

BASIC FACTS STEPS, STAGES AND QUESTIONS

Step 1 (Stage 0-3, steps 1-12)

$$\begin{array}{lll} 0 + 5 = _ & 0 + _ = 5 & _ + 5 = 5 \\ 1 + 4 = _ & 1 + _ = 5 & _ + 4 = 5 \\ 2 + 3 = _ & 2 + _ = 5 & _ + 3 = 5 \\ 3 + 2 = _ & 3 + _ = 5 & _ + 2 = 5 \\ 4 + 1 = _ & 4 + _ = 5 & _ + 1 = 5 \\ 5 + 0 = _ & 5 + _ = 5 & _ + 0 = 5 \end{array}$$

Step 2

Counting backwards from 20 in ones, starting at any number, e.g. 16, 15, 14, 13, etc...

Step 3

$$\begin{array}{ll} 1 + 0 = _ & 0 + 1 = _ \\ 1 + 1 = _ & \\ 1 + 2 = _ & 2 + 1 = _ \\ 1 + 3 = _ & 3 + 1 = _ \\ 2 + 0 = _ & 0 + 2 = _ \\ 2 + 1 = _ & 1 + 2 = _ \\ 2 + 2 = _ & \\ 3 + 0 = _ & 0 + 3 = _ \\ 3 + 1 = _ & 1 + 3 = _ \\ 4 + 0 = _ & 0 + 4 = _ \end{array}$$

Step 4

$$\begin{array}{l} 5 - 0 = _ \\ 5 - 1 = _ \\ 5 - 2 = _ \\ 5 - 3 = _ \\ 5 - 4 = _ \\ 5 - 5 = _ \end{array}$$

Step 5

$$\begin{array}{ll} 4 - 0 = _ & 4 - 4 = _ \\ 4 - 1 = _ & 4 - 3 = _ \\ 3 - 0 = _ & 3 - 3 = _ \\ 4 - 2 = _ & \\ 3 - 2 = _ & 3 - 1 = _ \\ 2 - 0 = _ & 2 - 2 = _ \\ 4 - 1 = _ & 4 - 3 = _ \\ 3 - 1 = _ & 3 - 2 = _ \\ 2 - 1 = _ & \\ 1 - 1 = _ & 1 - 0 = _ \end{array}$$

Step 6

Doubles and halves with numbers to 10 (*Do not ask in order*)

$$\begin{array}{l} 0 + 0 = _ \\ 1 + 1 = _ \\ 2 + 2 = _ \\ 3 + 3 = _ \\ 4 + 4 = _ \\ 5 + 5 = _ \end{array}$$

Also ask what is double 2 ? Double 4 ? etc

Step 7

Subtraction from doubles to 10 (*Do not ask in order*)

$$\begin{array}{l} 0 - 0 = _ \\ 2 - 1 = _ \\ 4 - 2 = _ \\ 6 - 3 = _ \\ 8 - 4 = _ \\ 10 - 5 = _ \end{array}$$

Also ask what is half of 2? Half of 8? etc

Step 8

5 "and" facts
(*Do not ask in order*)

$$\begin{array}{ll} 5 + 1 = _ & 1 + 5 = _ \\ 5 + 2 = _ & 2 + 5 = _ \\ 5 + 3 = _ & 3 + 5 = _ \\ 5 + 4 = _ & 4 + 5 = _ \end{array}$$

Step 9

Skip Counting in 2's to 20
0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Step 10

Skip Counting in 5's to 50
0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Step 11

Skip Counting backwards in 2's from 20
20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0

Step 12

Skip Counting backwards in 5's from 50
50, 45, 40, 35, 30, 25, 20, 15, 10, 5, 0

STAGE 4 (STEPS 13 - 24)

Step 13 (Stage 4)

Addition facts to and from 10

$0 + 10 = 10$	$0 + \underline{\quad} = 10$	$\underline{\quad} + 10 = 10$
$1 + 9 = 10$	$1 + \underline{\quad} = 10$	$\underline{\quad} + 9 = 10$
$2 + 8 = 10$	$2 + \underline{\quad} = 10$	$\underline{\quad} + 8 = 10$
$3 + 7 = 10$	$3 + \underline{\quad} = 10$	$\underline{\quad} + 7 = 10$
$4 + 6 = 10$	$4 + \underline{\quad} = 10$	$\underline{\quad} + 6 = 10$
$5 + 5 = 10$	$5 + \underline{\quad} = 10$	$\underline{\quad} + 5 = 10$
$6 + 4 = 10$	$6 + \underline{\quad} = 10$	$\underline{\quad} + 4 = 10$
$7 + 3 = 10$	$7 + \underline{\quad} = 10$	$\underline{\quad} + 3 = 10$
$8 + 2 = 10$	$8 + \underline{\quad} = 10$	$\underline{\quad} + 2 = 10$
$9 + 1 = 10$	$9 + \underline{\quad} = 10$	$\underline{\quad} + 1 = 10$
$10 + 0 = 10$	$10 + \underline{\quad} = 10$	$\underline{\quad} + 0 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 14 (Stage 4)

Subtraction facts to and from 10

$10 - 10 = \underline{\quad}$	$10 - \underline{\quad} = 0$	$\underline{\quad} - 10 = 0$
$10 - 9 = \underline{\quad}$	$10 - \underline{\quad} = 1$	$\underline{\quad} - 9 = 1$
$10 - 8 = \underline{\quad}$	$10 - \underline{\quad} = 2$	$\underline{\quad} - 8 = 2$
$10 - 7 = \underline{\quad}$	$10 - \underline{\quad} = 3$	$\underline{\quad} - 7 = 3$
$10 - 6 = \underline{\quad}$	$10 - \underline{\quad} = 4$	$\underline{\quad} - 6 = 4$
$10 - 5 = \underline{\quad}$	$10 - \underline{\quad} = 5$	$\underline{\quad} - 5 = 5$
$10 - 4 = \underline{\quad}$	$10 - \underline{\quad} = 6$	$\underline{\quad} - 4 = 6$
$10 - 3 = \underline{\quad}$	$10 - \underline{\quad} = 7$	$\underline{\quad} - 3 = 7$
$10 - 2 = \underline{\quad}$	$10 - \underline{\quad} = 8$	$\underline{\quad} - 2 = 8$
$10 - 1 = \underline{\quad}$	$10 - \underline{\quad} = 9$	$\underline{\quad} - 1 = 9$
$10 - 0 = \underline{\quad}$	$10 - \underline{\quad} = 10$	$\underline{\quad} - 0 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 15 (Stage 4)

Doubles to 20 (*Do not practise in order*)

$6 + 6 = \underline{\quad}$
$7 + 7 = \underline{\quad}$
$8 + 8 = \underline{\quad}$
$9 + 9 = \underline{\quad}$
$10 + 10 = \underline{\quad}$

Your teacher will ask:
What is double 8 or $8 + 8 = ?$
What is double 9 or $9 + 9 = ?$

Students are expected to know ALL of these.

Step 16 (Stage 4)

Halves to 20 (*Do not practise in order*)

$$12 - 6 = \underline{\quad}$$

$$14 - 7 = \underline{\quad}$$

$$16 - 8 = \underline{\quad}$$

$$18 - 9 = \underline{\quad}$$

$$20 - 10 = \underline{\quad}$$

Your teacher will ask:
What is half of 14 or $14 - 7 = ?$
What is half of 18 or $18 - 9 = ?$

Students are expected to know ALL of these.

Step 17 (Stage 4)

Tens and “facts” to 20 - Teen Numbers

$$10 + 0 = \underline{\quad} \quad 10 + \underline{\quad} = 10 \quad \underline{\quad} + 0 = 10$$

$$10 + 1 = \underline{\quad} \quad 10 + \underline{\quad} = 11 \quad \underline{\quad} + 1 = 11$$

$$10 + 2 = \underline{\quad} \quad 10 + \underline{\quad} = 12 \quad \underline{\quad} + 2 = 12$$

$$10 + 3 = \underline{\quad} \quad 10 + \underline{\quad} = 13 \quad \underline{\quad} + 3 = 13$$

$$10 + 4 = \underline{\quad} \quad 10 + \underline{\quad} = 14 \quad \underline{\quad} + 4 = 14$$

$$10 + 5 = \underline{\quad} \quad 10 + \underline{\quad} = 15 \quad \underline{\quad} + 5 = 15$$

$$10 + 6 = \underline{\quad} \quad 10 + \underline{\quad} = 16 \quad \underline{\quad} + 6 = 16$$

$$10 + 7 = \underline{\quad} \quad 10 + \underline{\quad} = 17 \quad \underline{\quad} + 7 = 17$$

$$10 + 8 = \underline{\quad} \quad 10 + \underline{\quad} = 18 \quad \underline{\quad} + 8 = 18$$

$$10 + 9 = \underline{\quad} \quad 10 + \underline{\quad} = 19 \quad \underline{\quad} + 9 = 19$$

$$10 + 10 = \underline{\quad} \quad 10 + \underline{\quad} = 20 \quad \underline{\quad} + 10 = 20$$

What is a “teen” number?

What is a “ty” number?

Which of these numbers are “teen” numbers?

Step 18 Stage 4

Adding 10 to any number between 1 and 100

For example: $26 + 10 =$

More examples

$$35 + 10 = \underline{\quad}$$

$$23 + 10 = \underline{\quad}$$

$$47 + 10 = \underline{\quad}$$

$$89 + 10 = \underline{\quad}$$

$$53 + 10 = \underline{\quad}$$

$$71 + 10 = \underline{\quad}$$

$$66 + 10 = \underline{\quad}$$

$$69 + 10 = \underline{\quad}$$

$12 + 10 = \underline{\quad}$

$28 + 10 = \underline{\quad}$

$82 + 10 = \underline{\quad}$

$19 + 10 = \underline{\quad}$

$42 + 10 = \underline{\quad}$

$58 + 10 = \underline{\quad}$

Step 19 Stage 4

Adding a tens number (20, 30, 40, 50, 60) to any number between 1 and 100
For example: $45 + 20 = ?$ (Can solve by counting on in tens)

More examples

$35 + 30 = \underline{\quad}$

$51 + 40 = \underline{\quad}$

$46 + 20 = \underline{\quad}$

$18 + 20 = \underline{\quad}$

$39 + 50 = \underline{\quad}$

$13 + 30 = \underline{\quad}$

$23 + 40 = \underline{\quad}$

$46 + 20 = \underline{\quad}$

$62 + 20 = \underline{\quad}$

$27 + 30 = \underline{\quad}$

$55 + 30 = \underline{\quad}$

$49 + 20 = \underline{\quad}$

$67 + 30 = \underline{\quad}$

$77 + 20 = \underline{\quad}$

Step 20 Stage 4

Subtracting 10 from any number up to 100. For example: $63 - 10 = ?$

$35 - 10 = \underline{\quad}$

$47 - 10 = \underline{\quad}$

$53 - 10 = \underline{\quad}$

$66 - 10 = \underline{\quad}$

$12 - 10 = \underline{\quad}$

$28 - 10 = \underline{\quad}$

$82 - 10 = \underline{\quad}$

$23 - 10 = \underline{\quad}$

$89 - 10 = \underline{\quad}$

$71 - 10 = \underline{\quad}$

$69 - 10 = \underline{\quad}$

$19 - 10 = \underline{\quad}$

$42 - 10 = \underline{\quad}$

$58 - 10 = \underline{\quad}$

Step 21 Stage 4

Subtracting 10, 20, 30, 40 50 or 60 from any number up to 100. For example: $85 - 30 =$

More examples

$35 - 30 = \underline{\quad}$

$51 - 40 = \underline{\quad}$

$46 - 20 = \underline{\quad}$

$88 - 20 = \underline{\quad}$

$79 - 50 = \underline{\quad}$

$53 - 30 = \underline{\quad}$

$63 - 40 = \underline{\quad}$

$46 - 20 = \underline{\quad}$

$62 - 20 = \underline{\quad}$

$87 - 30 = \underline{\quad}$

$55 - 30 = \underline{\quad}$

$49 - 20 = \underline{\quad}$

$67 - 30 = \underline{\quad}$

$54 - 20 = \underline{\quad}$

Step 22 (Stage 4)

$10 + \underline{\quad} = 100$

$20 + \underline{\quad} = 100$

$30 + \underline{\quad} = 100$

$40 + \underline{\quad} = 100$

$50 + \underline{\quad} = 100$

$60 + \underline{\quad} = 100$

$70 + \underline{\quad} = 100$

$80 + \underline{\quad} = 100$

$90 + \underline{\quad} = 100$

$100 - \underline{\quad} = 90$

$100 - \underline{\quad} = 80$

$100 - \underline{\quad} = 70$

$100 - \underline{\quad} = 60$

$100 - \underline{\quad} = 50$

$100 - \underline{\quad} = 40$

$100 - \underline{\quad} = 30$

$100 - \underline{\quad} = 20$

$100 - \underline{\quad} = 10$

$\underline{\quad} + 90 = 100$

$\underline{\quad} + 80 = 100$

$\underline{\quad} + 70 = 100$

$\underline{\quad} + 60 = 100$

$\underline{\quad} + 50 = 100$

$\underline{\quad} + 40 = 100$

$\underline{\quad} + 30 = 100$

$\underline{\quad} + 20 = 100$

$\underline{\quad} + 10 = 100$

Step 23 (Stage 4)

Missing Addends to 10 with Addition

For example:

$4 + \underline{\quad} = 9$

$\underline{\quad} + 6 = 8$

$7 + \underline{\quad} = 9$

$\underline{\quad} + 5 = 7$

$3 + \underline{\quad} = 8$

$\underline{\quad} + 2 = 5$

$2 + \underline{\quad} = 8$

$\underline{\quad} + 2 = 6$

$5 + \underline{\quad} = 7$

$\underline{\quad} + 8 = 9$

$6 + \underline{\quad} = 8$

$\underline{\quad} + 4 = 9$

$6 + \underline{\quad} = 9$

$\underline{\quad} + 5 = 8$

$4 + \underline{\quad} = 7$

$\underline{\quad} + 2 = 8$

$2 + \underline{\quad} = 7$

$\underline{\quad} + 4 = 8$

$7 + \underline{\quad} = 8$

$\underline{\quad} + 3 = 9$

Step 24 (Stage 4)

Missing Addends to 10 with Subtraction

For example:

$9 - \underline{\quad} = 3$

$\underline{\quad} - 5 = 3$

$5 - \underline{\quad} = 2$

$\underline{\quad} - 3 = 6$

$8 - \underline{\quad} = 2$

$\underline{\quad} - 2 = 7$

$9 - \underline{\quad} = 4$

$\underline{\quad} - 5 = 4$

$6 - \underline{\quad} = 4$

$\underline{\quad} - 4 = 3$

$7 - \underline{\quad} = 5$

$\underline{\quad} - 8 = 1$

$4 - \underline{\quad} = 1$

$\underline{\quad} - 6 = 3$

$6 - \underline{\quad} = 2$

$\underline{\quad} - 7 = 2$

$7 - \underline{\quad} = 3$

$\underline{\quad} - 5 = 2$

$8 - \underline{\quad} = 5$

$\underline{\quad} - 4 = 2$

STAGE 5 (STEPS 25 - 33)

Step 25 (Stage 5)

Able to use knowledge of subtraction number bonds to 10, to answer larger similar questions by seeing the pattern.

For example

$10 - 7 = 3 \text{ so}$

$30 - 7 = \underline{\quad}$

$80 - 7 = \underline{\quad}$

$20 - 7 = \underline{\quad}$

$50 - 7 = \underline{\quad}$

$90 - 7 = \underline{\quad}$

$70 - 7 = \underline{\quad}$

$10 - 4 = 6 \text{ so}$

$70 - 4 = \underline{\quad}$

$40 - 4 = \underline{\quad}$

$90 - 4 = \underline{\quad}$

$30 - 4 = \underline{\quad}$

$60 - 4 = \underline{\quad}$

$80 - 4 = \underline{\quad}$

$10 - 8 = 2 \text{ so}$

$60 - 8 = \underline{\quad}$

$70 - 8 = \underline{\quad}$

$40 - 8 = \underline{\quad}$

$20 - 8 = \underline{\quad}$

$30 - 8 = \underline{\quad}$

$50 - 8 = \underline{\quad}$

$40 - 7 = \underline{\quad}$

$20 - 4 = \underline{\quad}$

$90 - 8 = \underline{\quad}$

$60 - 7 = \underline{\quad}$

$50 - 4 = \underline{\quad}$

$80 - 8 = \underline{\quad}$

Step 26 (Stage 5)

Addition Facts to and within 20

$5 + 6 = \underline{\quad}$

$5 + 7 = \underline{\quad}$

$5 + 8 = \underline{\quad}$

$5 + 9 = \underline{\quad}$

$6 + 5 = \underline{\quad}$

$6 + 7 = \underline{\quad}$

$6 + 8 = \underline{\quad}$

$6 + 9 = \underline{\quad}$

$7 + 5 = \underline{\quad}$

$7 + 6 = \underline{\quad}$

$7 + 8 = \underline{\quad}$

$7 + 9 = \underline{\quad}$

$8 + 5 = \underline{\quad}$

$8 + 6 = \underline{\quad}$

$8 + 7 = \underline{\quad}$

$8 + 9 = \underline{\quad}$

$9 + 5 = \underline{\quad}$

$9 + 6 = \underline{\quad}$

$9 + 7 = \underline{\quad}$

$9 + 8 = \underline{\quad}$

Make up flash cards to help you learn these.
Remember your teacher will ask you questions "out of order"

Step 27 (Stage 5)

Revision of Subtraction Facts to 10. For example:

$7 - 3 = \underline{\quad}$

$8 - 1 = \underline{\quad}$

$8 - 5 = \underline{\quad}$

$7 - 3 = \underline{\quad}$

$1 - 0 = \underline{\quad}$

$9 - 2 = \underline{\quad}$

$9 - 6 = \underline{\quad}$

$9 - 4 = \underline{\quad}$

$4 - 3 = \underline{\quad}$

$6 - 4 = \underline{\quad}$

$5 - 0 = \underline{\quad}$

$7 - 5 = \underline{\quad}$

$6 - 2 = \underline{\quad}$

$9 - 5 = \underline{\quad}$

$2 - 1 = \underline{\quad}$

$5 - 3 = \underline{\quad}$

$10 - 2 = \underline{\quad}$

$6 - 2 = \underline{\quad}$

$3 - 2 = \underline{\quad}$

$8 - 3 = \underline{\quad}$

Make up flash cards to help you learn these.
Remember your teacher will ask you questions "out of order"

Step 28 (Stage 5)

$2 \times 0 = 0$	$0 \div 2 = 0$
$2 \times 1 = 2$	$2 \div 2 = 1$
$2 \times 2 = 4$	$4 \div 2 = 2$
$2 \times 3 = 6$	$6 \div 2 = 3$
$2 \times 4 = 8$	$8 \div 2 = 4$
$2 \times 5 = 10$	$10 \div 2 = 5$
$2 \times 6 = 12$	$12 \div 2 = 6$
$2 \times 7 = 14$	$14 \div 2 = 7$
$2 \times 8 = 16$	$16 \div 2 = 8$
$2 \times 9 = 18$	$18 \div 2 = 9$
$2 \times 10 = 20$	$20 \div 2 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.
Multiplying a number by 2 is the same as doubling it.
Dividing a number by 2 is the same as halving it.

Step 29 (Stage 5)

$10 \times 0 = 0$	$0 \div 10 = 0$
$10 \times 1 = 10$	$10 \div 10 = 1$
$10 \times 2 = 20$	$20 \div 10 = 2$
$10 \times 3 = 30$	$30 \div 10 = 3$
$10 \times 4 = 40$	$40 \div 10 = 4$
$10 \times 5 = 50$	$50 \div 10 = 5$
$10 \times 6 = 60$	$60 \div 10 = 6$
$10 \times 7 = 70$	$70 \div 10 = 7$
$10 \times 8 = 80$	$80 \div 10 = 8$
$10 \times 9 = 90$	$90 \div 10 = 9$
$10 \times 10 = 100$	$100 \div 10 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 30 (Stage 5)

$5 \times 0 = 0$	$0 \div 5 = 0$
$5 \times 1 = 5$	$5 \div 5 = 1$
$5 \times 2 = 10$	$10 \div 5 = 2$
$5 \times 3 = 15$	$15 \div 5 = 3$
$5 \times 4 = 20$	$20 \div 5 = 4$
$5 \times 5 = 25$	$25 \div 5 = 5$
$5 \times 6 = 30$	$30 \div 5 = 6$
$5 \times 7 = 35$	$35 \div 5 = 7$
$5 \times 8 = 40$	$40 \div 5 = 8$
$5 \times 9 = 45$	$45 \div 5 = 9$
$5 \times 10 = 50$	$50 \div 5 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 31 (Stage 5) Number bonds to 1000

$100 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 900$
$200 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 800$
$300 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 700$
$400 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 600$
$500 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 500$
$600 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 400$
$700 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 300$
$800 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 200$
$900 + \underline{\quad} = 1000$	$1000 - \underline{\quad} = 100$

Step 32 (Stage 5)

Groupings of numbers that add to 100.
For example:

$$43 + \underline{\quad} = 100 \quad 28 + \underline{\quad} = 100 \quad 48 + \underline{\quad} = 100 \quad 13 + \underline{\quad} = 100$$

$25 + \underline{\quad} = 100$	$33 + \underline{\quad} = 100$	$52 + \underline{\quad} = 100$	$21 + \underline{\quad} = 100$
$26 + \underline{\quad} = 100$	$39 + \underline{\quad} = 100$	$58 + \underline{\quad} = 100$	$45 + \underline{\quad} = 100$
$62 + \underline{\quad} = 100$	$84 + \underline{\quad} = 100$	$93 + \underline{\quad} = 100$	$76 + \underline{\quad} = 100$
$83 + \underline{\quad} = 100$	$71 + \underline{\quad} = 100$	$51 + \underline{\quad} = 100$	$66 + \underline{\quad} = 100$
$18 + \underline{\quad} = 100$	$47 + \underline{\quad} = 100$	$29 + \underline{\quad} = 100$	$36 + \underline{\quad} = 100$
$77 + \underline{\quad} = 100$	$86 + \underline{\quad} = 100$	$54 + \underline{\quad} = 100$	$69 + \underline{\quad} = 100$
$35 + \underline{\quad} = 100$	$58 + \underline{\quad} = 100$	$22 + \underline{\quad} = 100$	$42 + \underline{\quad} = 100$
$81 + \underline{\quad} = 100$	$64 + \underline{\quad} = 100$	$57 + \underline{\quad} = 100$	$72 + \underline{\quad} = 100$

Step 33 (Stage 5)

Groupings of numbers that subtract from 100.

For example:

$100 - 43 = \underline{\quad}$	$100 - \underline{\quad} = 28$	$100 - 48 = \underline{\quad}$	$100 - \underline{\quad} = 13$
$100 - 25 = \underline{\quad}$	$100 - 52 = \underline{\quad}$	$100 - 21 = \underline{\quad}$	$100 - \underline{\quad} = 39$
$100 - 39 = \underline{\quad}$	$100 - 45 = \underline{\quad}$	$100 - 76 = \underline{\quad}$	$100 - 68 = \underline{\quad}$

etc...

**These are only some examples of groupings within 100.
Students are expected to know all groupings of numbers that subtract from 100.**

STAGE 6 (STEPS 34 - 46)

Step 34 (Stage 6)

Addition and Subtraction facts to and within 20

$5 + 6 = \underline{\quad}$	$11 - 5 = \underline{\quad}$
$5 + 7 = \underline{\quad}$	$12 - 5 = \underline{\quad}$
$5 + 8 = \underline{\quad}$	$13 - 5 = \underline{\quad}$
$5 + 9 = \underline{\quad}$	$14 - 5 = \underline{\quad}$
$6 + 5 = \underline{\quad}$	$11 - 6 = \underline{\quad}$
$6 + 7 = \underline{\quad}$	$13 - 6 = \underline{\quad}$
$6 + 8 = \underline{\quad}$	$14 - 6 = \underline{\quad}$
$6 + 9 = \underline{\quad}$	$15 - 6 = \underline{\quad}$
$7 + 5 = \underline{\quad}$	$12 - 7 = \underline{\quad}$
$7 + 6 = \underline{\quad}$	$13 - 7 = \underline{\quad}$
$7 + 8 = \underline{\quad}$	$15 - 7 = \underline{\quad}$
$7 + 9 = \underline{\quad}$	$16 - 7 = \underline{\quad}$
$8 + 5 = \underline{\quad}$	$13 - 8 = \underline{\quad}$
$8 + 6 = \underline{\quad}$	$14 - 8 = \underline{\quad}$
$8 + 7 = \underline{\quad}$	$15 - 8 = \underline{\quad}$
$8 + 9 = \underline{\quad}$	$17 - 8 = \underline{\quad}$
$9 + 5 = \underline{\quad}$	$14 - 9 = \underline{\quad}$
$9 + 6 = \underline{\quad}$	$15 - 9 = \underline{\quad}$
$9 + 7 = \underline{\quad}$	$16 - 9 = \underline{\quad}$
$9 + 8 = \underline{\quad}$	$17 - 9 = \underline{\quad}$

**Make up flash cards to help you learn these.
Remember your teacher will ask you questions "out of order" and
with missing addends**

Step 35 (Stage 6)

Groupings of numbers to 1000

For example:

$$235 + ? = 1000$$

$$? + 876 = 1000$$

$$752 + ? = 1000$$

$$1000 - 345 = ?$$

$$1000 - ? = 478$$

$$1000 - 276 = ?$$

etc....

Step 36 (Stage 6)

$$3 \times 0 = 0$$

$$0 \div 3 = 0$$

$3 \times 1 = 3$	$3 \div 3 = 1$
$3 \times 2 = 6$	$6 \div 3 = 2$
$3 \times 3 = 9$	$9 \div 3 = 3$
$3 \times 4 = 12$	$12 \div 3 = 4$
$3 \times 5 = 15$	$15 \div 3 = 5$
$3 \times 6 = 18$	$18 \div 3 = 6$
$3 \times 7 = 21$	$21 \div 3 = 7$
$3 \times 8 = 24$	$24 \div 3 = 8$
$3 \times 9 = 27$	$27 \div 3 = 9$
$3 \times 10 = 30$	$30 \div 3 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 37 (Stage 6)

$4 \times 0 = 0$	$0 \div 4 = 0$
$4 \times 1 = 4$	$4 \div 4 = 1$
$4 \times 2 = 8$	$8 \div 4 = 2$
$4 \times 3 = 12$	$12 \div 4 = 3$
$4 \times 4 = 16$	$16 \div 4 = 4$
$4 \times 5 = 20$	$20 \div 4 = 5$
$4 \times 6 = 24$	$24 \div 4 = 6$
$4 \times 7 = 28$	$28 \div 4 = 7$
$4 \times 8 = 32$	$32 \div 4 = 8$
$4 \times 9 = 36$	$36 \div 4 = 9$
$4 \times 10 = 40$	$40 \div 4 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 38 (Stage 6)

$10 \times 10 = 100$
$11 \times 10 = 110$
$12 \times 10 = 120$

$$13 \times 10 = 130$$

Etc.

$$25 \times 10 = 250$$

$$36 \times 10 = 360$$

$$48 \times 10 = 480$$

$$54 \times 10 = 540$$

Etc.

$$540 \div 10 = 54$$

$$890 \div 10 = 89$$

Etc.

- When you multiply a number by 10, you move all the digits one place to the left.
- When you divide a number by 10, you move all the digits one place to the right.
- Adding a zero to a number when multiplying it by 10 is a “trick” but you need to understand why and explain using your knowledge of place value. It becomes 10 times bigger.

Step 39 (Stage 6)

$$10 \times 100 = 1000$$

$$11 \times 100 = 1100$$

$$12 \times 100 = 1200$$

$$13 \times 100 = 1300$$

Etc.

$$25 \times 100 = 2500$$

$$36 \times 100 = 3600 \text{ AND } 3600 \div 100 = 36$$

$$48 \times 100 = 4800 \text{ AND } 4800 \div 100 = 48$$

$$54 \times 100 = 5400 \text{ AND } 5400 \div 100 = 54$$

- When you multiply a number by 100, you move all the digits two places to the left.
- When you divide a number by 100, you move all the digits two places to the right.
- Adding 2 zeros to a number when multiplying it by 100 is a “trick” but you need to understand why and explain using your knowledge of place value. It becomes 100 times bigger.

Step 40 (Stage 6)

$$10 \times 1000 = 10,000$$

$$11 \times 1000 = 11,000$$

$$12 \times 1000 = 12,000$$

$$13 \times 1000 = 13,000$$

Etc.

$$25 \times 1000 = 25,000$$

$$\begin{aligned} 36 \times 1000 &= 36,000 \\ 48 \times 1000 &= 48,000 \\ 54 \times 1000 &= 54000 \text{ AND } 54,000 \div 1000 = 54 \end{aligned}$$

- When you multiply a number by 1000, you move all the digits three places to the left.
- When you divide a number by 1000, you move all the digits three places to the right.
- Adding 3 zeros to a number when multiplying it by 1000 is a “trick” but you need to understand why and explain using your knowledge of place value. It becomes 1000 times bigger.

Step 41 (Stage 6)

$6 \times 0 = 0$	$0 \div 6 = 0$
$6 \times 1 = 6$	$6 \div 6 = 1$
$6 \times 2 = 12$	$12 \div 6 = 2$
$6 \times 3 = 18$	$18 \div 6 = 3$
$6 \times 4 = 24$	$24 \div 6 = 4$
$6 \times 5 = 30$	$30 \div 6 = 5$
$6 \times 6 = 36$	$36 \div 6 = 6$
$6 \times 7 = 42$	$42 \div 6 = 7$
$6 \times 8 = 48$	$48 \div 6 = 8$
$6 \times 9 = 54$	$54 \div 6 = 9$
$6 \times 10 = 60$	$60 \div 6 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 42 (Stage 6)

$7 \times 0 = 0$	$0 \div 7 = 0$
$7 \times 1 = 7$	$7 \div 7 = 1$
$7 \times 2 = 14$	$14 \div 7 = 2$
$7 \times 3 = 21$	$21 \div 7 = 3$
$7 \times 4 = 28$	$28 \div 7 = 4$
$7 \times 5 = 35$	$35 \div 7 = 5$
$7 \times 6 = 42$	$42 \div 7 = 6$

$7 \times 7 = 49$	$49 \div 7 = 7$
$7 \times 8 = 56$	$56 \div 7 = 8$
$7 \times 9 = 63$	$63 \div 7 = 9$
$7 \times 10 = 70$	$70 \div 7 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 43 (Stage 6)

$8 \times 0 = 0$	$0 \div 8 = 0$
$8 \times 1 = 8$	$8 \div 8 = 1$
$8 \times 2 = 16$	$16 \div 8 = 2$
$8 \times 3 = 24$	$24 \div 8 = 3$
$8 \times 4 = 32$	$32 \div 8 = 4$
$8 \times 5 = 40$	$40 \div 8 = 5$
$8 \times 6 = 48$	$48 \div 8 = 6$
$8 \times 7 = 56$	$56 \div 8 = 7$
$8 \times 8 = 64$	$64 \div 8 = 8$
$8 \times 9 = 72$	$72 \div 8 = 9$
$8 \times 10 = 80$	$80 \div 8 = 10$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 44 (Stage 6)

$9 \times 0 = 0$	$0 \div 9 = 0$
$9 \times 1 = 9$	$9 \div 9 = 1$
$9 \times 2 = 18$	$18 \div 9 = 2$
$9 \times 3 = 27$	$27 \div 9 = 3$
$9 \times 4 = 36$	$36 \div 9 = 4$
$9 \times 5 = 45$	$45 \div 9 = 5$
$9 \times 6 = 54$	$54 \div 9 = 6$
$9 \times 7 = 63$	$63 \div 9 = 7$
$9 \times 8 = 72$	$72 \div 9 = 8$

$$9 \times 9 = 81 \quad 81 \div 9 = 9$$

$$9 \times 10 = 90 \quad 90 \div 9 = 10$$

Make up flashcards to help you learn these.
Remember your teacher will ask you questions “out of order”.

Step 45

How many tenths are in a number (decimals)?

How many tenths in 1?

How many tenths in 2.9?

How many tenths in 8.9?

3.60 = How many tenths?

4.55 = How many tenths?

etc...

87 tenths = ?

32 tenths = ?

127 tenths = ?

etc...

Step 46

How many hundredths are in a number (decimals)?

How many hundredths in 2?

How many hundredths in 2.5?

How many hundredths in 3.9?

5.77 = How many hundredths?

6.89 = How many hundredths?

8.23 = How many hundredths?

etc...

457 hundredths = ?

592 hundredths = ?

etc...

STAGE 7 (STEPS 47 - 52)

Step 47 (Stage 7)

**(Revision of Multiplication and Division Facts
for the 3, 4, 5, 6, 7, 8, and 9 Times Tables)**

Remember Fact Families!

What is a fact family?

A fact family is a group of math facts using the same numbers. In the case of multiplication and division, you use three numbers and get four facts.

For example, you can form a fact family using the three numbers 3, 6 and 18, or 4, 7 and 28:

$$6 \times 3 = 18, 3 \times 6 = 18,$$
$$18 \div 6 = 3, 18 \div 3 = 6$$

$$7 \times 4 = 28, 4 \times 7 = 28$$
$$28 \div 7 = 4, 28 \div 4 = 7$$

etc...

Step 48 (Stage 7)

Fraction, decimal, percentage conversions for halves, thirds, quarters, fifths, and tenths.

e.g. $\frac{3}{4} = 0.75 = 75\%$

$$\frac{1}{2} = 0.5 = 50\%$$

$$\frac{1}{3} = 0.33 = 33\%$$

$$\frac{2}{3} = 0.66 = 66\%$$

$$\frac{1}{4} = 0.25 = 25\%$$

$$\frac{3}{4} = 0.75 = 75\%$$

$$\frac{1}{5} = 0.2 = 20\%$$

$$\frac{2}{5} = 0.4 = 40\%$$

$$\frac{3}{5} = 0.6 = 60\%$$

$$\frac{4}{5} = 0.8 = 80\%$$

$$\frac{1}{10} = 0.1 = 10\%$$

$$\frac{2}{10} = 0.2 = 20\%$$

$$\frac{3}{10} = 0.3 = 30\%$$

$$\frac{4}{10} = 0.4 = 40\%$$

$$\frac{5}{10} = 0.5 = 50\%$$

$$\frac{6}{10} = 0.6 = 60\%$$

$$\begin{aligned}7/10 &= 0.7 = 70\% \\8/10 &= 0.8 = 80\% \\9/10 &= 0.9 = 90\% \\10/10 &= 1.0 = 100\%\end{aligned}$$

Step 49 (Stage 7)

Square numbers to 100 and the corresponding roots.

E.g. $7^2 = 49$, $\sqrt{49} = 7$

$1^2 = 1$	$\sqrt{1} = 1$
$2^2 = 4$	$\sqrt{4} = 2$
$3^2 = 9$	$\sqrt{9} = 3$
$4^2 = 16$	$\sqrt{16} = 4$
$5^2 = 25$	$\sqrt{25} = 5$
$6^2 = 36$	$\sqrt{36} = 6$
$7^2 = 49$	$\sqrt{49} = 7$
$8^2 = 64$	$\sqrt{64} = 8$
$9^2 = 81$	$\sqrt{81} = 9$
$10^2 = 100$	$\sqrt{100} = 10$

Step 50 (Stage 7)

Powers of Numbers to 10

The little number means times the big number by itself that many times

E.g. $4^4 = 4 \times 4 \times 4 \times 4 = 256$

Step 51 (Stage 7)

Factors of numbers to 100

What numbers are multiplied together to form a specified whole number?

E.g. The factors of 36 = {1, 2, 3, 4, 6, 9, 12, 18, 36}

Step 52 (Stage 7)

Common multiples of numbers to 10

Multiples that are **common** to two or more numbers are said to be **common multiples**.
e.g. **35, 70, 105**, are common multiples of **5** and **7**

To do this:

1. List the multiples of a number to 10.

e.g. 4: 4, 8, **12**, 16, 20, **24**, 28, 32, **36** ...

6: 6, **12**, 18, **24**, 30, **36** ...

2. List the common multiples for the numbers 4 and 6:

12, 24, 36

STAGE 8 (STEPS 53 - 56)

Step 53 (Stage 8)

Fractions Decimals Percentages Conversions

E.g. $9/8 = 1.125 = 112.5\%$

Step 54 (Stage 8)

Common factors of numbers to 100

E.g. common factors of 48 and 64 = {1, 2, 4, 8, 16}

To do this:

1. List the factors for each number,

e.g. 20: **1, 2, 4**, 5, 10, 20

24: **1, 2, 3, 4**, 6, 8, 12, 24

2. List the COMMON factors of 20 and 24.

They are 1, 2 and 4.

Step 55 (Stage 8)

Least common multiples of numbers to 10

e.g. 24 is the least common multiple of 6 and 8

To do this:

1. List the multiples of a number to 10.
e.g. 4: 4, 8, 12, 16, 20, 24, 28, 32, 36
6: 6, 12, 18, 24, 30, 36 ...
2. List the common multiples for the numbers 4 and 6:
12, 24, 36
3. Circle or underline the LEAST COMMON MULTIPLE
12

Step 56

EXTRA for EXPERTS!

Divisibility Rules

Divisibility Rules “divisible” means a number is able to be divided evenly with another number with NO remainders.

A number is divisible by	If
2	The ones digit is even: 0,2,4,6,8 (e.g. 344,90852,650,7778)
3	The sum of the digits is divisible by 3 (e.g. 344,652 since $3+4+4+6+5+2=24$ and 24 is divisible by 3)
4	The number formed by the last two digits is divisible by 4 (e.g. 156,832 since 32 is divisible by 4)

5	The ones digit is a 0 or 5 (e.g. 105,897,650)
6	The number is divisible by 2 and 3 (e.g. The number 344,652 since it is divisible by 3 and ends in 2)
8	The number formed by the last three digits is divisible by 8 (e.g. 7,268 - since 268 is divisible by 8) <i>2 + 6 + 8 = 16 and 16 is divisible by 8</i>
9	The sum of the digits is divisible by 9 (e.g. 458,901 since $4+5+8+9+0+1=27$ and 27 is divisible by 9)
10	The digit in the ones is 0 (e.g.387,920 since it ends with a 0)