

MAGIC FINGERS

Suppose you're counting from 1 to 10 or doing sums such as $7-3$. Which of these do you think is the most babyish:

- counting on your fingers
- sucking both your feet at once
- getting the answer wrong
- using a calculator?

As sad as counting on your fingers might look, it's much the best option. And if you have to use a calculator, well what can we say? It's about time you grew up, so get those shoes off and start sucking.

Multiplying up to 10

With a bit of mathsy magic, you can also use your fingers for multiplying! You just need to know your times tables from $1 \times 1 = 1$ up to $5 \times 5 = 25$, then you can go on to multiply any numbers between 6 and 10. Imagine your fingers are marked like this:

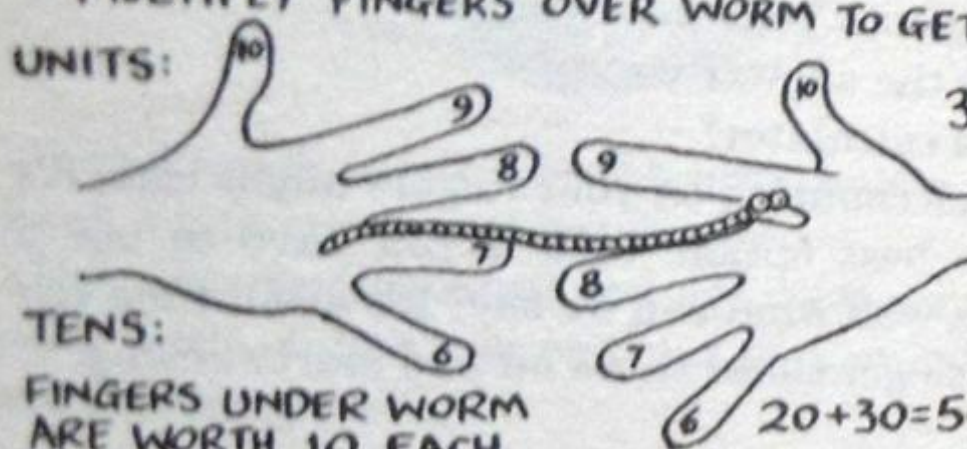


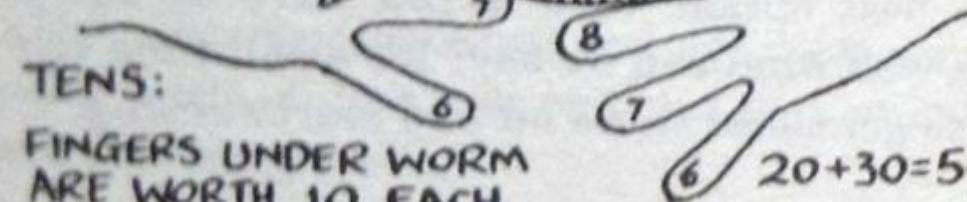
There are two separate jobs to do. You need to work out the "tens" and the extra "units". Let's try multiplying 7×8 to see how this works.

- Touch together the numbers 7 and 8 on your fingers.
- Imagine a worm sitting along your touching fingers.
- All the fingers underneath the worm count as 10 each, so just add them all up. (In this case it's $20 + 30 = 50$.)

- To get the extra units: multiply the fingers above the worm. (Here we've got three fingers on one side and two on the other: $3 \times 2 = 6$.)
- Add the tens and extra units together to get the answer. Here we have $50 + 6 = 56$ which is the correct answer because $7 \times 8 = 56$.

MULTIPLY FINGERS OVER WORM TO GET UNITS:

UNITS:  $3 \times 2 = 6$

TENS:  $20 + 30 = 50$

FINGERS UNDER WORM ARE WORTH 10 EACH.

ADD 6

$$\begin{array}{r} +50 \\ +6 \\ \hline =56 \end{array}$$

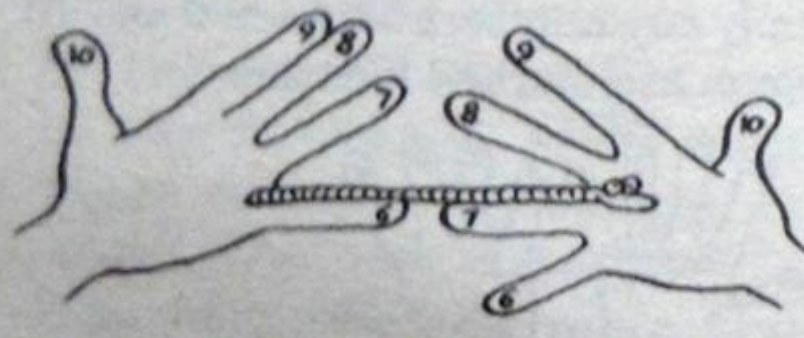
Be honest - it's good, isn't it? Here's how 6×7 would work out:

UNITS $4 \times 3 = 12$

TENS $10 + 20 = 30$

ADD 12

$$\begin{array}{r} +30 \\ +12 \\ \hline =42 \end{array}$$



Multiplying up to 15

The amazing thing is that you can use your fingers in a slightly different way to multiply any two numbers between 11 and 15. Suppose you want to multiply 12×14 , you imagine that your fingers are numbered 11 to 15 and touch together the 12 and 14 fingers. Then do these quick sums:



TENS: ADD UP FINGERS
UNDER WORM: $20 + 40 = 60$

EXTRA UNITS: MULTIPLY FINGERS
UNDER WORM:
 $2 \times 4 = 8$

ADD AN EXTRA 100

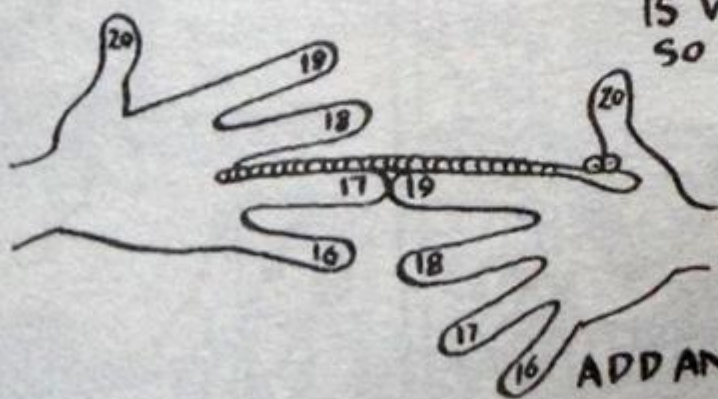
TOTAL = 168

(AND YES - $12 \times 14 = 168!$)

Try doing some other sums such as 13×13 or 15×11 . Just remember that for the extra units you use the fingers *under* the worm and don't forget to add on the extra 100.

Multiplying up to 20

You can even do sums like 17×19 ! Imagine your fingers are numbered 16 to 20 then touch together 17 and 19 and do this:



EACH FINGER UNDER WORM
IS WORTH 20
SO $2 + 4 = 6$ FINGERS
 $\times 20 = 120$

MULTIPLY FINGERS
ABOVE WORM TO
GET EXTRA UNITS:
 $3 \times 1 = 3$

ADD AN EXTRA 200

TOTAL = 323

This time the fingers under the worm are each worth 20, and for the extra units you use the fingers *above* the worm. Finally, it's 200 that you need to add on to get the right answer.