

PLACE VALUE

ADDITION - RENAMING

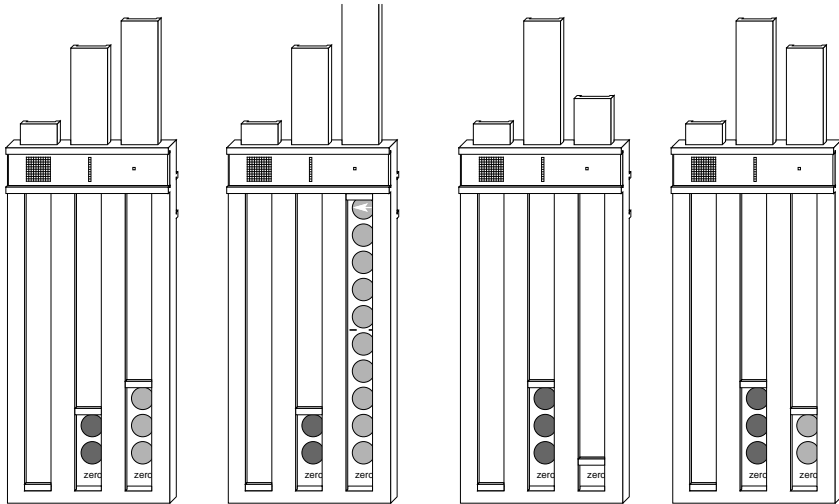
$$23 + 9 = 32$$

"Show 23.
Add 9."

"1..2..3..4..5..6..7.
You need to rename."

"Swap ten ones
for one ten."

"Add the rest ..8..9.
The answer is 32."



PLACE VALUE

SUBTRACTION - RENAMING

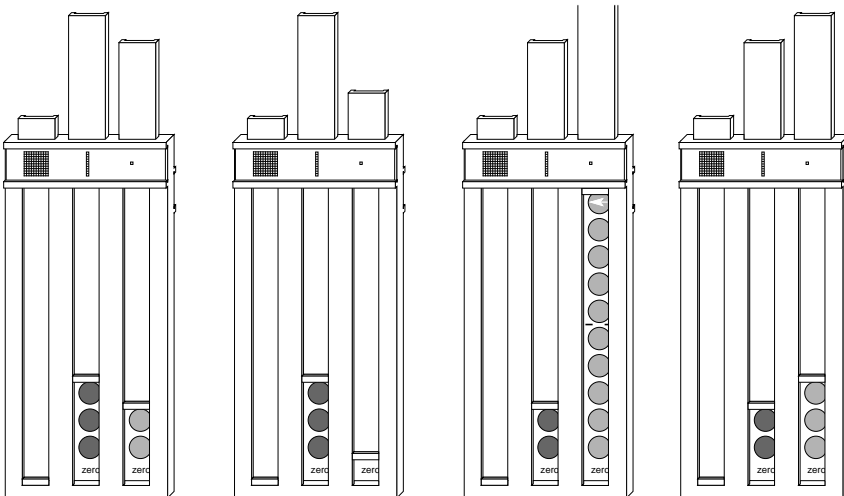
$$32 - 9 = 23$$

"Show 32.
Take 9."

"1..2.
You need to rename."

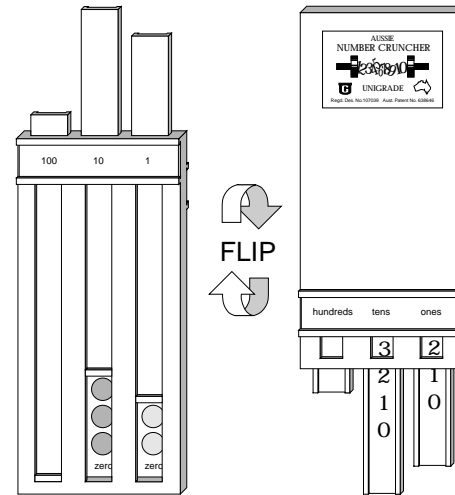
"Swap one ten
for ten ones."

"Take the rest
..3..4..5..6..7..8..9.
The answer is 23."



PLACE VALUE

MULTIPLICATION - CONTINUED ADDITION



"Add 8 lots of 4 to your Number Cruncher."

Each student adds 8 lots of 4, one at a time, renaming where appropriate.

"You have just shown that $8 \times 4 = 32$."

"Show what 5 lots of 32 equals."

PLACE VALUE

MULTIPLICATION - PARTIAL PRODUCTS

Each student adds the partial products, one at a time, to their Number Cruncher.

$$\begin{aligned}
 25 \times 25 &= (5 \times 5) + (5 \times 20) + (20 \times 5) + (20 \times 20) \\
 &= 25 + 100 + 100 + 400 \\
 &= 625
 \end{aligned}$$

