Number Facts

Aims

- Explain which number facts need to be learnt.
- Share games and strategies to help your child derive, learn and recall number facts .

Aims

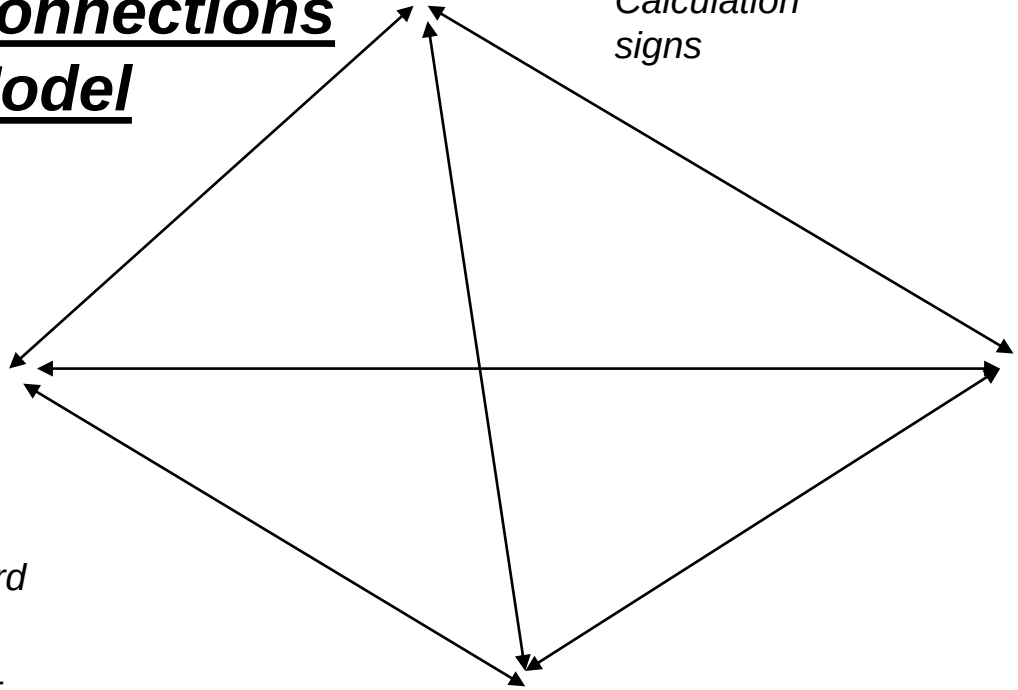
The national curriculum for mathematics aims to ensure that all pupils:

•become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability **to recall and apply knowledge rapidly and accurately**

•reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

•can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

The Connections Model



Symbols

Numerals

Calculation signs

Language

Processing instructions

Interpreting word problems

Explaining their thinking

Using mathematical , academic and everyday language.

Concrete experiences

Real or physical materials

Small worlds

Money

Cubes

Counters

Fingers

Pictures/images

Number lines

Place value cards

Hundred squares

Numicon

Drawing their own representations

Children need all
4 experiences
in order to build connections

Reception	
Year 1	Represent and use number bonds within 20 Represent and use subtraction facts within 20
Year 2	Recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. Recall doubles and halves to 20 Recall and use multiplication and division facts for the 2, 5 and 10 times tables
Year 3	Recall and use multiplication and division facts for the 3, 4 and 8 times tables
Year 4	Recall multiplication and division facts for multiplication tables up to 12 x 12
Year 5	Multiply and divide numbers mentally drawing upon known facts
Year 6	

What helps children to memorise facts?

- Written
- Visual
- Kinaesthetic
- Pattern
- Aural

Adding 1 | Bonds to 10 | Adding 10 | Bridging/ compensating

Adding 2 | Adding 0 | Doubles | Near doubles

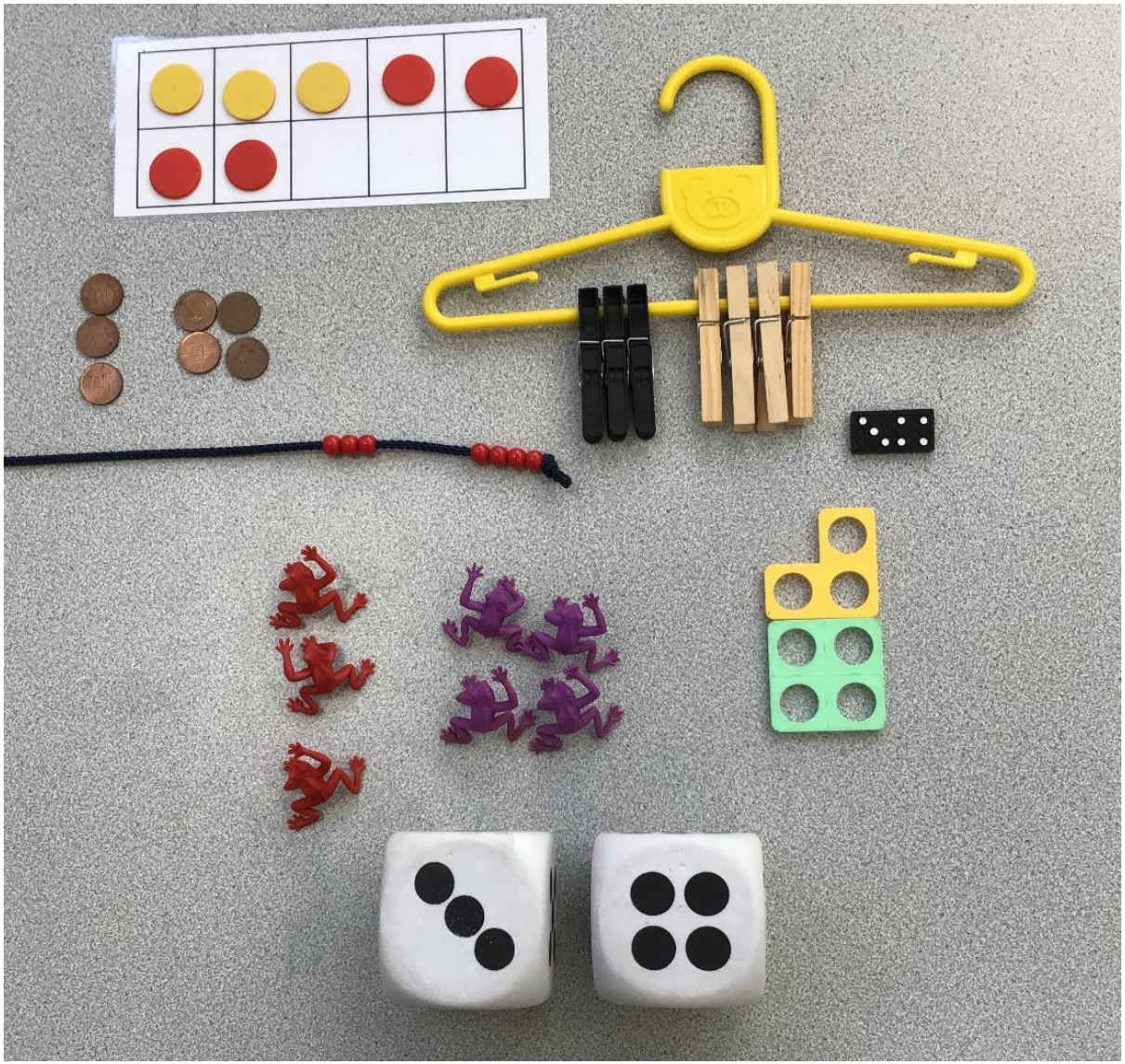
Y1 facts

Y2 facts

+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10

3 +

4



Looking for patterns..

0+7=7

1+6=7

2+5=7

3+4=7

4+3=7

5+2=7

6+1=7

7+0=7

What do you notice?

What's the same?

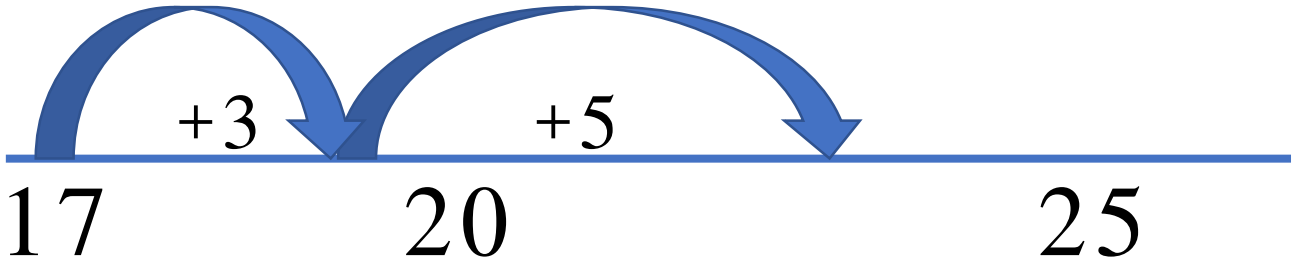
What's different?

Games to play

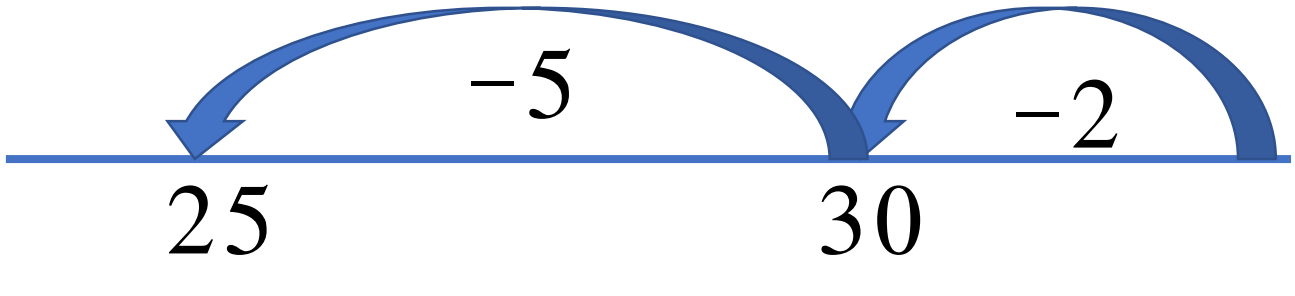
- Throw and catch
- Bingo
- Pairs
- How many in 1 minute?
- Shut the box
- Card Race

Bridging up or down to 10

17+8=



32−7=



Facts for free

$4+3=7$

$7-3=4$

$7-4=3$

$3=7-4$

$7=3+4$

$3+4=7$

Equivalent facts

$5+2=7$

$6+1=7$

$7=0+7$

$2+2+3=7$

Nearby facts

$4+4=8$

$3+3=6$

$3+5=8$

$8=5+3$

Place value

$30+40=70$

$300+400=700$

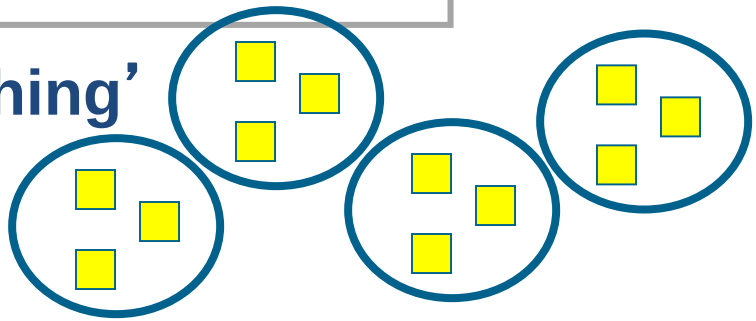
$0.4+0.3=0.7$

12 X 12 Multiplication Table

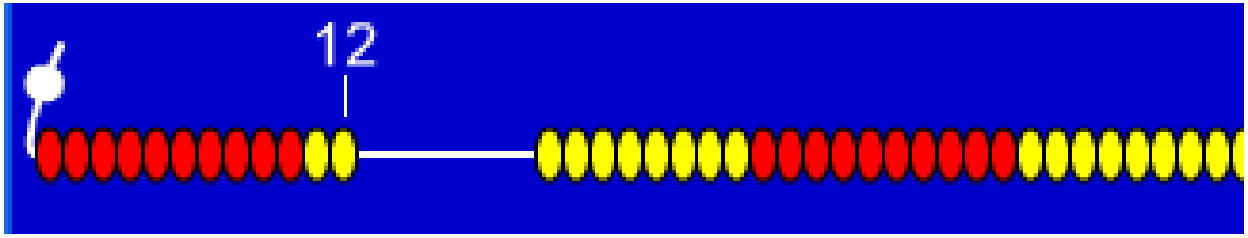
X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Models for multiplication

Lots of the ‘same thing’

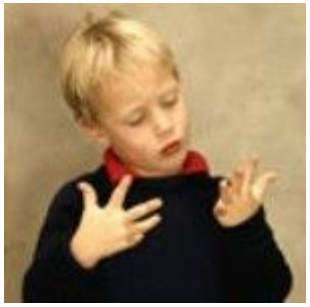


Bead Bar



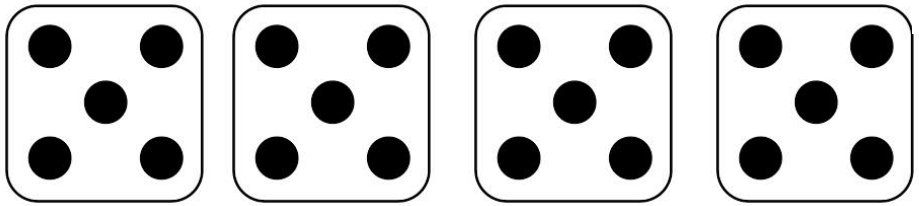
Number Line

Fingers



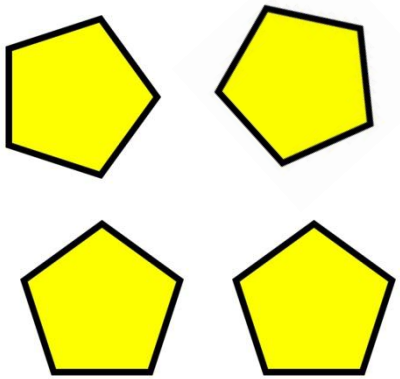
“3” “6” “9” “12”

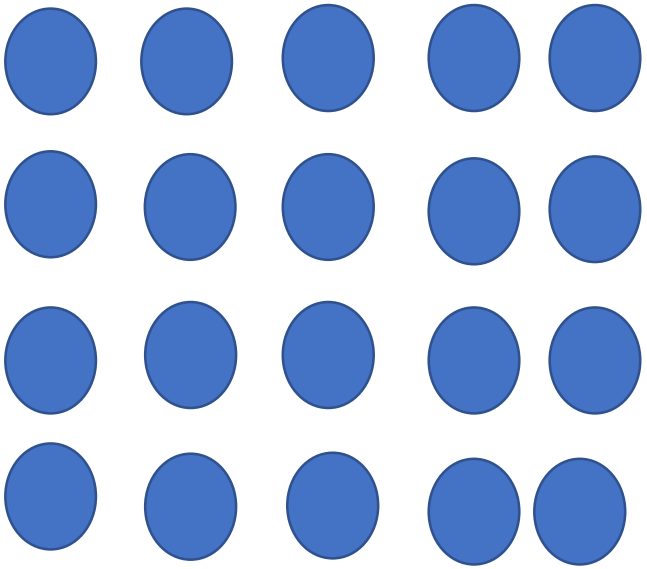
4 x 5 =



Count in steps of 2, 3, 5 and 10.
Chant /sing

Represent the fact with objects or pictures





Recognise multiplication is commutativ

4 x 5 is the same as 5 x 4

Facts for free

8x3=24

24÷3=8

24÷8=3

3x8=24

Equivalent facts

12x2=24

2x12=24

6x4=24

1x24=24

3x2x4=24

Nearby facts

3x7=21

3x9=27

4x8=32

2x8=16

Place value

30x8=240

30x80=2400

300x8=2400

0.3 x 8 = 2.4

0.3x0.8 = 0.24

Games to play

- Throw and catch
- Bingo
- Pairs
- How many in 1 minute?
- Connect 3
- Claim your squares

Other tips...

- Little and often
- Make it fun
- Make up silly rhymes for tricky facts
- Use what you know

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Thank you for coming.

Please complete the evaluation.