{array}{r} \underline{10s \quad 1s} \\ 1 \\ 2 \quad 15 \\ - 6 \\ \hline 19 \end{array}$$



Questions

1) $36 - 17 =$

3) $52 - 15 =$

5) $78 - 49 =$

2) $47 - 19 =$

4) $77 - 48 =$

6) $86 - 58 =$

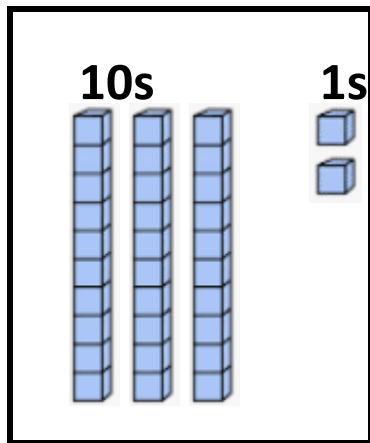
Column subtraction (exchanging)

Number Sentence

$$32 - 17 = 15$$

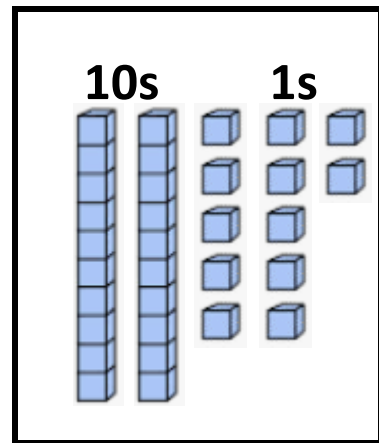
Step 1

$$\begin{array}{r} \underline{10s \ 1s} \\ 32 \\ - 17 \\ \hline \end{array}$$



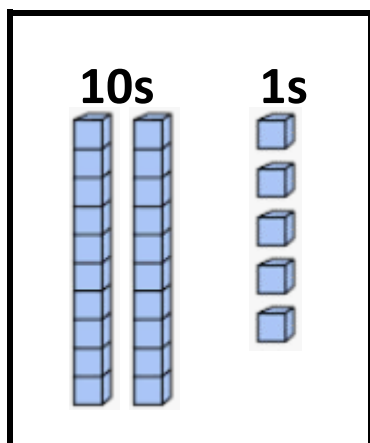
Step 2

$$\begin{array}{r} \underline{10s \ 1s} \\ 2 \\ 3 \ 12 \\ - 17 \\ \hline \end{array}$$



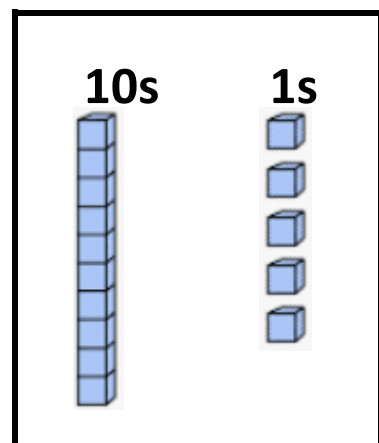
Step 3

$$\begin{array}{r} \underline{10s \ 1s} \\ 2 \\ 3 \ 12 \\ - 17 \\ \hline 5 \end{array}$$



Step 4

$$\begin{array}{r} \underline{10s \ 1s} \\ 2 \\ 3 \ 12 \\ - 17 \\ \hline 15 \end{array}$$



Questions

1) $46 - 17 =$

3) $62 - 15 =$

5) $88 - 49 =$

2) $57 - 19 =$

4) $87 - 48 =$

6) $96 - 58 =$

Addition Fact Family

Addition Sentence

$$27 + 13 = 14$$



Commutative Sentence

$$13 + 27 = 14$$



Inverse Sentence

$$14 - 13 = 27$$



Related Sentence

$$14 - 27 = 13$$

Subtraction Fact Family

Subtraction Sentence

$$36 - 15 = 11$$



Related Sentence

$$36 - 11 = 15$$



Inverse Sentence

$$11 + 15 = 36$$



Commutative Sentence

$$15 + 11 = 36$$

Questions

1) $16 + 12 = 28$

3) $35 + 8 = 43$

5) $43 - 15 = 28$

2) $29 + 15 = 44$

4) $26 - 4 = 22$

6) $69 - 27 = 42$

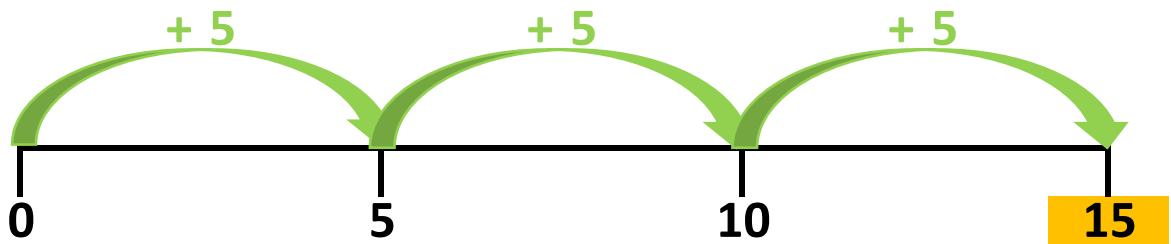
Repeated Addition

Number Sentence

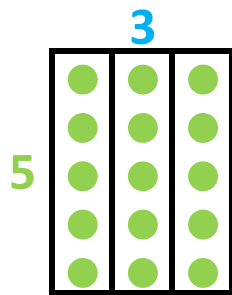
$$5 \times 3 = 15$$

$$(5 + 5 + 5 = 15)$$

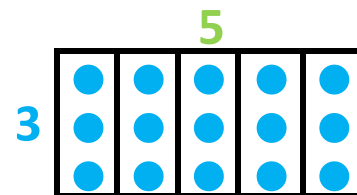
Number Line



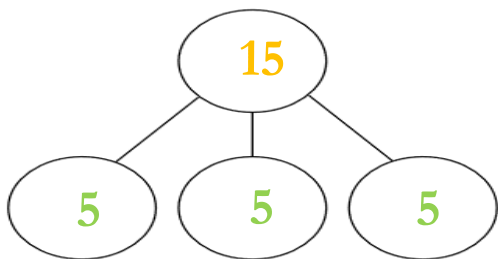
Arrays



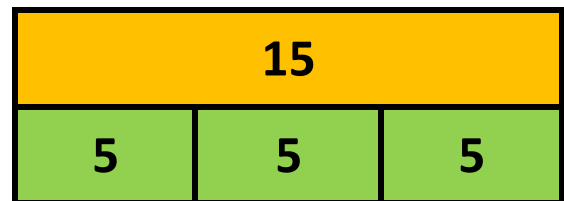
or



Part Whole Model



Bar Model



Questions

1) $3 \times 4 =$

3) $10 \times 4 =$

5) $9 \times 5 =$

2) $2 \times 10 =$

4) $5 \times 8 =$

6) $2 \times 6 =$

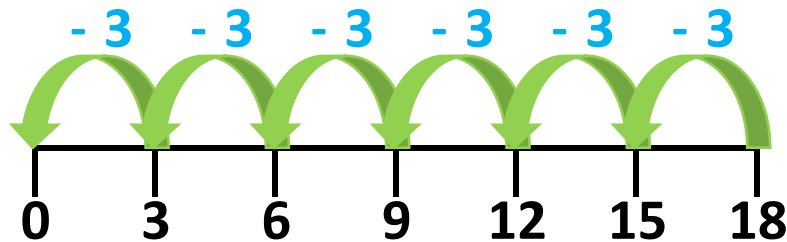
Repeated subtraction

Number Sentence

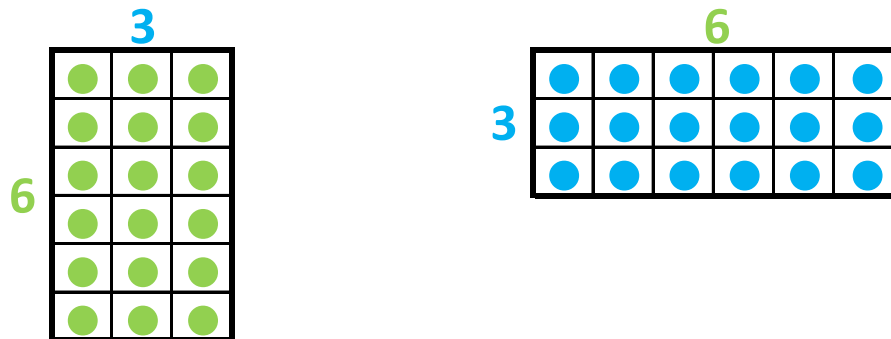
$$18 \div 3 = 6$$

$$(6 \times 3 = 18)$$

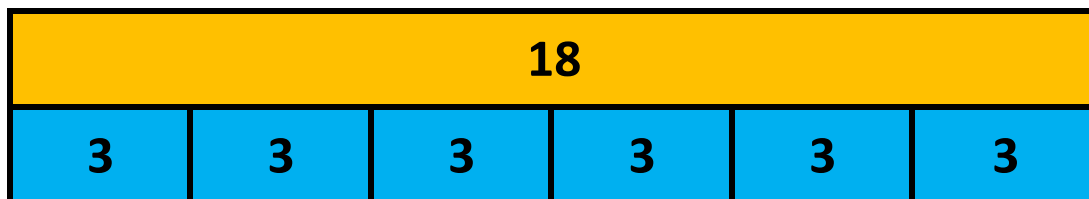
Number Line



Arrays



Bar Model



Questions

- 1) $20 \div \underline{\quad} = 5$ 3) $15 \div \underline{\quad} = 5$ 5) $45 \div \underline{\quad} = 5$
2) $16 \div \underline{\quad} = 2$ 4) $40 \div \underline{\quad} = 10$ 6) $24 \div \underline{\quad} = 2$

Multiplication Fact Family

Multiplication Sentence

→

Inverse Sentence

$$5 \times 6 = 30$$

$$30 \div 6 = 5$$

↓

↓

Commutative Sentence

Related Sentence

$$6 \times 5 = 30$$

$$30 \div 5 = 6$$

Division Fact Family

Division Sentence

→

Inverse Sentence

$$80 \div 10 = 8$$

$$8 \times 10 = 80$$

↓

↓

Related Sentence

Commutative Sentence

$$80 \div 8 = 10$$

$$10 \times 8 = 80$$

Questions

1) $10 \times 6 = 60$

3) $5 \times 9 = 90$

5) $60 \div 5 = 12$

2) $3 \times 9 = 27$

4) $24 \div 2 = 12$

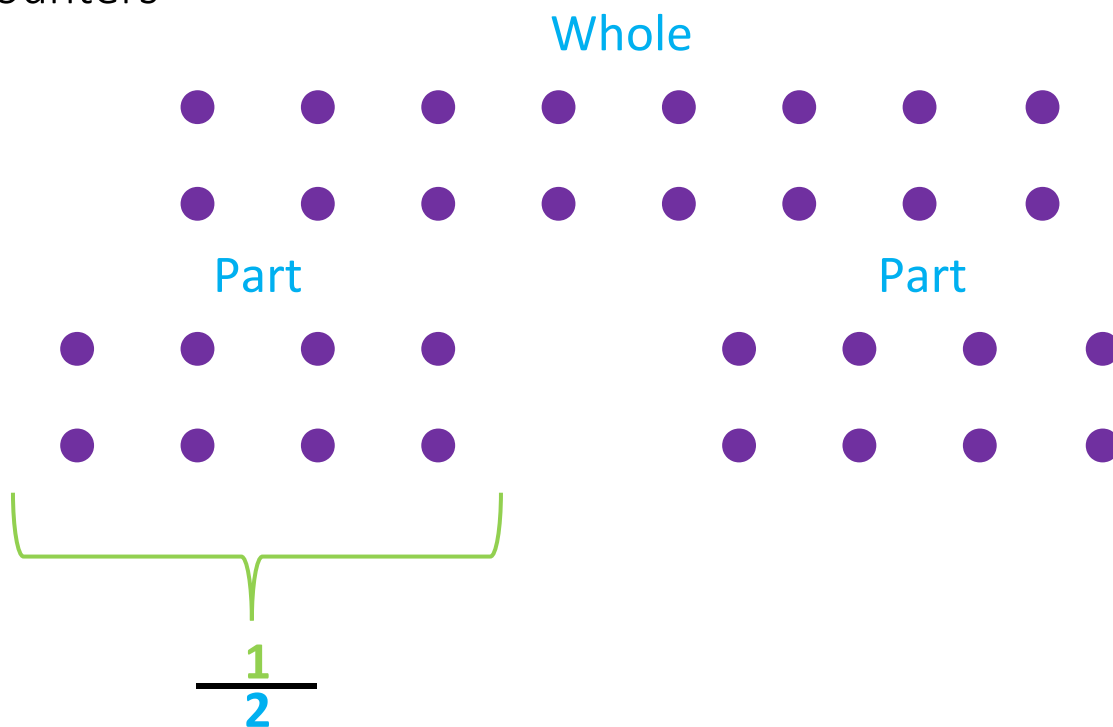
6) $70 \div 10 = 7$

Half of a Quantity

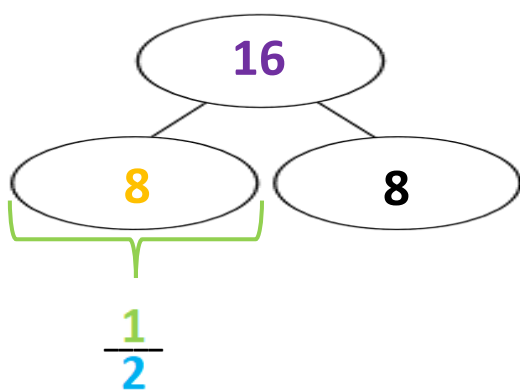
Number Sentence

$$\frac{1}{2} \text{ of } 14 = 7$$

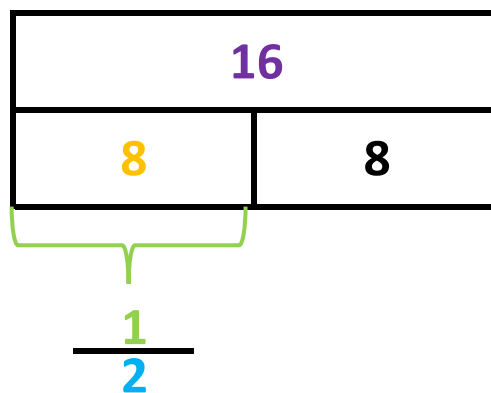
Counters



Part Whole Model



Bar Model



Questions

1) $\frac{1}{2}$ of 24 =

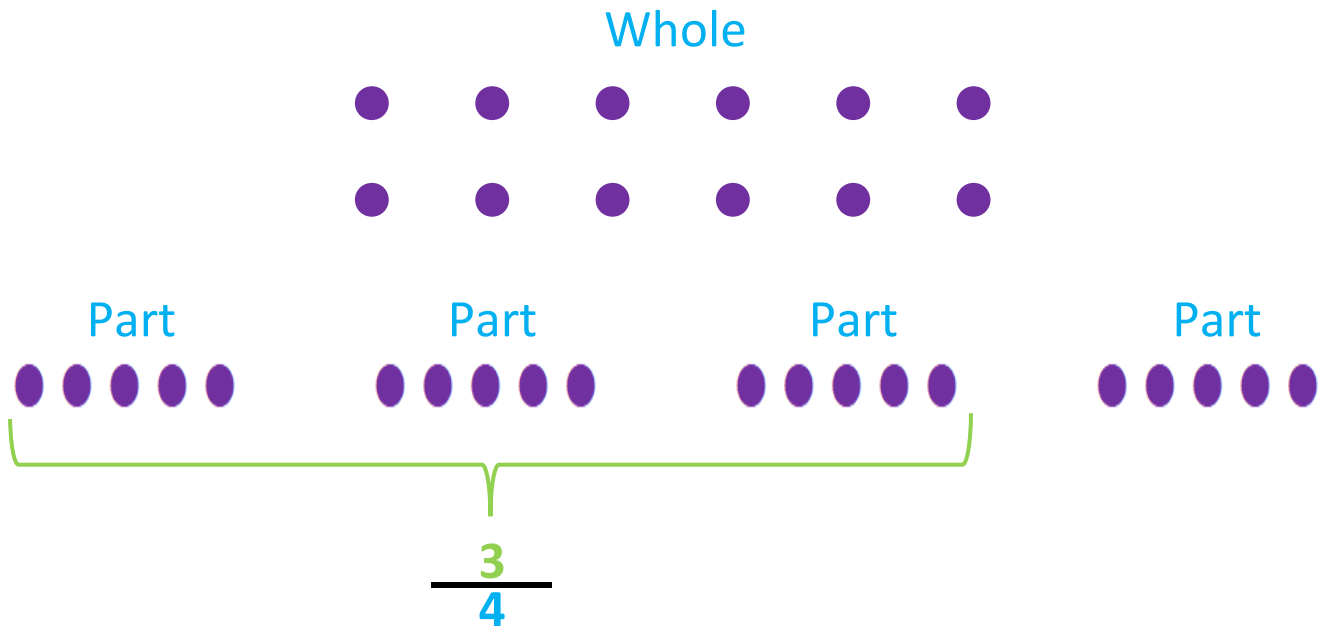
2) $\frac{1}{2}$ of 44 =

3) $\frac{1}{2}$ of 48 =

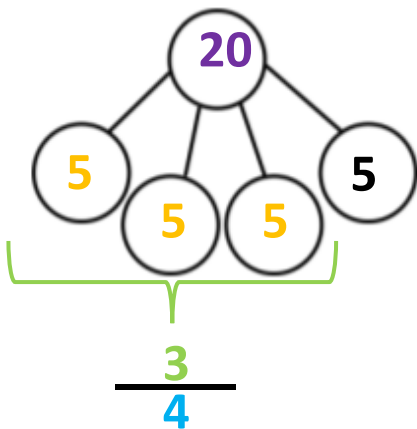
Quarter of a Quantity

Number Sentence $\frac{3}{4}$ of 20 = 15

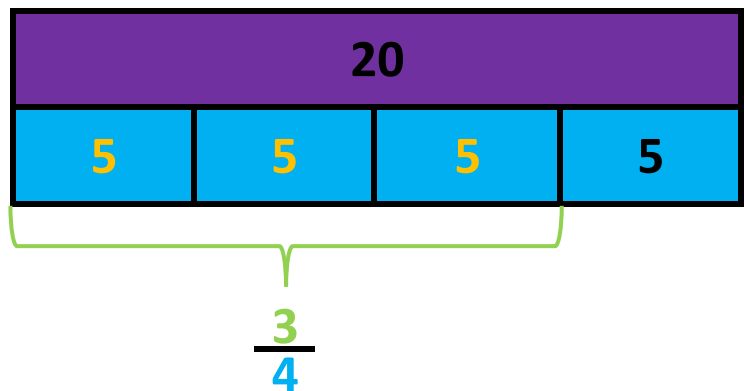
Counters



Part Whole Model



Bar Model



Questions

1) $\frac{1}{4}$ of 20 =

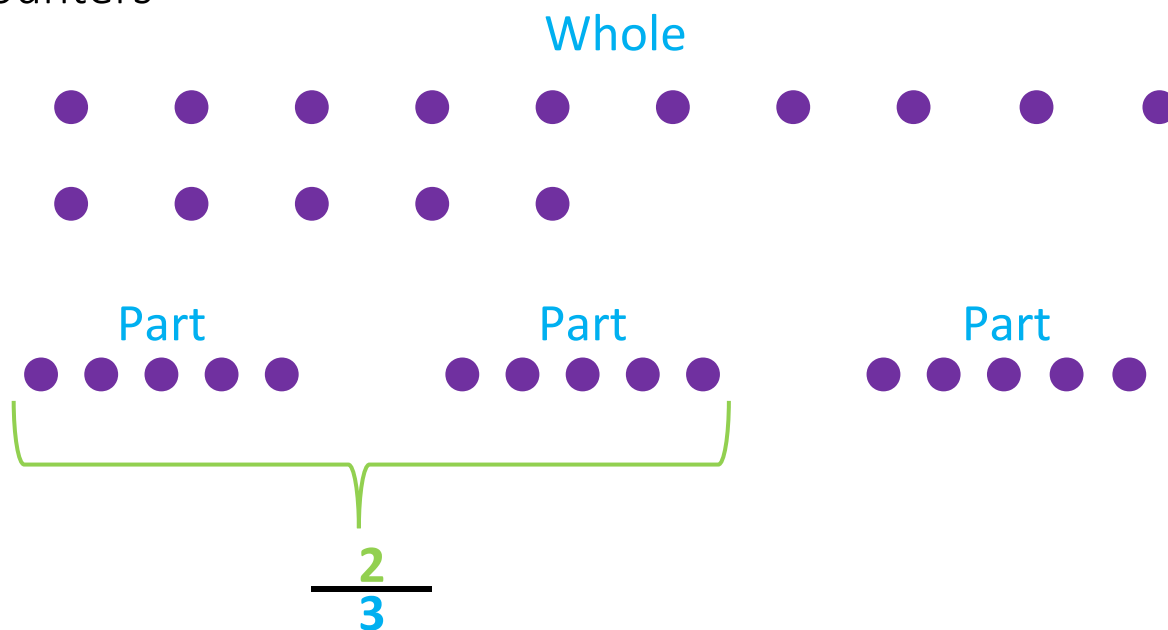
2) $\frac{2}{4}$ of 28 =

3) $\frac{3}{4}$ of 40 =

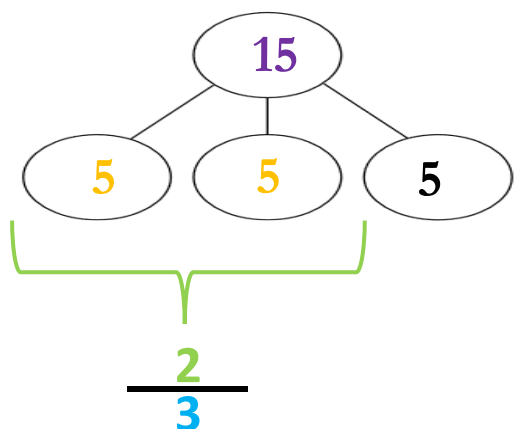
Third of a Quantity

Number Sentence $\frac{2}{3}$ of 15 = 10

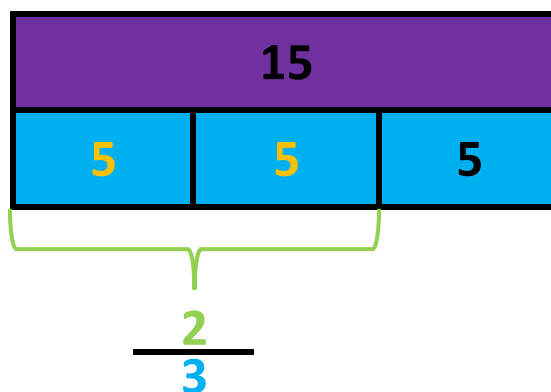
Counters



Part Whole Model



Bar Model



Questions

1) $\frac{1}{3}$ of 18 =

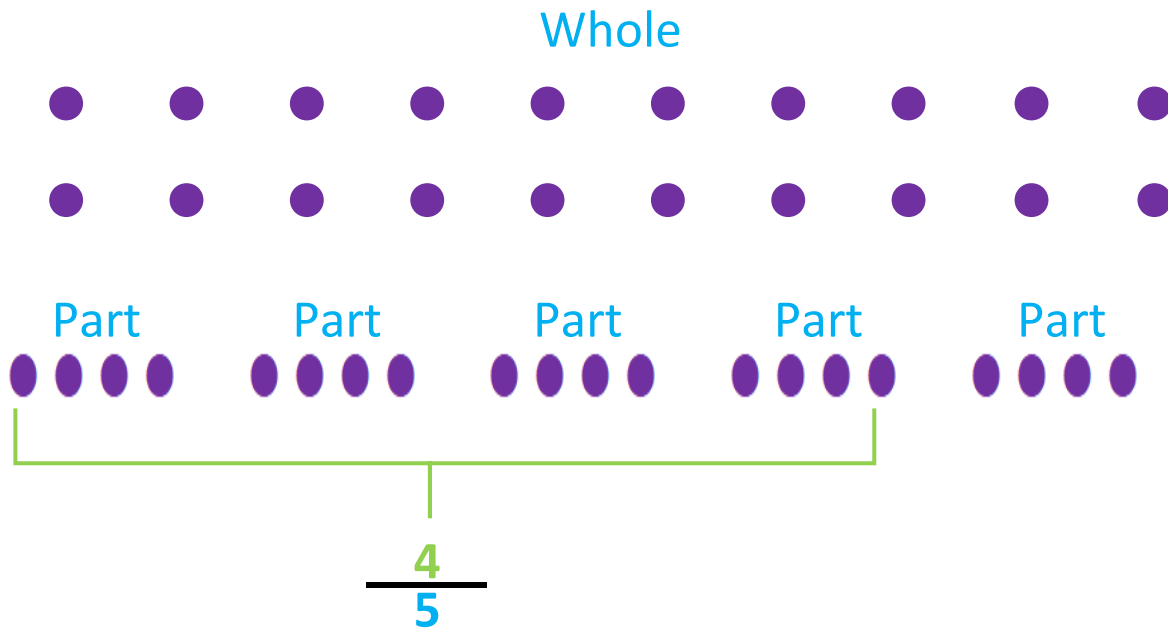
2) $\frac{2}{3}$ of 30 =

3) $\frac{2}{3}$ of 60 =

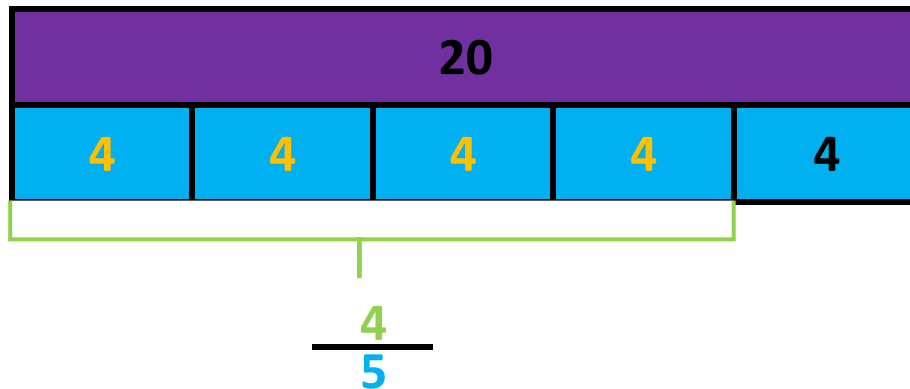
Fifth of a Quantity

Number Sentence $\frac{4}{5}$ of 20 = 16

Counters



Bar Model



Questions

1) $\frac{1}{5}$ of 15 =

2) $\frac{3}{5}$ of 25 =

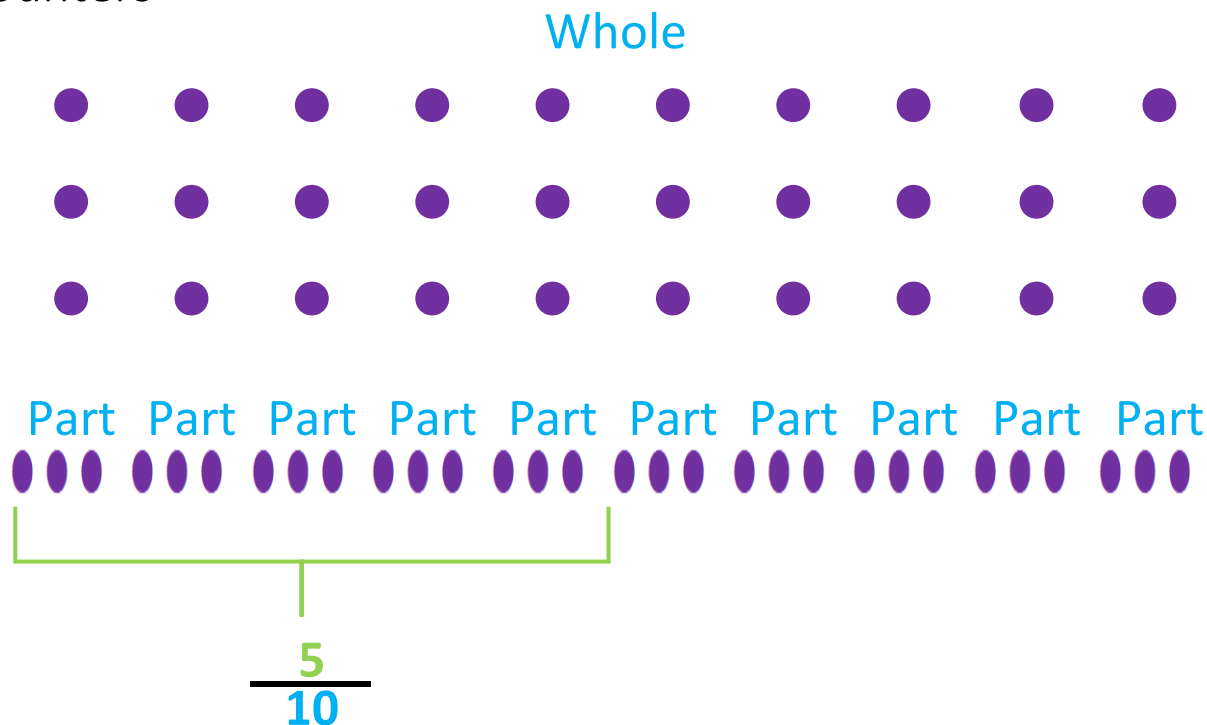
3) $\frac{4}{5}$ of 35 =

Tenth of a Quantity

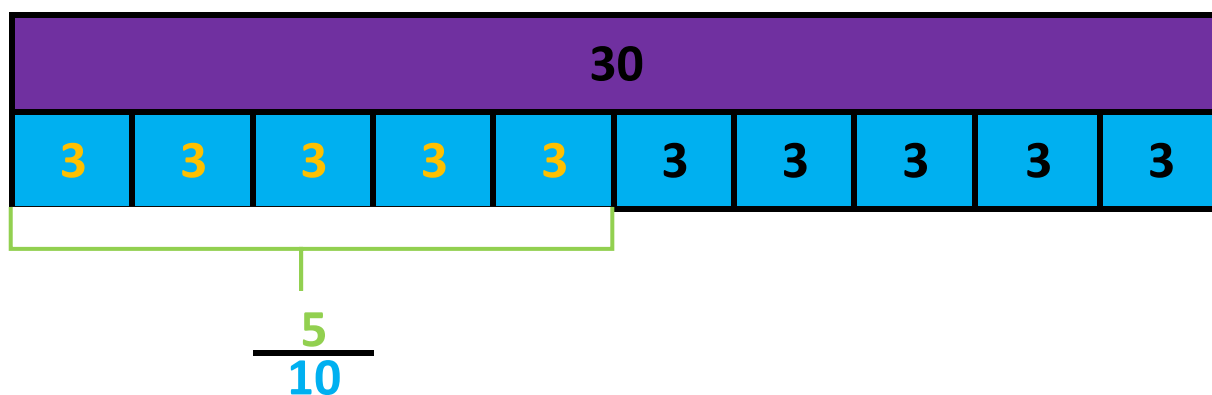
Number Sentence

$$\frac{5}{10} \text{ of } 30 = 15$$

Counters



Bar Model



Questions

1) $\frac{1}{10}$ of 60 =

2) $\frac{3}{10}$ of 70 =

3) $\frac{6}{10}$ of 80 =