JUNYUAN PRIMARY SCHOOL

Welcome to

Primary 3 & Primary 4

Math Alive! 2024

Workshop for Parents

19 APRIL

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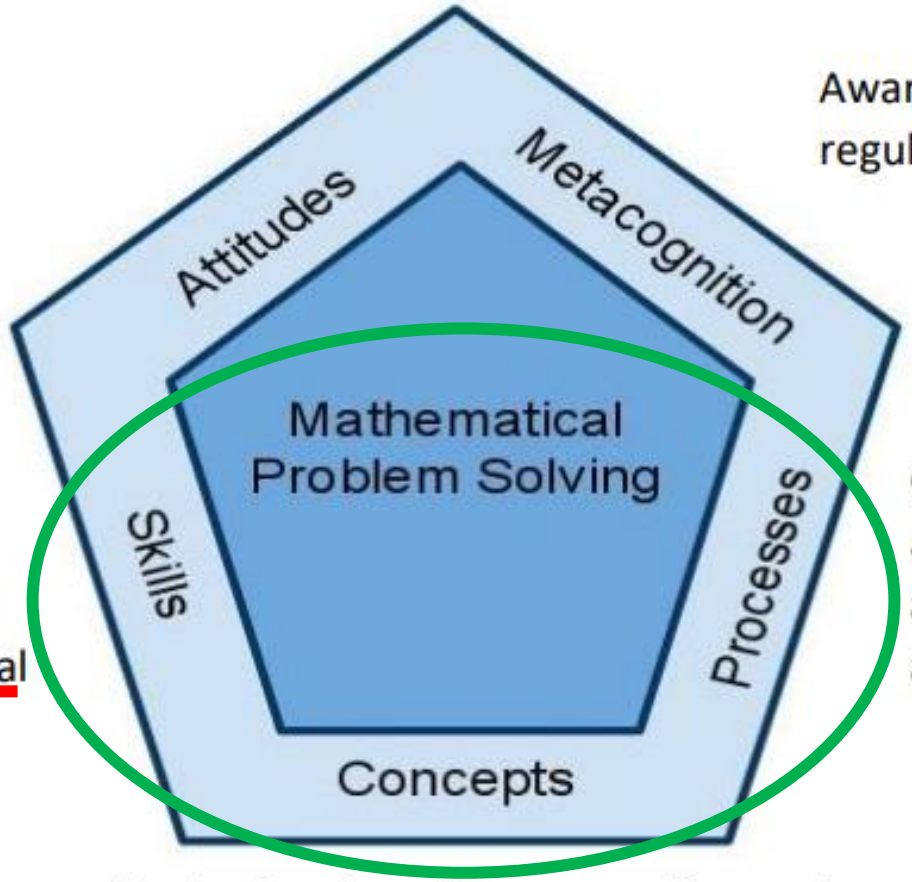
Thank you for your understanding and cooperation.

Singapore Mathematics Framework

Mathematics Curriculum Framework

Belief, appreciation, confidence, motivation, interest and perseverance

Awareness, monitoring and regulation of thought processes



Proficiency in carrying out operations and algorithms, visualising space, handling data and using mathematical tools

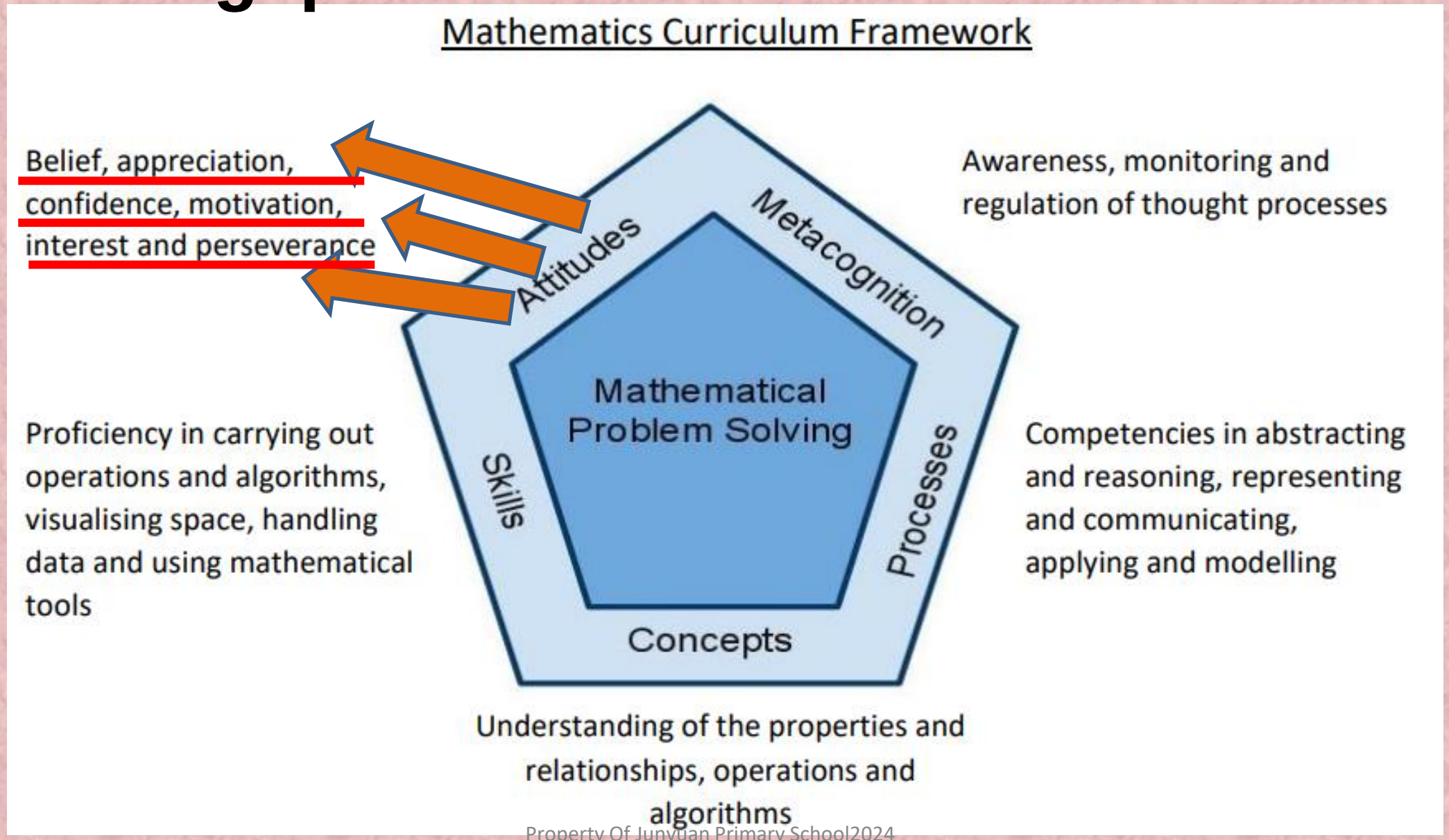
Competencies in abstracting and reasoning, representing and communicating, applying and modelling

Understanding of the properties and relationships, operations and algorithms

Conversion of units
Perimeter
Geometry
Money
Fractions
Percentage

Bar Graph
Area
Volume
Mass
Decimals
Algebra

Singapore Mathematics Framework



Math Alive!
In REAL LIFE
DAILY APPLICATIONS

Math Alive!

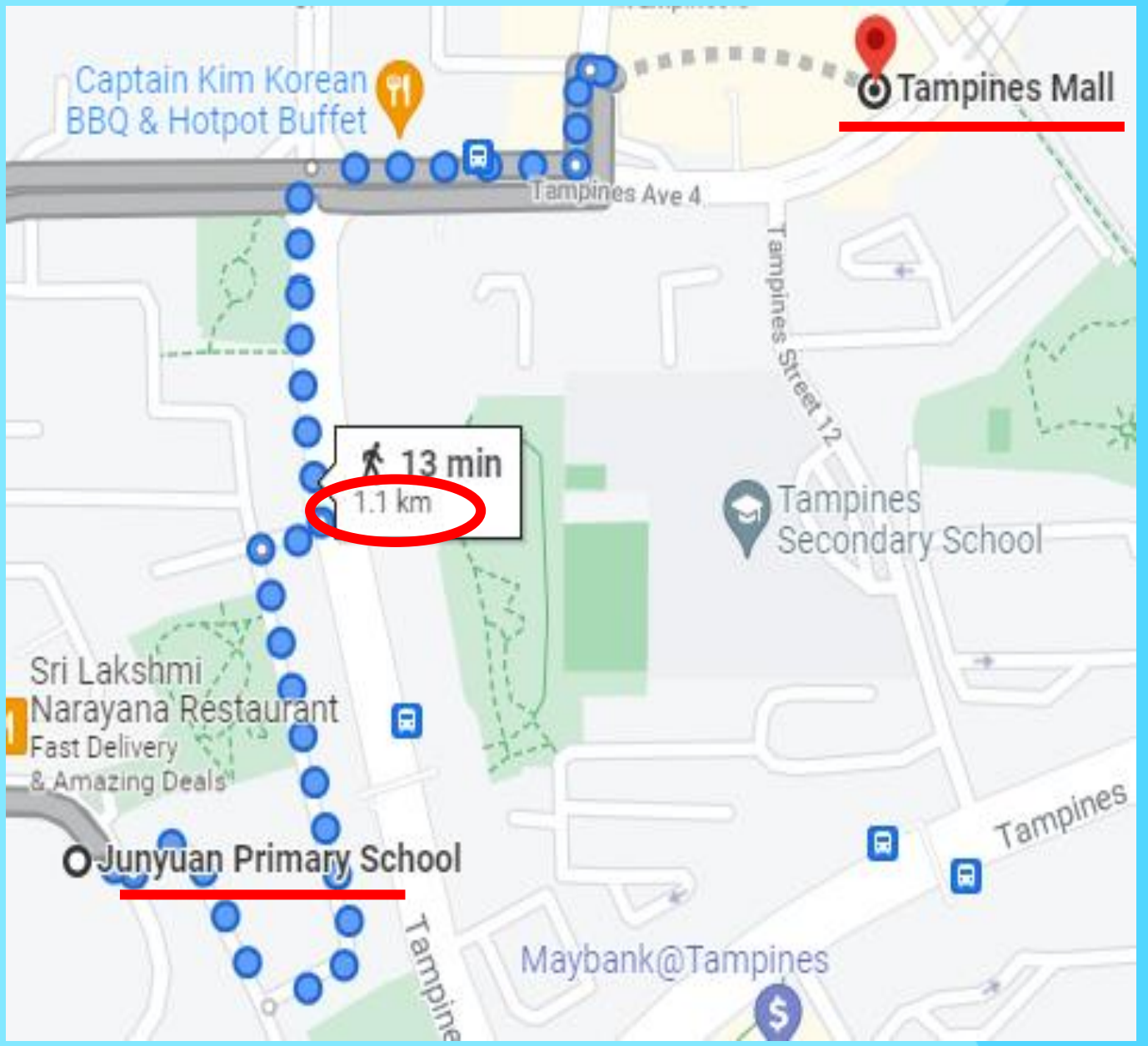
1 km = 1000 m

Junyuan Primary School, 2 Tampines Stre

Tampines Mall, 4 Tampines Central 5, Sin

via Tampines Ave 5 — 13 min

Mostly flat — 1.1 km



The distance from JYPS to Tampines Mall is about 1 km.

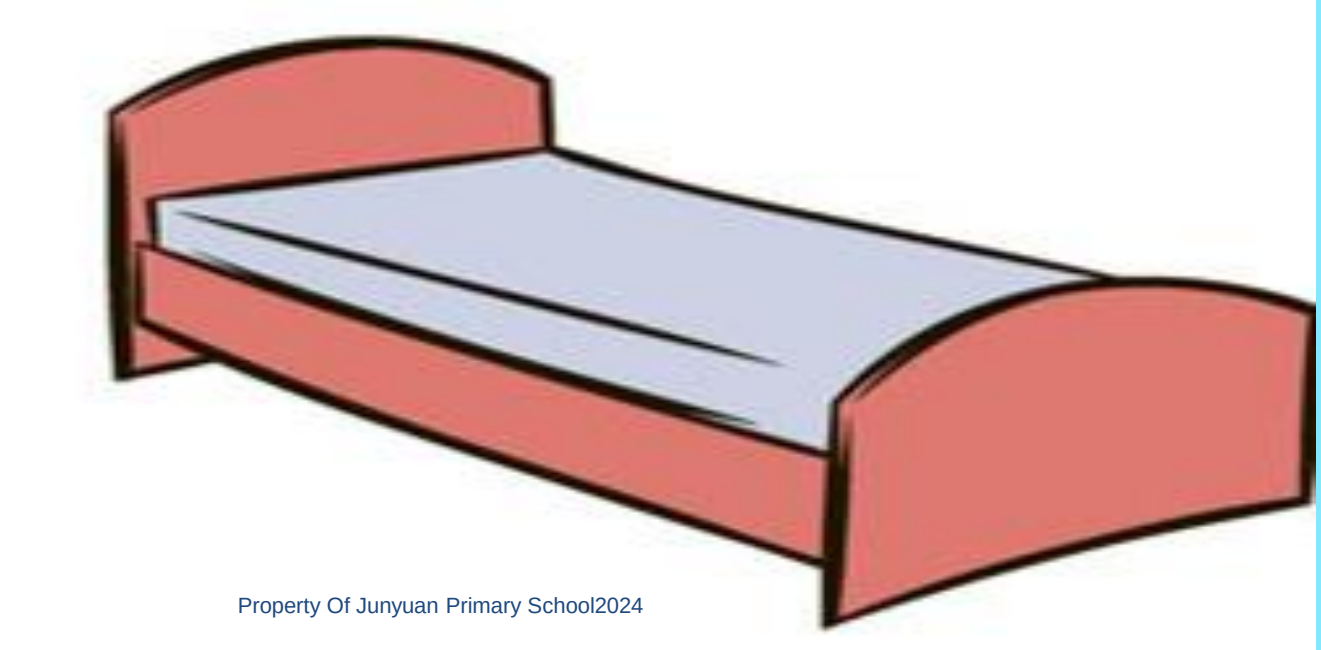
Time taken is 13 min.

Math Alive!

INGREDIENT	6-INCH
All-Purpose Flour	350 grams
Baking Powder	10 grams
Salt	3 grams
Butter, unsalted	254 grams
Granulated White Sugar	298 grams
Vanilla extract	5 grams
Eggs, large	4 pieces
Milk (Whole/ Full Fat)	273 grams
BAKING TIME ESTIMATE	40 minutes

1 cup butter or margarine
1 ½ cups sugar
4 eggs
1 teaspoon vanilla extract
½ teaspoon salt
4 cups sifted cake flour
4 teaspoons baking powder
1 ⅓ cups milk

Math Alive!



Math Alive!

Thinking Aloud

Look at the cruise packages. Which is a better deal?

SEATRAVEL

10 NIGHTS PACKAGE

- Cruise to Japan with a shopping stop-over in Hong Kong
- Mini-suites with personal attached balconies
- Indoor and outdoor movie theatre
- Wide spread of international cuisines available
- All day entertainment
- Free cooking and dance classes
- Free unlimited Wi-Fi

$3080
per person

CRUISE Tour

7 NIGHTS PACKAGE

- Cruise to Australia and New Zealand
- Cruise cabins with ocean view
- Best cuisines for food lovers
- Endless engaging entertainment
- 24 hour gym facility
- Free unlimited Wi-Fi

$3080
per person

Math Alive!

Thinking Aloud

Mark needs 15 mini rolls for a party.
Which bakery should he buy from?
How many packets does Mark need to buy?

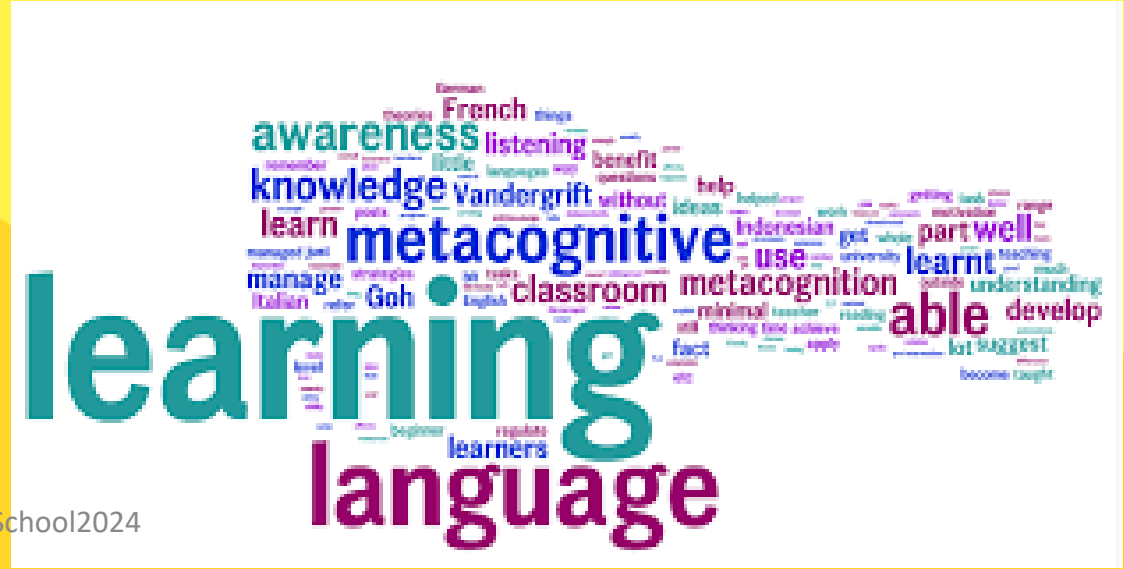
Workshop Content

1)Introduction to Metacognition in Problem Solving using STAR approach

2)Heuristics of Problem Solving

3)KooBits

4)Q & A

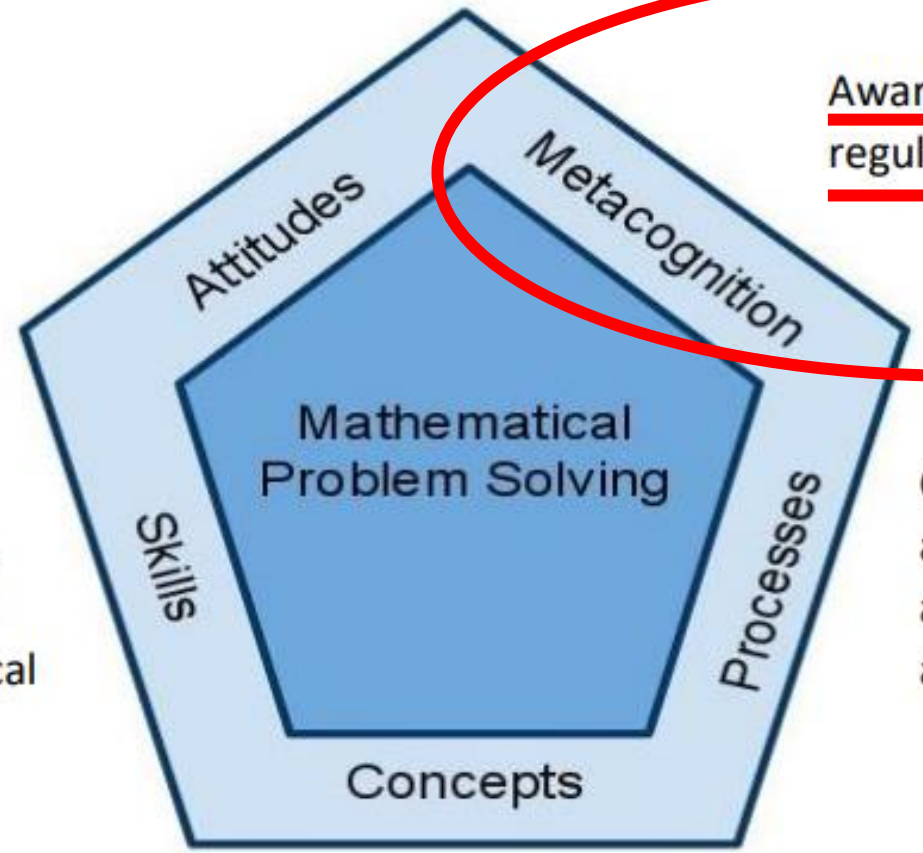


Singapore Mathematics Framework

Mathematics Curriculum Framework

Belief, appreciation, confidence, motivation, interest and perseverance

Awareness, monitoring and regulation of thought processes



Proficiency in carrying out operations and algorithms, visualising space, handling data and using mathematical tools

Competencies in abstracting and reasoning, representing and communicating, applying and modelling

Understanding of the properties and relationships, operations and algorithms

Metacognition

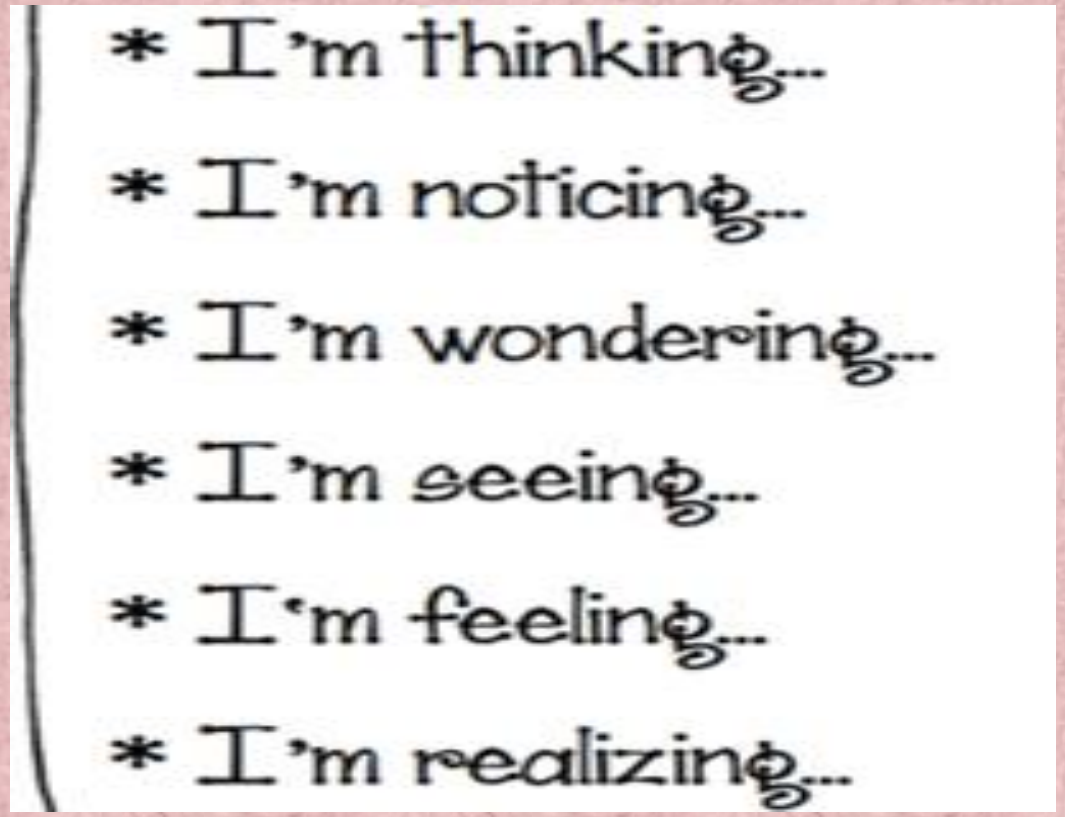
Definition

Think about one's ***own*** thinking

– To be critically ***aware*** of one's thinking and learning.

Process

- ***Monitor*** one's own thinking and one's existing state of knowledge
- ***Self-regulate*** one's learning through goal setting, self-monitoring and self instruction



How to develop metacognitive awareness

- Exposure to general problem solving skills
- Thinking aloud using the strategies and methods taught
- Attempting problems that require planning and evaluation
- Seeking alternative ways to solve a problem
- Checking reasonableness of answers

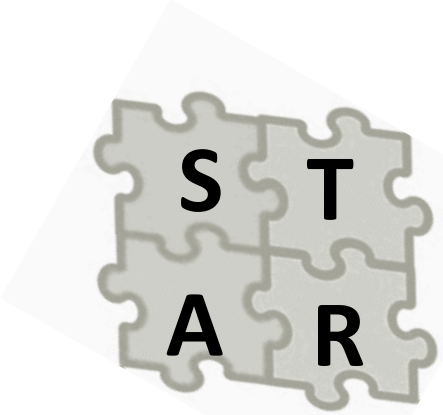
Metacognition @ JYPS

JUNYUAN PRIMARY SCHOOL
MATHEMATICS

STAR

***S**EE ~ **T**HINK ~ **A**CT ~ **R**ELOOK*

P4



NAME : _____

CLASS : P4 - _____

S - See (What is given?)

T -Think (What is my plan?)

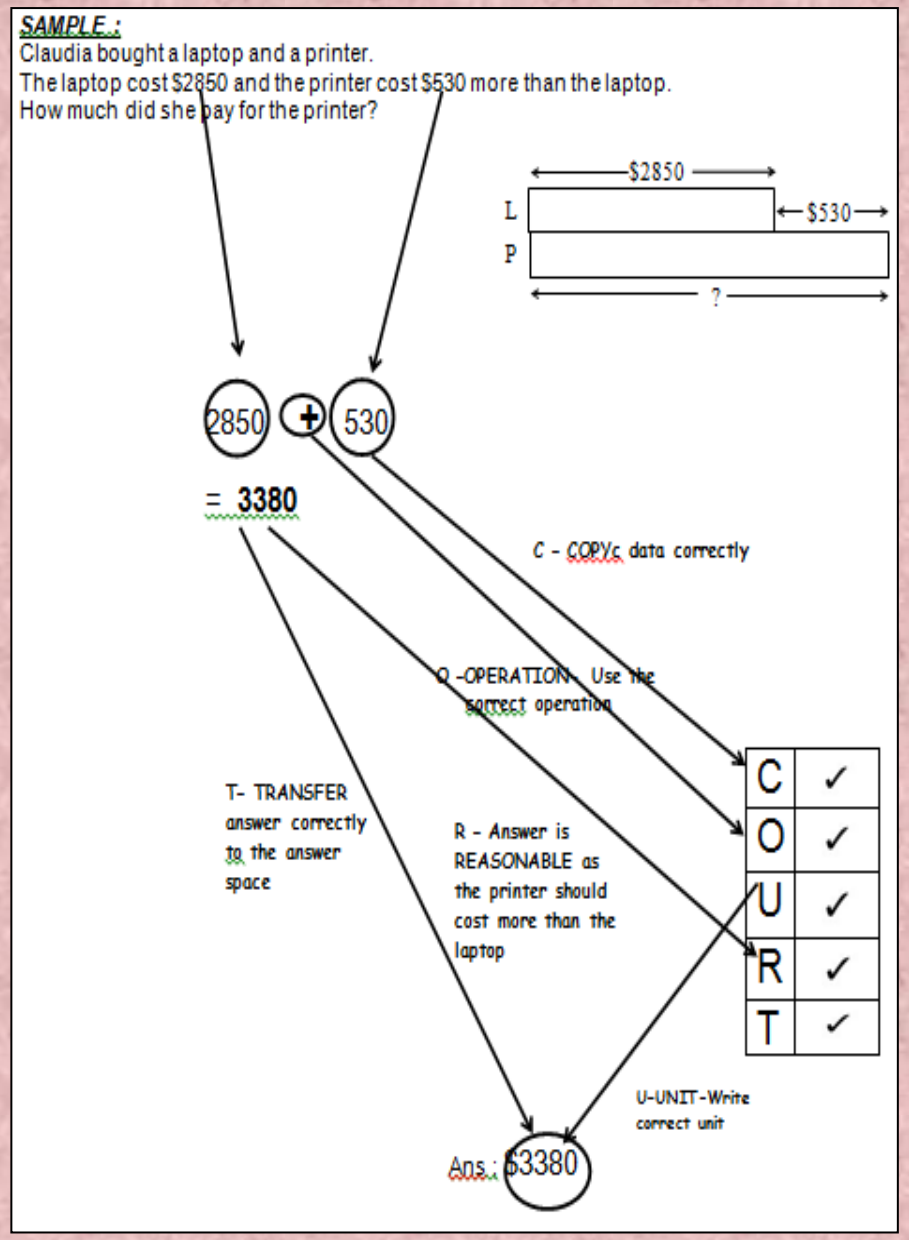
Can I use Model Drawing?
Can I look for a pattern?
Can I work backwards?
Can I use Guess and Check?
Other heuristic(s) I can use: _____

A - Act(What do I need to do?)

R - Relook(Reflect and Check)

CHECKING Strategy Using

C -O -U -R -T



C – *Copy data correctly*

O – *Operation sign*

U – *Unit of measurement*

R – *Reasonableness of answer*

T – *Transfer answer correctly*

C	
O	
U	
R	
T	

Heuristics Of Problem Solving

Model Drawing

1.Part-Whole Model

2.Comparison Model

3.Unitary Method

4.Stacking Model

5.Fraction of a Set

6.Before and After

Q1: Model Drawing (Part-Whole) – Find Total

Aaron has 452 cards. Benedict has 373 cards.
How many cards do they have altogether?

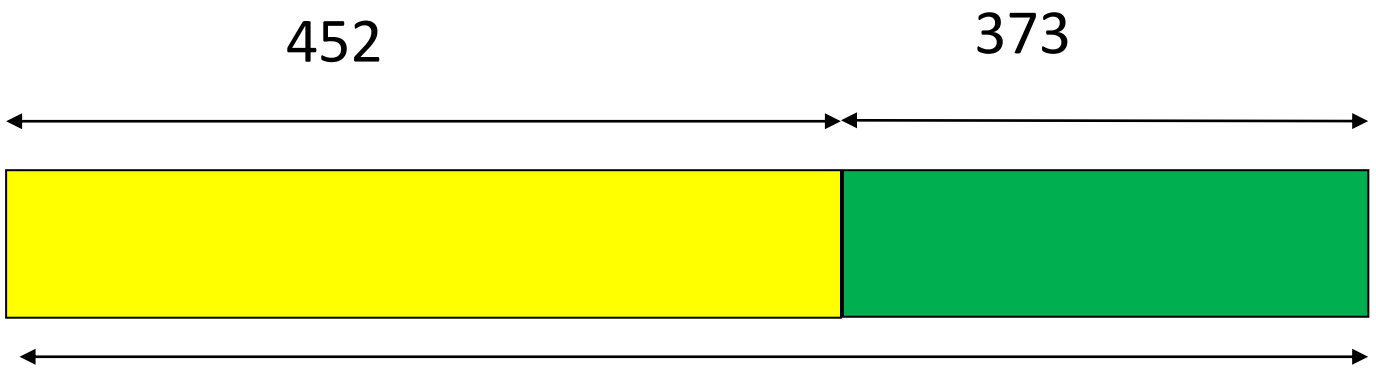
See (What is given?)
Aaron→452
Benedict → 373
Altogether?

Think (What is my plan?)
✓ Can I use Model Drawing?
Can I look for a pattern?
Can I work backwards?
Can I use Guess and Check?
Other heuristic(s) I can use:

_____

Q1: Model Drawing (Part-Whole) – Find Total

Act (What do I need to do?)



Method

452 + 373 = 825

They have **825 cards** altogether.

Q1: Model Drawing (Part-Whole) – Find Total

Aaron has 452 cards. Benedict has 373 cards.
How many cards do they have altogether?

Act
Method
452 + 373 = 825

Relook (Reflect and Check)
$825 - 373 = $452 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Q2: Model Drawing (Part-Whole) – Find Part

Rachel and Sally have 263 hair clips altogether.
Sally has 91 hair clips.
How many hair clips does Rachel have?

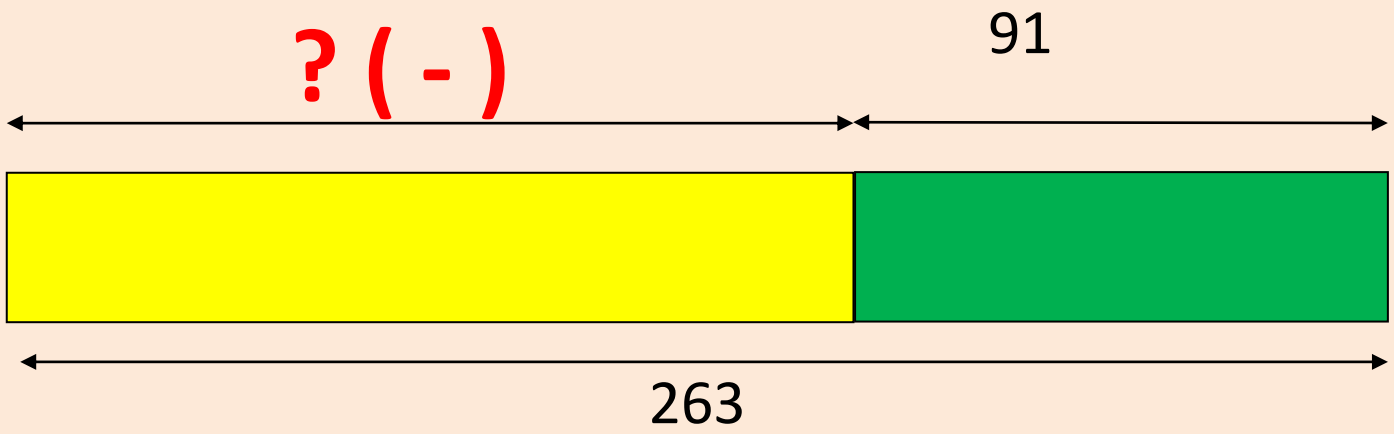
See (What is given?)
Rachel & Sally → 263
Sally → 91
Rachel ?

Think (What is my plan?)
✓ Can I use Model Drawing?
Can I look for a pattern?
Can I work backwards?
Can I use Guess and Check?
Other heuristic(s) I can use:

_____

Q2: Model Drawing (Part-Whole) – Find Part

Act (What do I need to do?)



Method

263 – 91 = 172

Rachel has **172 paper clips.**

Q2: Model Drawing (Part-Whole) – Find Part

Rachel and Sally have 263 hair clips altogether.
Sally has 91 hair clips.
How many hair clips does Rachel have?

Act

Method

263 – 91 = 172

C	✓
O	✓
U	✓
R	✓
T	✓

Relook (Reflect and Check)

172 + 91= 263 ✓ok

Q3: Model Drawing (Comparison with 2 variables) – Finding Difference

Hotel Pan Pacific Singapore charges $330 per night. Hotel Amara Singapore charges $198 per night. How much will Mr Ong save if he decides to stay in Amara Singapore instead of Pan Pacific Singapore for three nights?

See (What is given?)
Pan Pacific → $330
Amara → $198
Save?

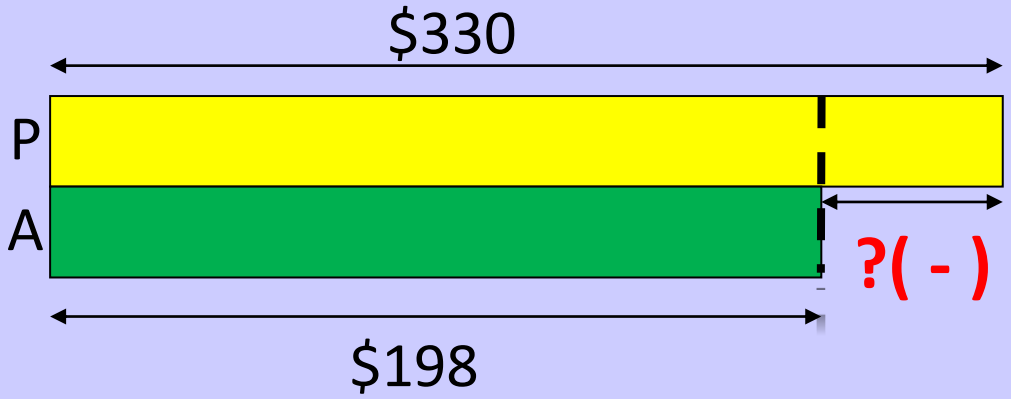
Think (What is my plan?)
✓ Can I use Model Drawing?
Can I look for a pattern?
Can I work backwards?
Can I use Guess and Check?
Other heuristic(s) I can use:

_____

Q3: Model Drawing (Comparison with 2 variables) – Finding Difference

See (What is given?)
Pan Pacific → $330
Amara → $198
Save?

Act (What do I need to do?)



Method
$330 - $198 = $132
$132 x 3 = **$396**

Mr Ong will save **$396**.

Q3: Model Drawing (Comparison with 2 variables) – Finding Difference

Hotel Pan Pacific Singapore charges $330 per night. Hotel Amara Singapore charges $198 per night. How much will Mr Ong save if he decides to stay in Amara Singapore instead of Pan Pacific Singapore for three nights?

Method

$330 - $198 = $132

$132 x 3 = **$396**

Relook (Reflect and Check)

$396 ÷ 3 = $132

$132 + $198 = $330 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Mr Ong will save **$396**.

Q4: Model Drawing
(Comparison with 2 variables – Unequal Distribution)

At a factory, Worker A and Worker B sorted 1886 plastic bottles altogether. Worker B sorted 988 more bottles than Worker A. How many bottles did Worker A sort?

See (What is given?)

A + B → 1886

B → 988 more than A

Qn: A?

Think (What is my plan?)

✓ Can I use Model Drawing?

Can I look for a pattern?

Can I work backwards?

Can I use Guess and Check?

Other heuristic(s) I can use:

_____

Q4: Model Drawing
(Comparison with 2 variables – Unequal Distribution)

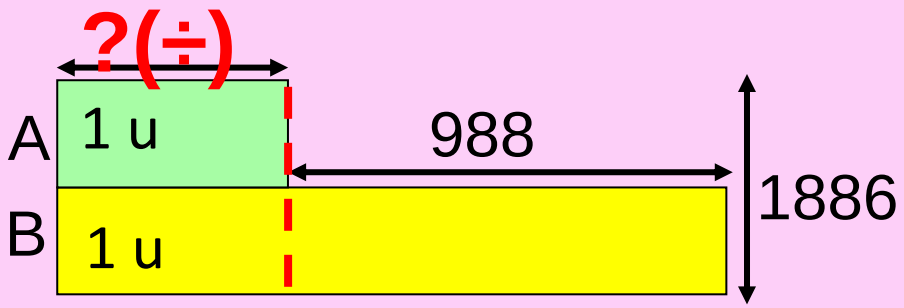
See (What is given?)

A + B → 1886

B → 988 more than A

Qn: A?

Act (What do I need to do?)



1886 - 988 = 898

2 u = 898

1 u = 898 ÷ 2

= **449**

Worker A sorted **449** bottles in the morning.

Q4: Model Drawing
(Comparison with 2 variables – Unequal Distribution)

At a factory, Worker A and Worker B sorted 1886 plastic bottles altogether. Worker B sorted 988 more bottles than Worker A. How many bottles did Worker A sort?

Act

1886 - 988 = 898

2 u = 898

1 u = 898 ÷ 2

= **449**

Relook (Reflect and Check)

1 u = **449**

2 u = 449 x 2 = 898

898 + 988 = 1886 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Worker A sorted **449** bottles in the morning.

Q5: Unitary Method (Find Total)

Alex ran 234 m. Roy jogged thrice the distance ran by Alex. What was the total distance run by both Alex and Roy?

See (What is given?)

Alex → 234 m

Roy → 3x the distance ran by Alex

Qn: Total distance ran?

Think (What is my plan?)

✓ Can I use Model Drawing?

Can I look for a pattern?

Can I work backwards?

Can I use Guess and Check?

Other heuristic(s) I can use:

_____

Q5: Unitary Method (Find Total)

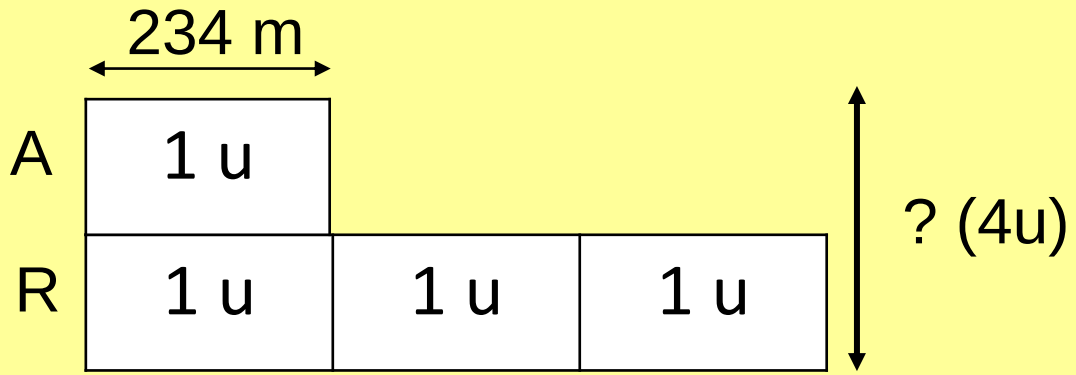
See (What is given?)

Alex → 234 m

Roy → 3x the distance ran by Alex

Qn: Total distance ran?

Act (What do I need to do?)



Method 1

1 u = 234 m

3 u = 3 x 234 m

= 702 m

234 m + 702 m = 936 m

Method 2

1 u = 234 m

4 u = 4 x 234 m

= 936 m

They ran **936 m** altogether.

Q5: Unitary Method (Find Total)

Alex ran 234 m. Roy jogged thrice the distance ran by Alex. What is the total distance ran by both Alex and Roy?

Act

Method 2

1 u = 234 m

4 u = 4 x 234 m

= 936 m

Relook (Reflect and Check)

4 u = 936

Alex -> 1 u = 936 ÷ 4

= 234 ✓ok

They ran **936 m** altogether.

C	✓
O	✓
U	✓
R	✓
T	✓

Q6: Unitary Method

A bookshop sold 212 pencils and pens in a day. The number of pens sold was thrice the number of pencils sold. How many pencils were sold ?

See (What is given?)

Pencils and Pens → 212

Pens → 3x as many as Pencils

Qn: ? Pencils were sold

Think (What is my plan?)

✓ Can I use Model Drawing?

Can I look for a pattern?

Can I work backwards?

Can I use Guess and Check?

Other heuristic(s) I can use:

_____

Q6: Unitary Method

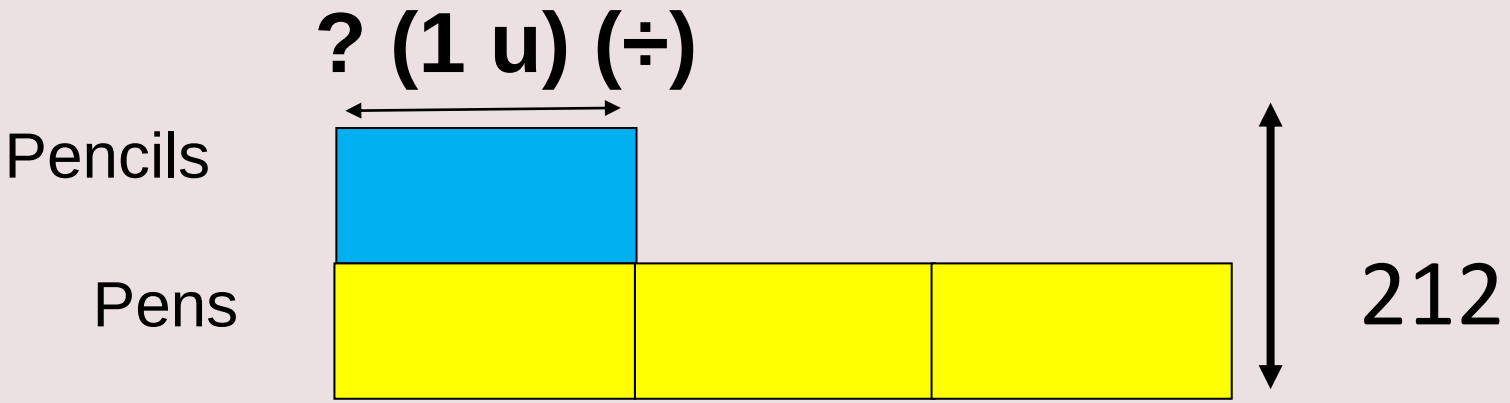
See (What is given?)

pencils and pens → 212

pens → 3x as many as pencils

Qn: ? Pencils were sold

Act (What do I need to do?)



Method

4 u = 212

1 u = 212 ÷ 4

= **53**

53 pencils were sold.

Q6: Unitary Method

A bookshop sold 212 pencils and pens in a day. The number of pens sold was thrice the number of pencils sold. How many pencils were sold ?

Act

Method

4 u = 212

1 u = 212 ÷ 4

= **53**

Relook (Reflect and Check)

1 u = **53**

4 u = 4 x 53

= 212 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

53 pencils were sold.

Q7: Model Drawing (Stacking Model)

A pair of shoes and 3 bags cost $60.The pair of shoes cost twice as much as the bag. Find the cost of the pair of shoes.

See (What is given?)

1S + 3B → $60

1S → 1B x 2

Qn: 1S ?

Think (What is my plan?)

Can I use Part-Whole Model Drawing?

Can I use Comparison Model Drawing?

Can I use Stacking method? ✓

Can I act it out?

Can I use Guess and Check?

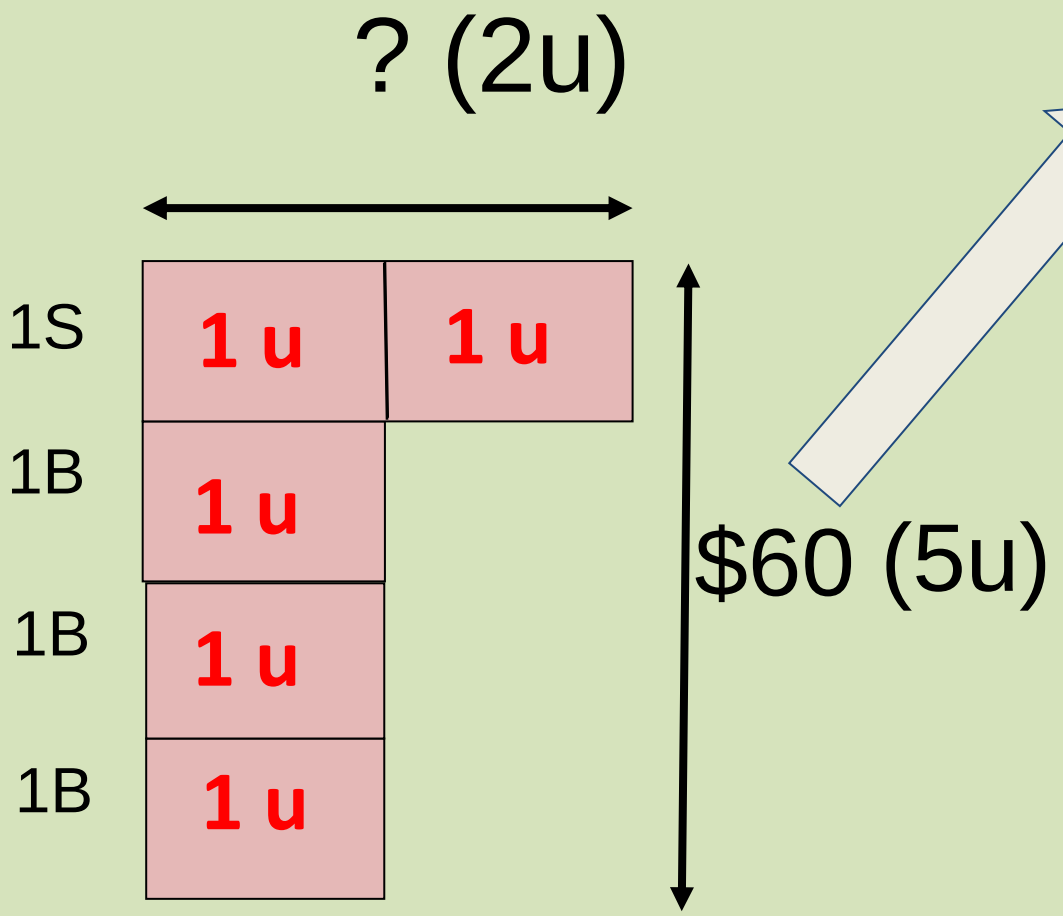
Can I use Working Backwards?

Other heuristic(s) I can use:

_____

Q7: Model Drawing (Stacking Model)

A pair of shoes and 3 bags cost $60.The pair of shoes cost twice as much as the bag. Find the cost of the pair of shoes.



Act (What do I need to do?)

MATCH

5u = $60

1u = $60 ÷ 5 = $12 (BAG)

2u = $12 x 2 = $24 (SHOE)

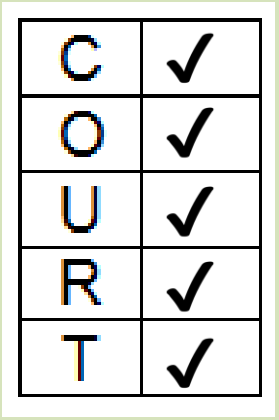
The pair of shoes cost **$24**.

Q7: Model Drawing (Stacking Model)

Relook (Reflect and Check)

$24 + $12 + $12 + $12 = $60

✓ok



Q8: Model Drawing (Stacking Model)

Mr Koh paid $1145 for a dining table and 4 chairs.
The table cost $270 more than each chair.
What was the cost of each chair?

See (What is given?)

1T + 4C → $1145

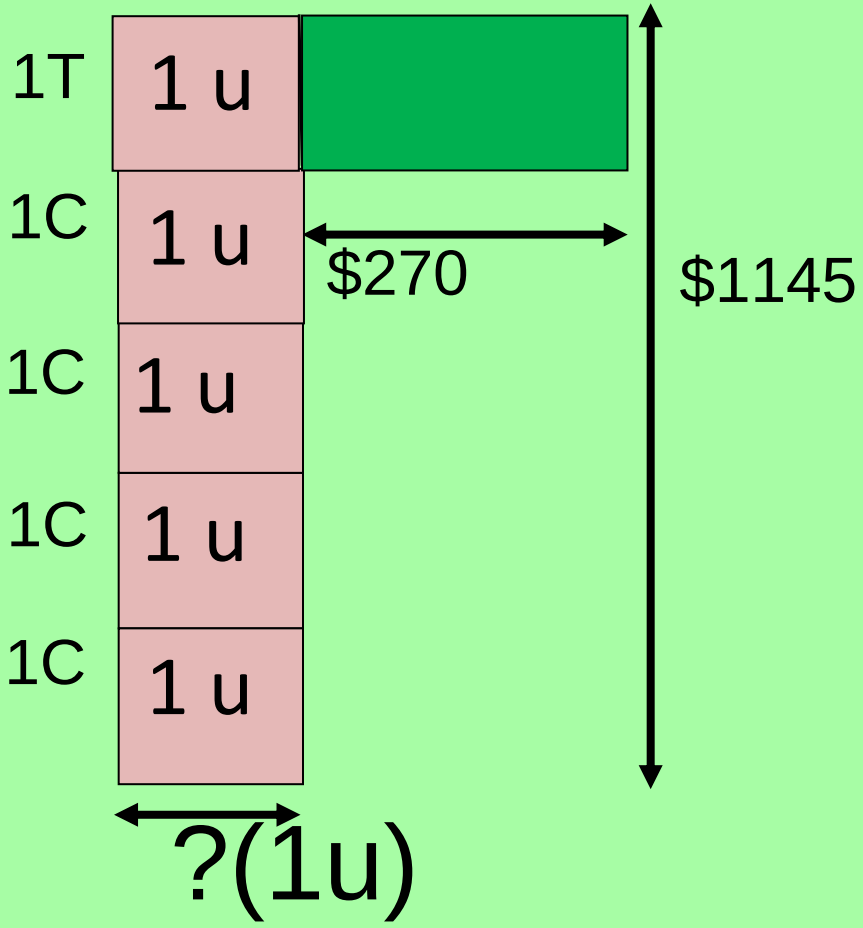
1T → 1C + $270

Qn: 1C ?

Think (What is my plan?)

- Can I use Part-Whole Model Drawing?
- Can I use Comparison Model Drawing?
- Can I use Stacking method? ✓
- Can I act it out?
- Can I use Guess and Check?
- Can I use Working Backwards?
- Other heuristic(s) I can use:

Q8: Model Drawing (Stacking Model)



Act (What do I need to do?

$1145 – $270 = $875

MATCH

5u = $875

1u = $875 ÷ 5 = $175

A chair cost **$175**.

Q8: Model Drawing (Stacking Model)

Relook (Reflect and Check)

Table → $175 + $270
= $445

4 chairs → 4 x $175
= $700

Total cost → $445 + $700
= $1145 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Q9: Model Drawing (Fraction of a Set)

Annie baked 252 cookies. $\frac{4}{7}$ of the cookies were chocolate cookies and the rest were butter cookies. How many butter cookies did she bake?

See (What is given?)

Total → 252 cookies

Chocolate → $\frac{4}{7}$ of the cookies

Rest → Butter cookies

Qn: Number of butter cookies?

Think (What is my plan?)

Model drawing ✓

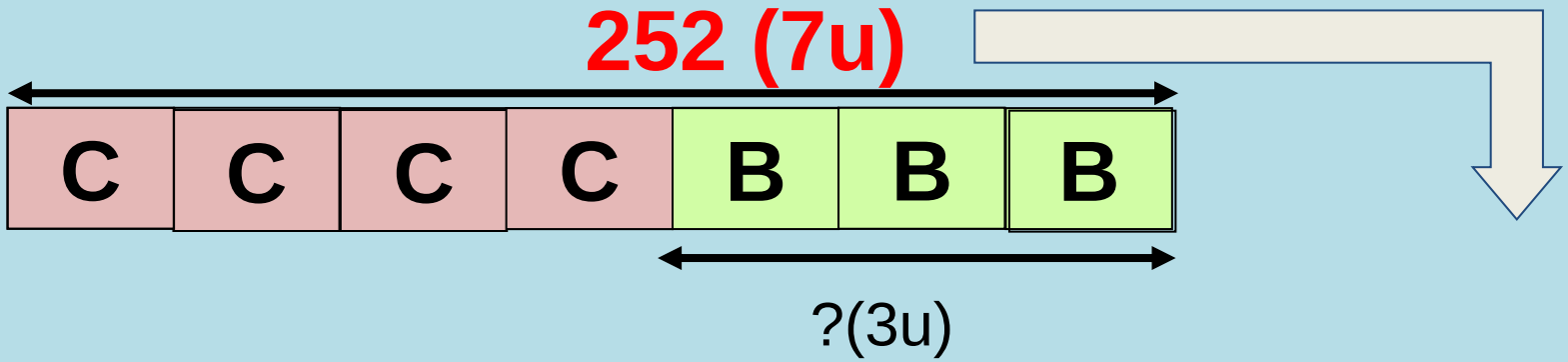
Working backwards

Restate the problem

Stacking Method

Q9: Model Drawing (Fraction of a Set)

Act (What do I need to do?)



MATCH

7u = 252

1u = 252 ÷ 7 = 36

3u = 36 x 3 = **108**

She baked **108** butter cookies.

Q9: Model Drawing (Fraction of a Set)

Relook (Reflect and Check)

108 ÷ 3 = 36

36 x 7 = 252

✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Q10: Model Drawing (Fraction of a Set)

Mrs Liz had a birthday party. $\frac{3}{5}$ of the children were girls. There were 36 boys at the party. How many children were there altogether?

See (What is given?)

Girls → $\frac{3}{5}$ of the children

Boys → 36

Qn: total number of children ?

Think (What is my plan?)

Model drawing ✓

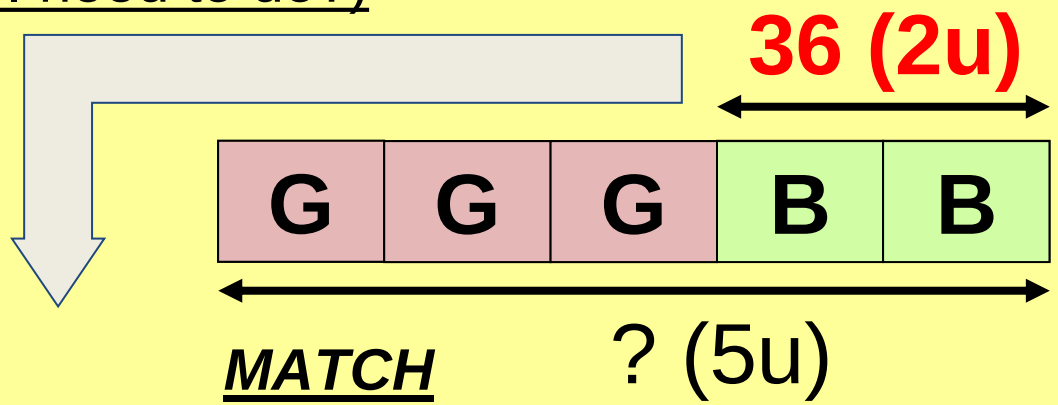
Working backwards

Restate the problem

Stacking Method

Q10: Model Drawing (Fraction of a Set)

Act (What do I need to do?)



MATCH

2 u = 36

1 u = 36 ÷ 2 = 18

5 u = 18 x 5 = **90**

There were **90** children altogether.

Q10: Model Drawing (Fraction of a Set)

Relook (Reflect and Check)

90 ÷ 5 = 18

18 x 2 = 36

✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Q11: Model Drawing (Fraction of a Set)

There are men and women in a room, $\frac{7}{8}$ of the people were men.

There were 72 more men than women. How many people were there in the room altogether?

See (What is given?)

M → $\frac{7}{8}$ of the people

M – W = 72

Qn: total number of children ?

Think (What is my plan?)

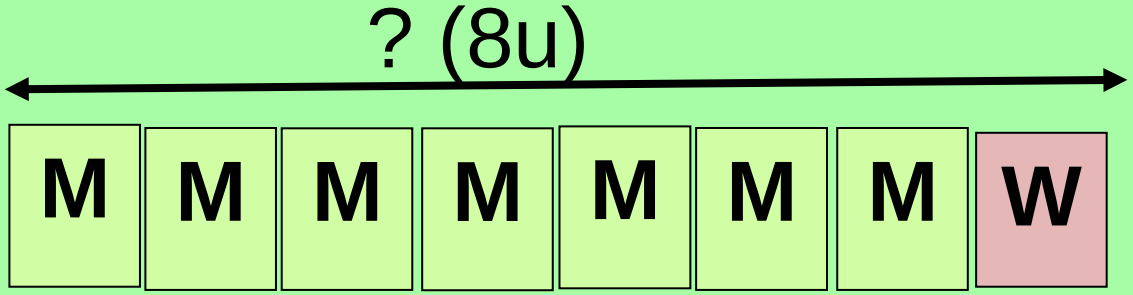
Model drawing ✓

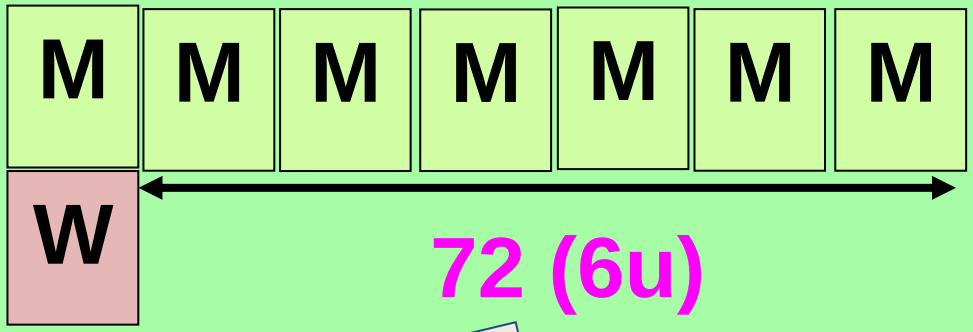
Working backwards

Restate the problem

Stacking Method

Q11: Model Drawing (Fraction of a Set)





Act (What do I need to do?)

6 u = 72

1 u = 72 ÷ 6 = 12

8 u = 12 x 8 = **96**

There were **96** people altogether.

Q11: Model Drawing (Fraction of a Set)

Relook (Reflect and Check)

M → 7 x 12 = 84

W → 12

M - W = 84 - 12 = 72 ✓ok

C	✓
O	✓
U	✓
R	✓
T	✓

Q12: Model Drawing (Before and After) – Make Equal

Samy has 250 erasers and Darryl has 64 erasers. How many erasers must Samy give to Darryl so that both have the same number of erasers?

See (What is given?)

S → 250

D → 64

S give ? to D so that S = D

Think (What is my plan?)

✓ Can I use Model Drawing?

Can I look for a pattern?

Can I work backwards?

Can I use Guess and Check?

Other heuristic(s) I can use:

_____

Q12: Model Drawing (Before and After) – Make Equal

See (What is given?)

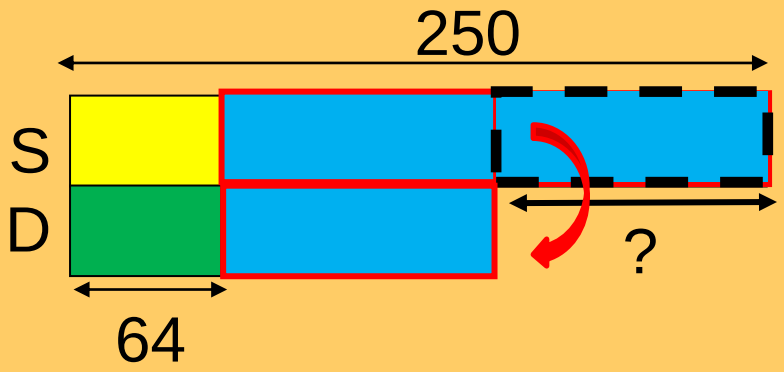
S → 250

D → 64

S give ? to D so that

S = D

Act (What do I need to do?)



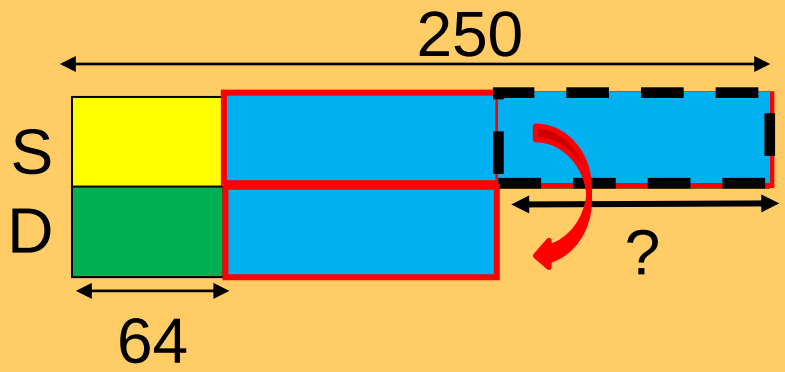
250 - 64 = 186

186 ÷ 2 = **93**

Samy must give Darryl **93** erasers.

Q12: Model Drawing (Before and After) – Make Equal

Samy has 250 erasers and Darryl has 64 erasers. How many erasers must Samy give to Darryl so that both have the same number of erasers?



Act

250 - 64 = 186

186 ÷ 2 = 93

Relook (Reflect and Check)

250 – **93** = 157

64 + **93** = 157 ✓ok

Samy must give Darryl **93** erasers.

C	✓
O	✓
U	✓
R	✓
T	✓

Q13: Model Drawing (Before and After) – Before Equal

Ariel had as many roses as Belle.
After Ariel gave 64 roses away, Belle had 5 times as many roses as Ariel.
How many roses did Ariel have at first?

See (What is given?)

Before : A = B

After A gave 64, B → 5 x A

Before : A ?

Think (What is my plan?)

✓ Can I use Model Drawing?

Can I look for a pattern?

Can I work backwards?

Can I use Guess and Check?

Other heuristic(s) I can use:

_____

Q13: Model Drawing (Before and After) – Before Equal

See (What is given?)

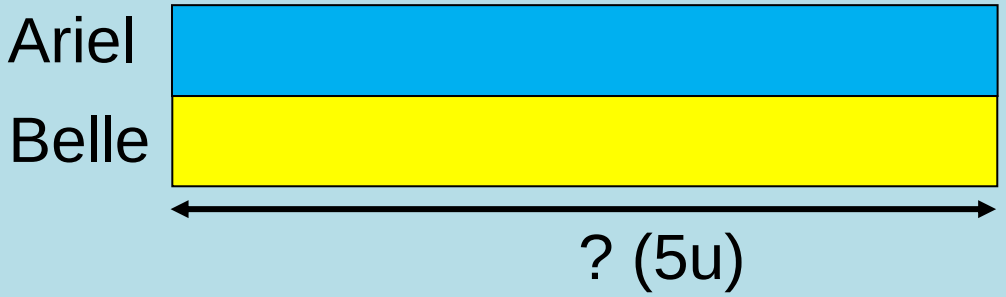
Before : A = B

After A gave 64, B → 5 x A

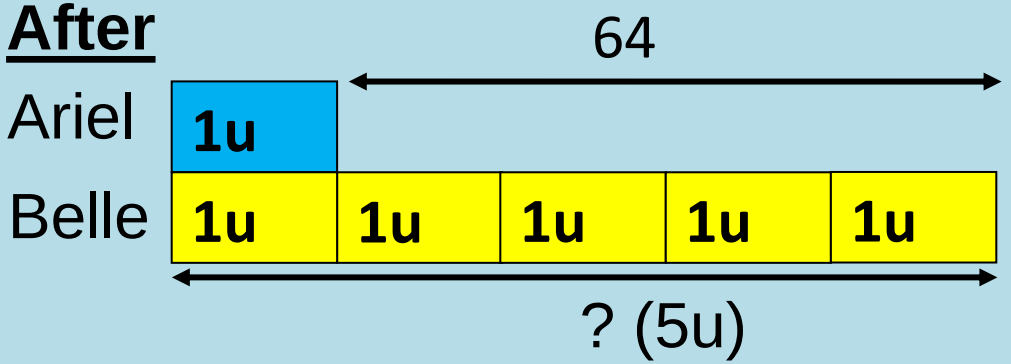
Before : A ?

Act (What do I need to do?)

Before



After



4 u = 64

1 u = 64 ÷ 4 = 16

5 u = 5 x 16 = 80

Ariel had **80** roses at first.

Q13 : Model Drawing (Before and After) – Before Equal

Ariel had as many roses as Belle.
After Ariel gave 64 roses away, Belle had 5 times as many roses as Ariel.
How many roses did Ariel have at first?

Act

4 u = 64

1 u = 64 ÷ 4 = 16

5 u = 5 x 16 = 80

Relook (Reflect and Check)

1 u = 80 ÷ 5 = 16

4 u = 16 x 4 = 64 ✓ok

Ariel had **80** roses at first.

C	✓
O	✓
U	✓
R	✓
T	✓

Welcome to

KooBits


KooBits
School
Math
Home
Report
Leaderboard
Friends
Help
Joewen Teo
Junyuan Primary School
0 XP
Lvl 1
Brain Games
Events
Story
Daily Challenge
10 personalized questions per day
Start
0
Total CPs
1000
KoKo Credits
Daily Bonus
Mission
Multiplayer
Assignment
Dr. Miko is asking you...
Switch to Teacher
Property Of Junyuan Primary School2024