Language of Addition

- Altogether
- Count on
- More
- And
- Increase by
- Join
- Add
- Combine
- Plus
- Total
- Sum of

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Remember… mental maths should be completed without written working.

Mental Addition

Strategies

Number Bonds/Families

e.g

60+40

(so 6+4=10 therefore 60+40=100)

Partitioning

Tens/Units Separate

e.g.

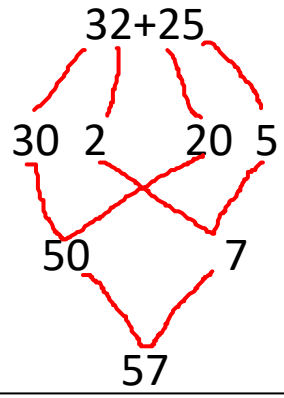
32+25

32+20=52

add 5 units

=57

Tens + Tens
Units + Units



Double/Near Doubles

e.g. 45+46

(double 45=90 then add 1)

Compensating

e.g. 89+9

(+1) (-1)

90+8

Keep the big number in your head and count on

Written Addition Calculations

```
  T U
  2 0
+ 1 3
-----
```

These are called vertical calculations

Digits should be lined up in the correct column	Always start by adding units (if a whole number), or the number furthest to the right when using decimals.	If a number needs to be carried it goes under the line of the next column.	Keep on adding until the vertical addition is complete.

Start here

```
  1.79
+ 3.64
-------
```

```
  364
+ 879
 1243
  11
```

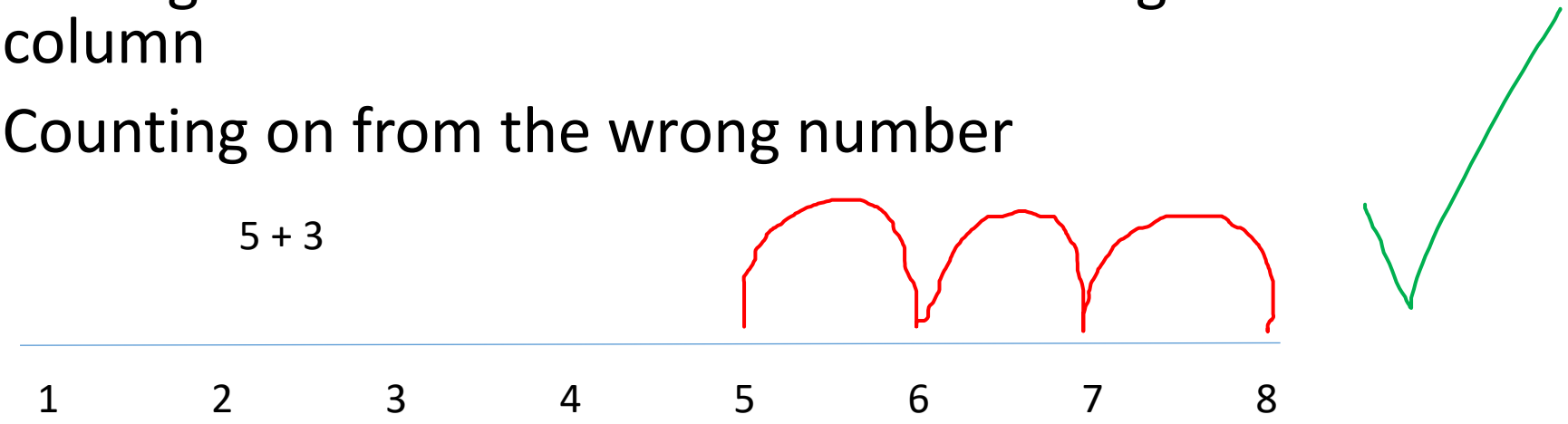
```
  364
+ 879
 1243
 111
```

```
  466
+ 326
  2
-----
  1
```

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Common Mistakes

- Putting numbers in the wrong column
- Putting the decimal point in the wrong place
- Forgetting to write the number they have carried
- Forgetting to add the number that has been carried
- Putting the number carried into the wrong column
- Counting on from the wrong number



Adding Fractions

1. Find the lowest common denominator
2. Convert fractions into equivalent fractions
3. If there are whole numbers, add them first before adding the fractions
4. Only add the numerator (number on top).
5. If you have made improper fraction divide the top number by the bottom number to make a mixed number
6. If there are still 2 whole numbers, add them together.
7. REMEMBER TO SIMPLIFY!! and SHOW YOUR WORKING

Common Errors

- Choosing wrong denominator
- Adding the denominator
- Forgetting to simplify
- Forgetting to add whole numbers

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Adding Fractions

Hard

$3\frac{2}{3} + 4\frac{5}{9}$

$7\frac{6}{9} + \frac{5}{9}$

$7\frac{11}{9}$

$7 + 1\frac{2}{9}$

$8\frac{2}{9}$

Medium

$\frac{3}{4} + \frac{4}{5}$

$\frac{15}{20} + \frac{16}{20}$

$\frac{31}{20}$

$1\frac{11}{20}$

Easy

$\frac{1}{4} + \frac{1}{8}$

$\frac{2}{8} + \frac{1}{8}$

$\frac{3}{8}$

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Adding Negative Numbers



- When you add a negative you treat it as a subtraction
- When working with negative numbers, encourage children to think of a thermometer

Children should have a secure understanding of previous work ←

- Extension

-24 + (-16)

$$\begin{array}{r} 24 \\ +\ 16 \\ \hline -40 \end{array}$$

-254 + (-132)

$$\begin{array}{r} 254 \\ +\ 132 \\ \hline -386 \end{array}$$

Easy	Medium	Hard
10 + (-3) = 7	4 + (-6) = -2	-6 + (-5) = -11

=> Remember to move away from '0'

When working with bigger negative number treat as an addition, adding the negative at the end.