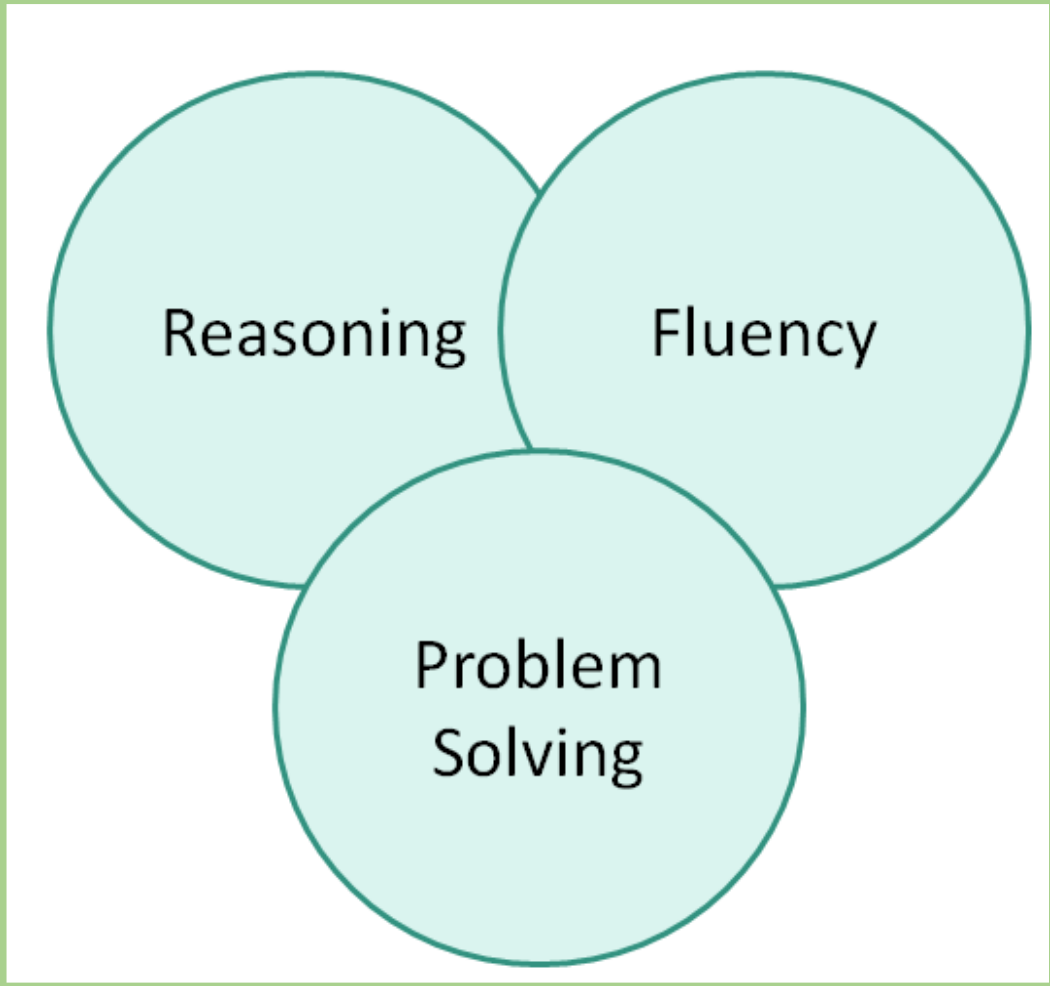
How to help your child with **Maths**



An example of fluency...

£2.99 + £3.99 =

How would you work out this question?

If a child has a good sense of number and they also have gained an understanding from a range of strategies taught.

They should be able to 'select' the most efficient way in finding their answer.

This one example can incorporate a whole range of strategies!

- rounding
- subtraction
- adding

Reasoning

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

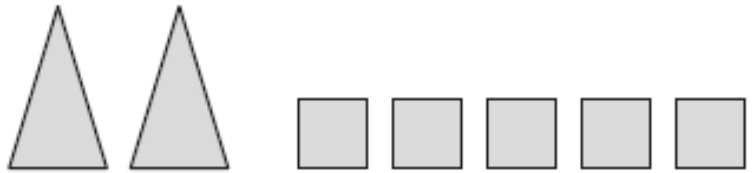
The arrow could be pointing at 10, 20, 100, 200, 1000 or 2000.

Prove it.

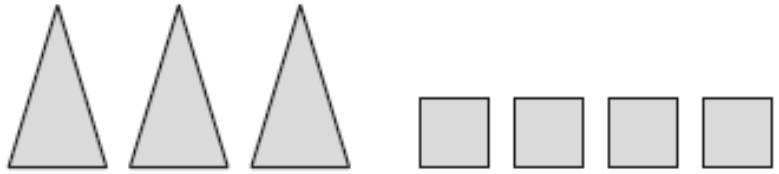
Problem Solving

"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." NC

Amy makes **25** using different shapes for tens and ones.



Amy makes a new number.



What is Amy's new number?

Parental engagement

"The effect of parental involvement at home was stronger than that of either socio-economic status or parents' level of education." Desforges and Abouchaar, 2003.

You don't have to be an expert at Maths to be able to engage with your child's learning. Even if you don't know the method they are using there are ways to support them.

- Ask them to explain the method and teach it to you.
- Explain that often in Maths there is more than one way to solve a problem, compare your methods and remember neither of you are wrong.
- Keep positive.

Talking about Maths

As a parent or caregiver you give your child their first impression of maths.
Is it a positive one? Often as adults we find ourselves saying things like, “I was never any good at Maths!” These sort of phrases can have a big impact on your child’s feelings towards Maths as they grow up.

- Talk positively about Maths.
- Point out the Maths in everyday life.
- Praise children for effort rather than talent.

Questions to ask while working together

Here are some questions you can ask your child while working together…

- What information do we already know? What do we need to find out?
- Have we done something like this before?
- What do we need to calculate?
- How can we use this in real life?

Maths is everywhere

Involve your children in as many real life activities that involve maths as you can.

- Reading the time on an analogue clock at home, compare it to a digital clock or watch.
- Going shopping and using money, working out change, sticking to a budget. Estimate how much it will cost. Do you have enough? etc.
- Baking, measuring out ingredients – ml, grams can sometimes both be used to measure.
- Football league tables, working out points, World Cup stats.
- Driving- How many miles to go still? What is the difference between miles and kilometres? You will find that the car is a place where you have a captive audience.

Games!

Maths fluency is the ability to solve calculations quickly and accurately in your head. Games are a great way for children to practise their fluency.

As well as the Maths games that your child brings home, there are other games that can be played with only a few resources.

- Board games (Snakes and Ladders, Monopoly etc.)
- 'Pairs' and 'Snap' can be adapted to whatever your child is learning (number bonds, times tables etc.)
- 'Risky' or 21s using a pack of cards.
- 'Make £500' / 'Bankrupt'
- Wonky – let's play!*

Play ‘Wonky’

Great place value game.

Strategic thinking.

Aim: To make the **greatest** number or **smallest** number

Decide on who goes first. Write the names of the players in the cells.
Take it in turns to roll the dice once and write the digit in the grid to create a number.
Pupils can choose to either place the digit in their number (row) or in their opponent's number.
Play continues with each player rolling the dice once and placing one number before the next player's go.
Winner is the person with what ever you have decided before hand – the biggest or smallest number.

Player name	Hundreds	Tens	Ones

Times tables

Much of the key learning of multiplication tables happens across Year 2, Year 3 and Year 4. It is fair to say that children who know their multiplication tables up to 12 x 12 (with a good amount of understanding as well as recall) cope better with the demands of the maths curriculum in many areas, such as formal written division, equivalent fractions, percentages and ratio and proportion. Even time - using base facts. * For minutes, seconds

7x used for days of week

12x used for months of the year

The expectation within the National Curriculum:

Year 1 – Count in multiples of twos, fives and tens
Year 2 – Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables
Year 3 – Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
Year 4 – Recall multiplication and division facts for multiplication tables up to 12 x 12
*** No point learning further than that**

(Multiplication Check in the summer term of Year 4)

https:/ttrockstars.com

Times tables… continued!

When learning a new times table try to follow a pathway,

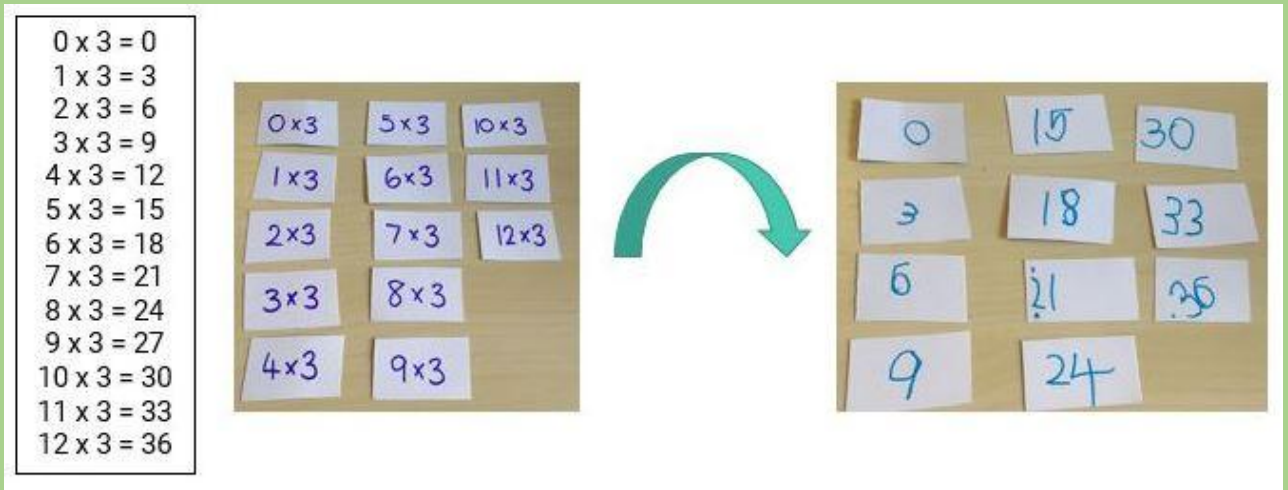
Learn ➡ Rehearse ➡ Recall ➡ Play/ apply/ assess

At the 'learning' phase, children benefit from seeing the multiplication table build up from the beginning, looking first at one group of the amount (e.g. 1 group / row of 3) and then building up by adding another group / row of 3 each time and seeing what the total becomes. This helps children to link multiplication to repeated addition, e.g. linking 4 x 3 (four rows of three) to 3 + 3 + 3 + 3 and knowing that both make 12.

Always ask can you see a pattern?
Is this number in the 3x table?
(Adding digits)
*We use our times tables sticks.

More times tables!

A nice thing to do at this point (with arrays of small items available) is to turn the facts into a set of cards with the ‘question’ on one side and the ‘answer’ on the back:



Once these cards have been made, there are lots of options for playing with them; first of all, in order to build some memory recall and then, once the child is starting to remember what is on the back, moving to playing with them out of order to further secure the learning. The point here is about taking time to build confidence and develop memory. Repeated rehearsal should strengthen the memory so don’t rush to reach the out of order and speed rounds.

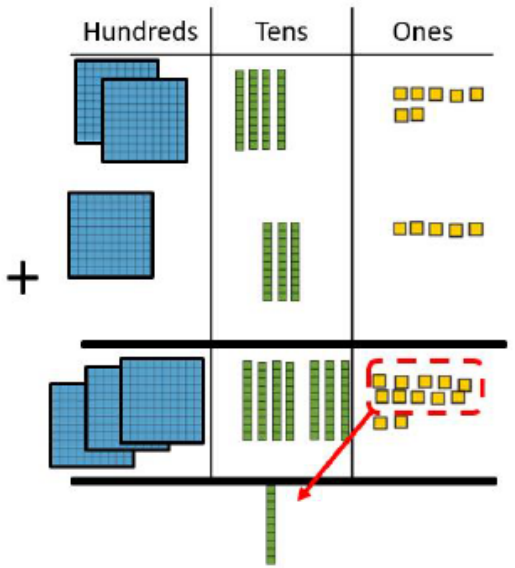
The recommended order to learn the times tables in is 2s, 5s, 10s (yr2) 3s, 4s, 8s, (yr3) 11s, 6s, 9s and 12s and 7s last (usually yr4)

Written methods for calculations *(Column addition and subtraction)*

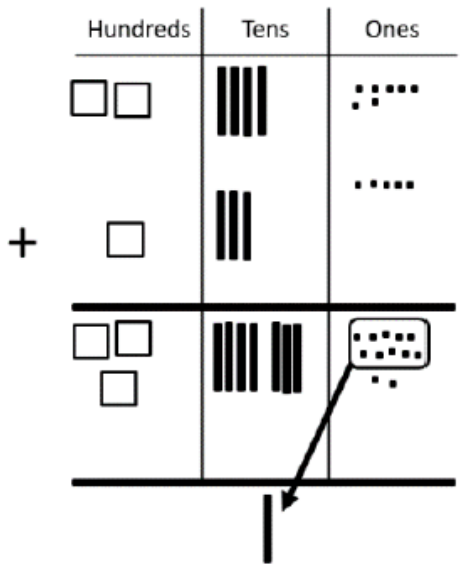
At school children will learn a number of different strategies to help them with their mental fluency. They start by using concrete resources, then developing a pictorial representation and finally learning the abstract (written and spoken). The formal written method is not usually taught until year 3 when the children have built a good conceptual understanding of the calculation.

Written method for addition

Concrete



Pictorial



Abstract - Written symbolic

$$\begin{array}{r} 2\ 4\ 7 \\ +\ 1\ 3\ 5 \\ \hline 3\ 8\ 2 \\ \hline 1 \end{array}$$

247 + 135 = 382

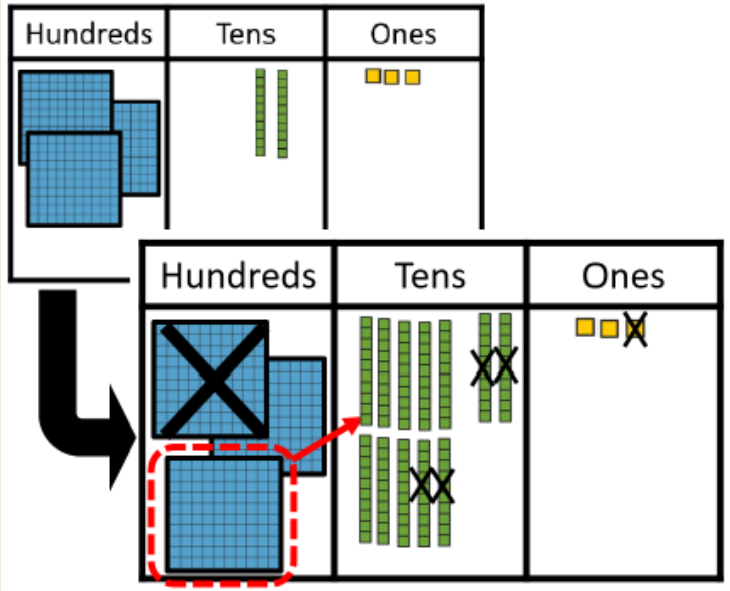
Abstract - Speaking frame

The sum of … ones and … ones is ... ones.
The sum of … tens and … tens is …tens.
The sum of … hundreds and … hundreds is … hundreds.
So, … + … is equal to … hundreds, … tens and … ones,
which is … .

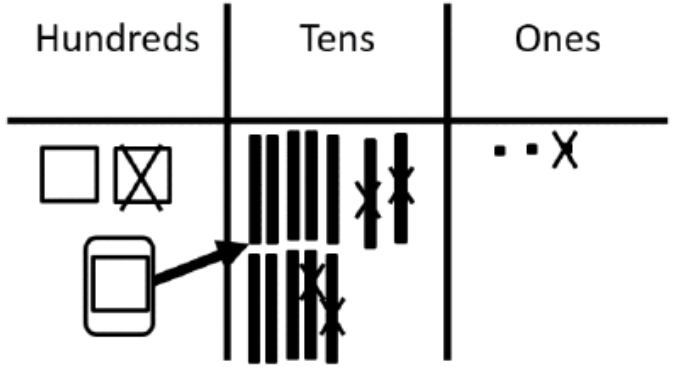
Have a go...

Written method for subtraction

Concrete



Pictorial



Abstract - Written symbolic

$$\begin{array}{r} {}^{2}\not{3}\,{}^{1}2\;3 \\ -\;1\;4\;1 \\ \hline 1\;8\;2 \end{array}$$

323 – 141 = 182

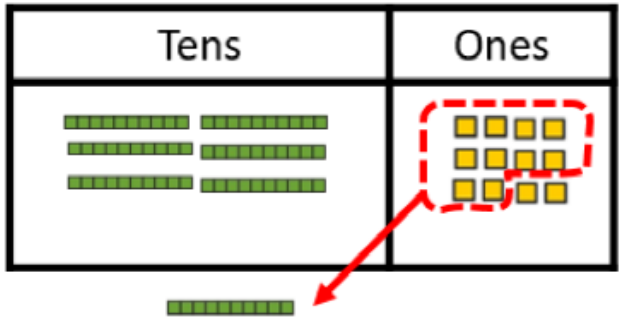
Abstract - Speaking frame

… ones take away … ones leaves … ones.
I can see that there aren't enough tens for me to take away … tens without regrouping.
Regroup one hundred into ten tens.
There are now … hundreds and … tens.
… tens take away … tens leaves … tens.
… hundreds take away … hundreds leaves … hundreds
So, … – … is equal to … hundreds, … tens and … ones, which is ….

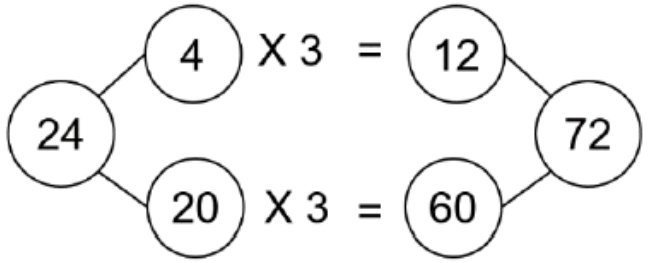
Have a go…

Written method for multiplication

Concrete



Pictorial - Jottings



Abstract - Written symbolic

$$\begin{array}{r} 2\ 4 \\ \times\quad 3 \\ \hline 7\ 2 \\ \hline \end{array}$$

1

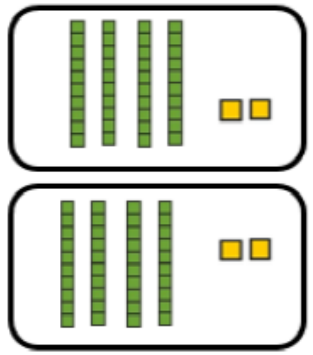
24 x 3 = 72

Abstract - Speaking frame

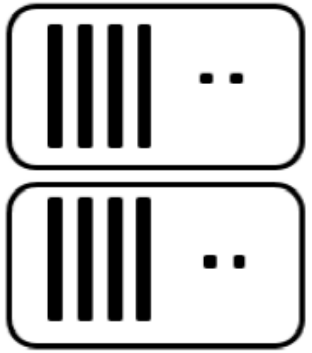
… groups of … ones is … ones.
I can regroup the … ones into … ten(s) and … one(s).
… groups of … tens is … tens.
… ten(s) added to … is … .
The product of … and … is … .

Written method for division

Concrete



Pictorial



Abstract - Written symbolic

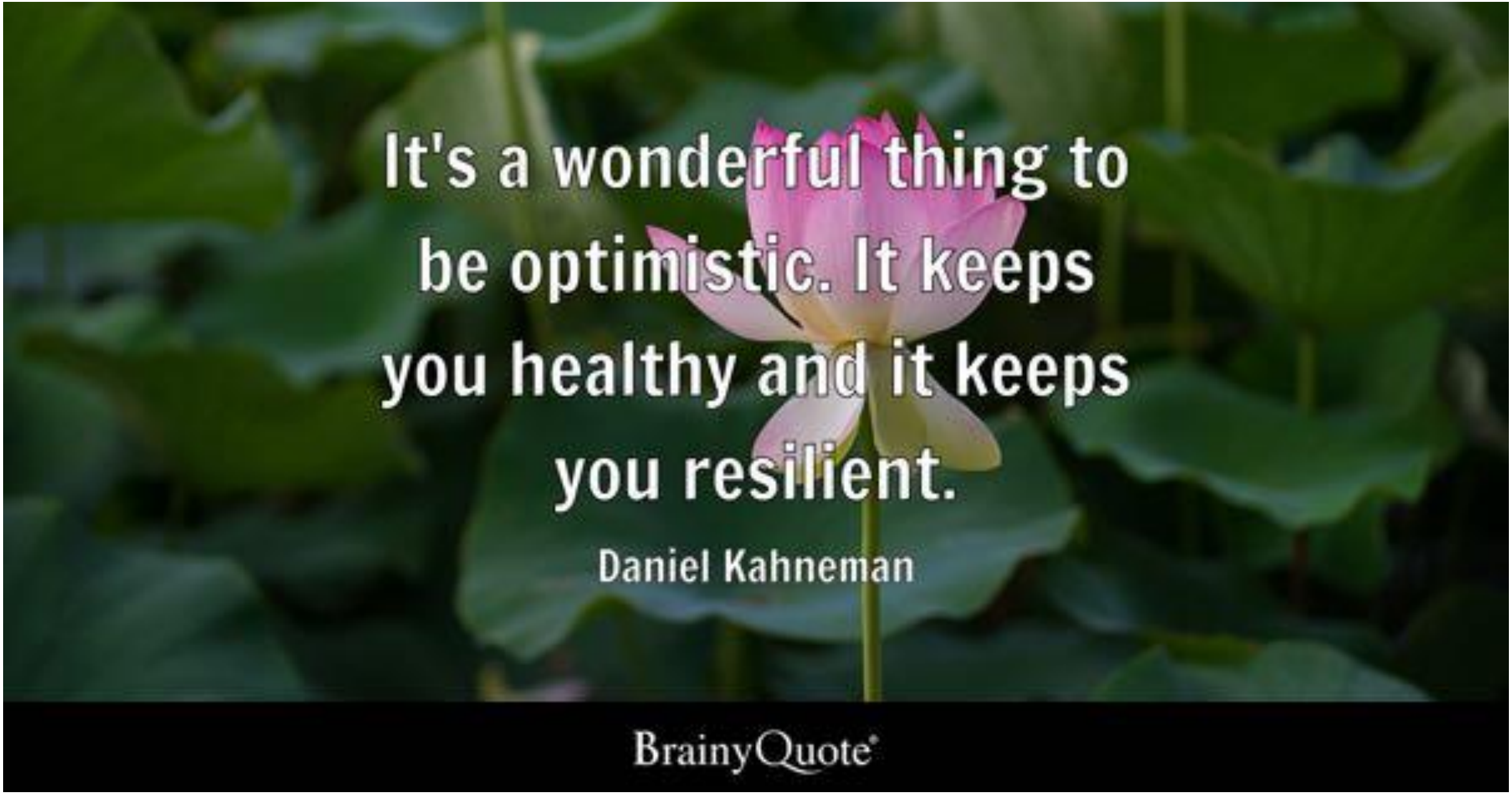
$$
\begin{array}{r|ll}
 & 4 & 2 \\
\hline
2 & 8 & 4 \\
- & 8 & \downarrow \\
\hline
 & 0 & 4 \\
 & & 4 \\
\hline
 & & 0
\end{array}
$$

$84 \div 2 = 42$

Abstract - Speaking frame

First, I am sharing … tens into … equal groups.
There are … tens in each group.
I have … ten(s) remaining.
Then, I am sharing … ones into … equal groups.
There are … ones in each group.
I have … one(s) remaining.
The quotient is … with … remainders.

“If you were allowed one wish for your child, seriously consider wishing them optimism. Optimists are normally cheerful and happy and therefore popular, they are resilient in adapting to failures and hardships, their chances of clinical depression are reduced, their immune system is stronger, they take better care of their health, they feel healthier than others and in fact likely to live longer.
Daniel Kahneman


It's a wonderful thing to be optimistic. It keeps you healthy and it keeps you resilient.
Daniel Kahneman
BrainyQuote