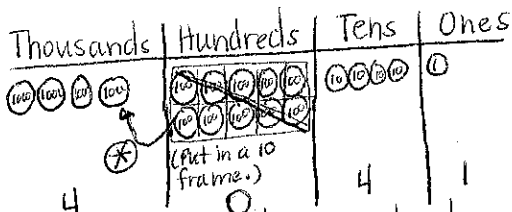


Singapore Math Models for Addition Computation:

1. Place Value Boards with Disks
2. Branch Method of Addition (used with 1 and 2 digit numbers only)
3. Left to Right (to ensure place value understanding)
4. Traditional Algorithm

Place Value Boards with Disks:

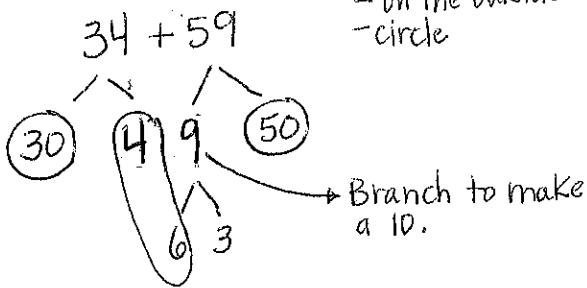
$$2,320 + 1,721 = \underline{4041}$$



- ⊗ Rename the 10 hundreds for a thousand.
- Place disks that represent the first addend in the correct place on the board. Next, add the second addend to the board.

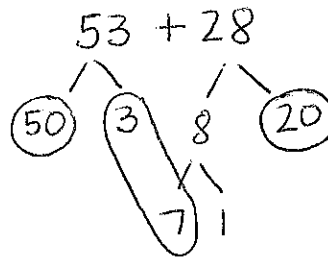
Branching Method:

- Multiples of 10
- on the outside
- circle



$$30 + 50 + 10 + 3 = 93$$

so $34 + 59 = 93$



$$50 + 20 + 10 + 1 = 81$$

Left to Right Method (Place Value understanding):

Begin on the left.

$$\begin{array}{r} 147 \\ + 281 \\ \hline \end{array}$$

- Add hundreds. Record the value.
- Add 10's together. Record the value.
- Add 1's together. Record the value.
- Add all together to get the sum.

$$\begin{array}{r} 300 \\ 120 \\ + 8 \\ \hline 428 \end{array}$$

$$\begin{array}{r} \downarrow \\ 7357 \\ + 1884 \\ \hline 8000 \\ 1100 \\ 130 \\ + 11 \\ \hline 9,241 \end{array}$$

- Add 1000's. Record the value.
- Add 100's. Record the value.
- Add 10's. Record the value.
- Add 1's. Record the value.
- Total all.

Traditional Algorithm:

(Renamed tens)

$$\begin{array}{r} 147 \\ + 281 \\ \hline 428 \end{array}$$

- 7 ones + 1 one = 8 ones
- 4 tens + 8 tens = 12 tens
12 tens renames as 1 hundred & 2 tens
- 2 hundreds + 1 hundred + 1 hundred = 4 hundreds

$$\begin{array}{r} 111 \\ 7357 \\ + 1884 \\ \hline 9241 \end{array}$$

- 7 ones + 4 ones = 11 ones
11 ones renames as 1 ten & 1 one
- 5 tens + 8 tens + 1 ten = 14 tens
14 tens renames as 1 hundred & 4 tens
- 3 hundreds + 8 hundreds + 1 hundred = 12 hundreds
12 hundreds renames as 1 thousand & 2 hundreds
- 7 thousands + 1 thousand + 1 thousand = 9 thousands