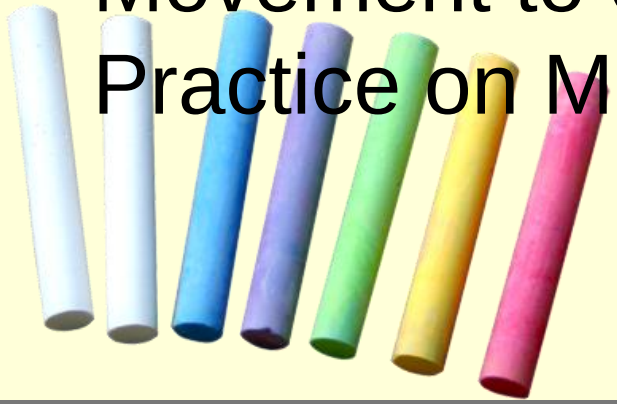
Math Parent Workshop
P3, P4 and P5
2 Feb 2013

Outline of the Workshop

- Math Head's Address (10min) 0900 – 0910
- Hands-On with Manipulatives (20min)

  0910 – 0930
- Sharing on the various structures of model drawing (30min) 0930-1000
- Movement to classrooms for Hands-On Practice on Model Drawing (1 hr) 1000-1100



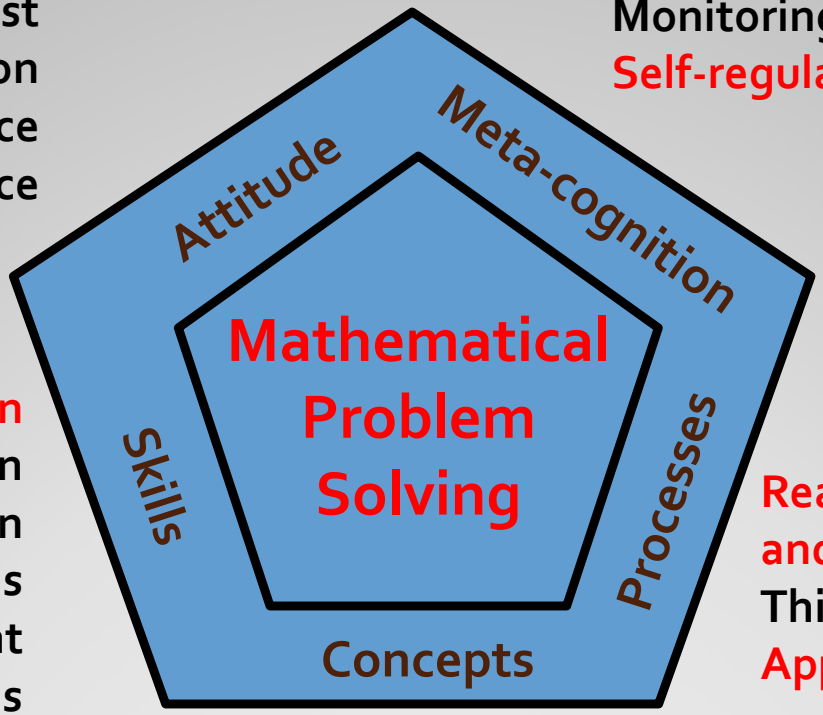
Why Are You Here?

- To learn some problem solving strategies that will help me understand how to solve certain primary Math problems
- To learn model-drawing

Singapore Mathematics Framework

Beliefs
Interest
Appreciation
Confidence
Perseverance

Monitoring of one's own thinking
Self-regulation of learning



Numerical calculation
Algebraic manipulation
Spatial visualisation
Data Analysis
Measurement
Use of mathematical tools
Estimation

Reasoning, communication and connections
Thinking skills and heuristics
Applications and modeling

Numerical
Algebraic
Geometrical
Statistical
Probabilistic
Analytical

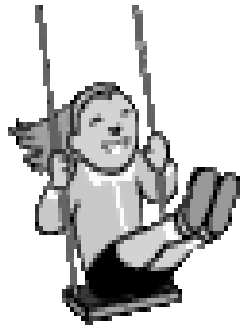
Source:
http://www.moe.edu.sg/education/syllabuses/sciences/files/maths-primary-2007.pdf

Benefits of Model Drawing

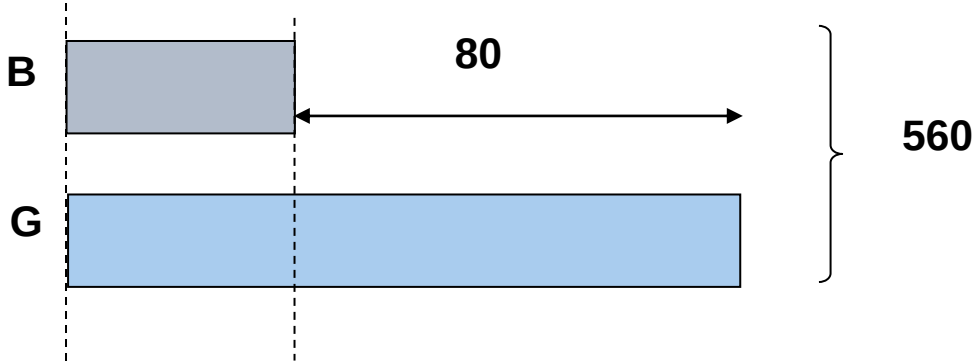
- Students have one strategy for solving every problem.
- Students have a visual to associate with numbers that can be abstract.
- Students learn to translate the English into math and then back into English.
- Students start to see the relationship behind numerical values.

P3

Comparison Model



There are 560 children in the park.
There are 80 fewer boys than girls.
How many girls are there in the park?



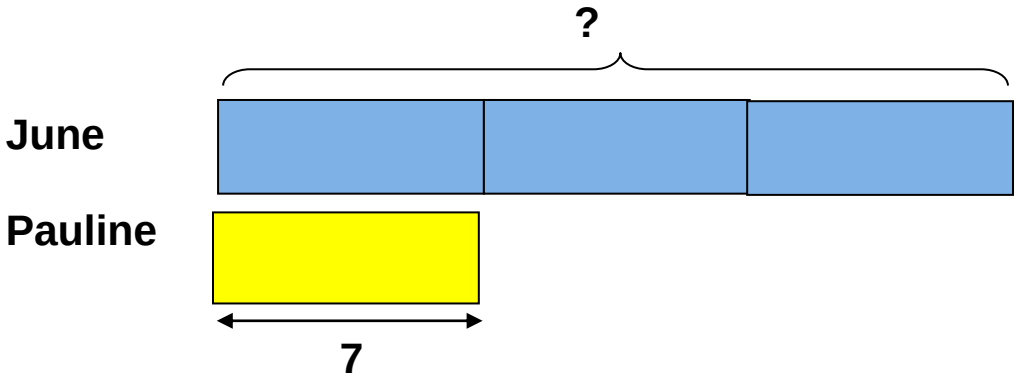
560 − 80 = 480
2u-----→ 480
1u ---→ 480 ÷ 2 = 240
240 + 80 = 320

There are 320 girls.

P3

Repeated Identity

June collected thrice as many stamps as Pauline. If Pauline collected 7 stamps, how many stamps did June collect?



1u----> 7

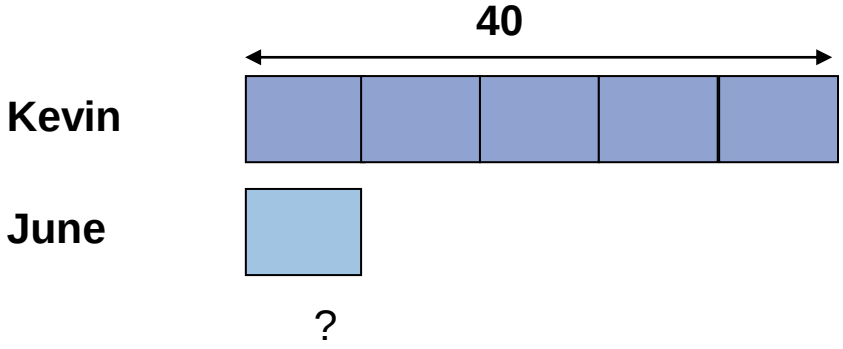
3u -----> 7 x 3 = 21

June collected 21 stamps.

P3

Equal Distribution

Kevin has 5 times as many beads as June. Kevin has 40 beads. How many beads does June have?



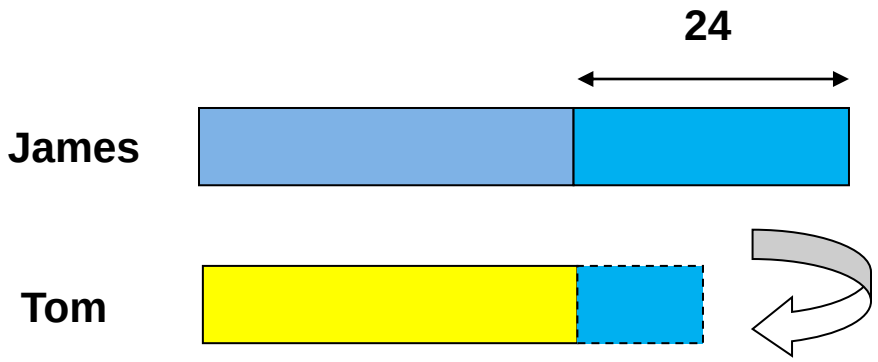
5 units -> 40
1 unit -> 40 ÷ 5 = 8

June has 8 stickers.

P3

Internal Transfer

James has 24 more marbles than Tom.
How many marbles must James give Tom so that they have an equal number of marbles?



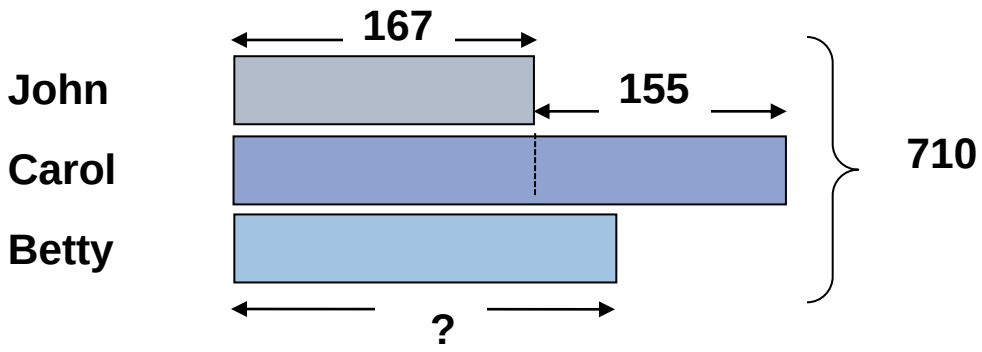
24 ÷ 2 = 12

James must give 12 marbles

P4

Comparison Model

John, Carol and Betty collected a total of 710 stamps. John collected 167 stamps. Carol collected 155 more stamps than John. How many stamps did Betty collect?



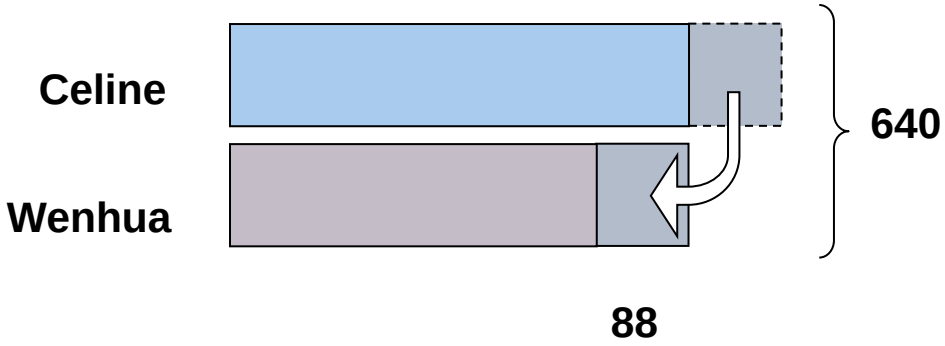
167 + 155 = 322
167 + 322 = 489
710 – 489 = 221

Betty collected 221 stamps.

P4

Comparison Equal Models

Celine and Wenhua have a total of $640.
If Celine gives Wenhua $88, they will have an equal amount of money each.
How much has each of them at first?



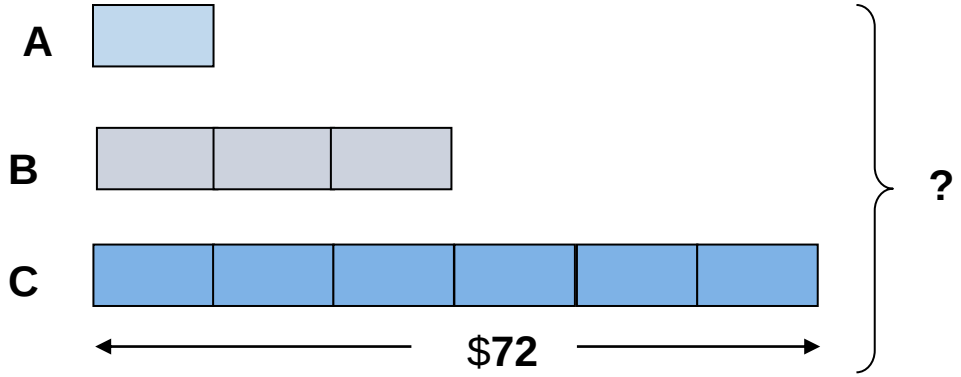
640 ÷ 2 = 320
320 + 88 = 408
Celine has $408

320 – 88 = 232
Wenhua has $232

P4

Repeated Identity

Alice had some money. Bob had 3 times as much money as Alice. Cathy had twice as much money as Bob. Cathy had $72. How much money had they in all?



6 u ------> 72

1 u -------> 72 ÷ 6

= 12

10 u.....> 10 x 12

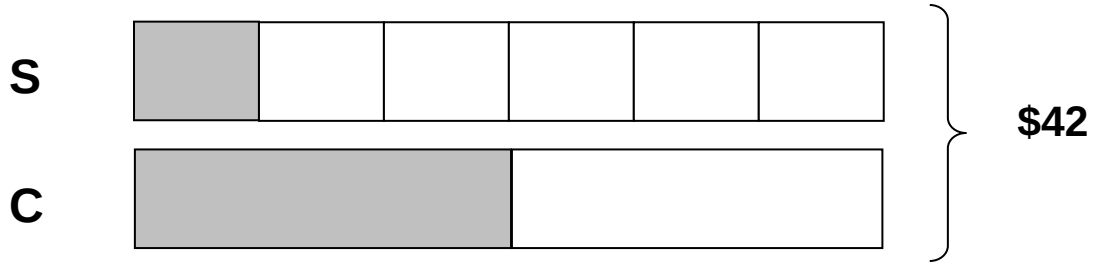
= 120

They had $120 in all

P4

Unitary Method

6 sweets cost as much as 2 chocolate bars.
Find the cost of 5 chocolate bars if the total cost of 6 sweets and 2 chocolate bars is $42.



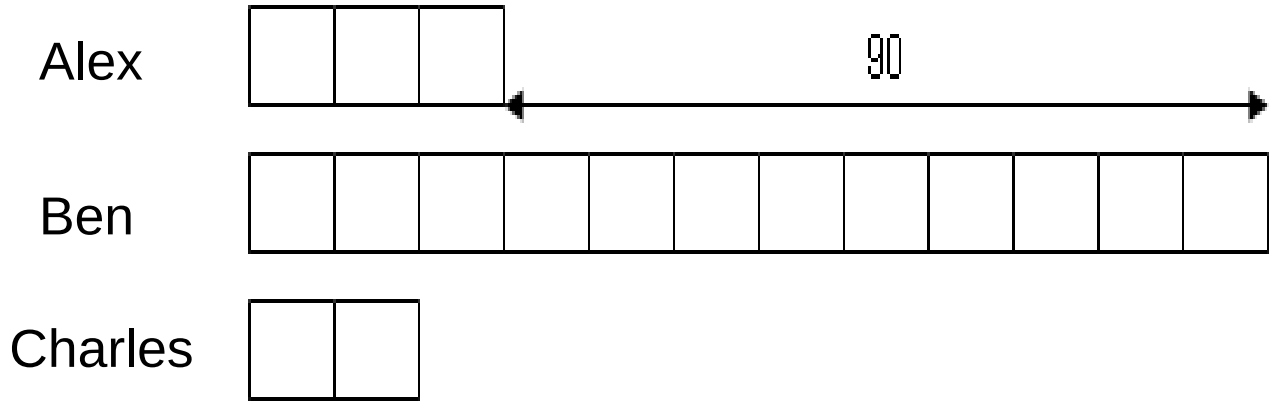
12 u ------> 42
1 u -------> 42 ÷ 12
= 3.5
5 chocolate bars → 3 x 5 = 15 u
15 u→ 15 x 3.5 = 52.50

The total cost is $52.50

P5

Repeated Identity

Alex has $\frac{1}{4}$ as much money as Ben, and Charles has $\frac{2}{3}$ as much money as Alex. If Ben has $90 more than Alex, find the total amount of money the three boys have.



9 u → 90
1 u → 90 ÷ 9 = 10
17 u → 17 × 10 = 170

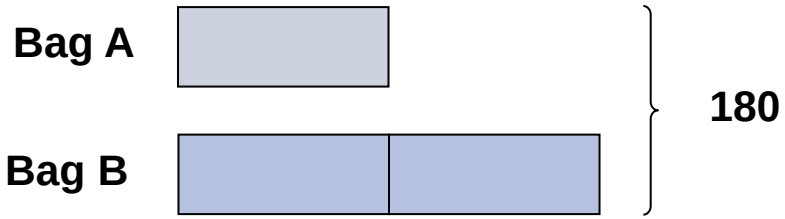
The three boys have $170.

P5

Internal Transfer with Unchanged Total

There were a total of 180 beads in two bags, Bag A and Bag B. After 47 beads were transferred from Bag A to Bag B, there were twice as many beads in Bag B than in Bag A. How many beads were there in each bag at first?

AFTER



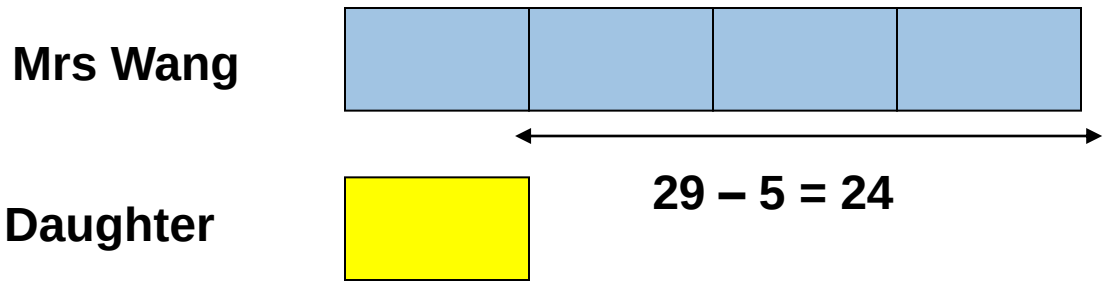
3 u → 180
1 u → 180 ÷ 3 = 60
2 u → 60 x 2 = 120

At first, Bag A→ 60 + 47 = **107**
Bag B → 120 – 47 = **73**

P5

External Transfer with Unchanged Difference

When Mrs Wang is 29 years old, her daughter is 5 years old. In how many years time will she be 4 times as old as her daughter?



3 u → 24

1 u → 24 ÷ 3 = 8

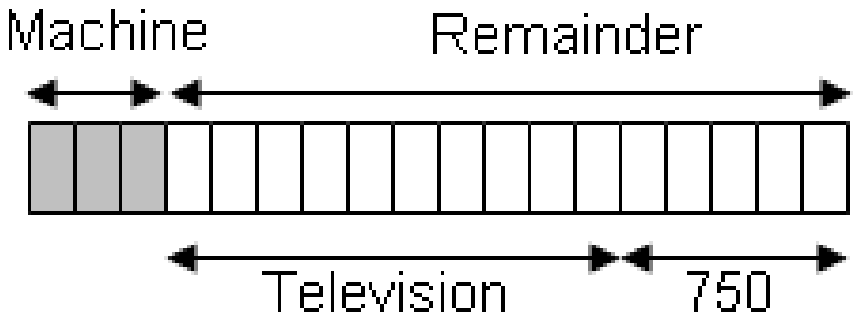
8 – 5 = **3**

Ans: In **3** years time

P5

Remainder Concept

Mrs Lim spent $\frac{1}{6}$ of her salary on a washing machine and $\frac{2}{3}$ of the remainder on a television set. If she saved the remaining $750, how much was her salary?



5 u → 750
1 u → 750 ÷ 5 = 150
18 u → 18 × 150 = **2700**

Her salary was $2700.


THINK