

Stretching Your Child's Potential in Mathematics

Parents – our partner in Education

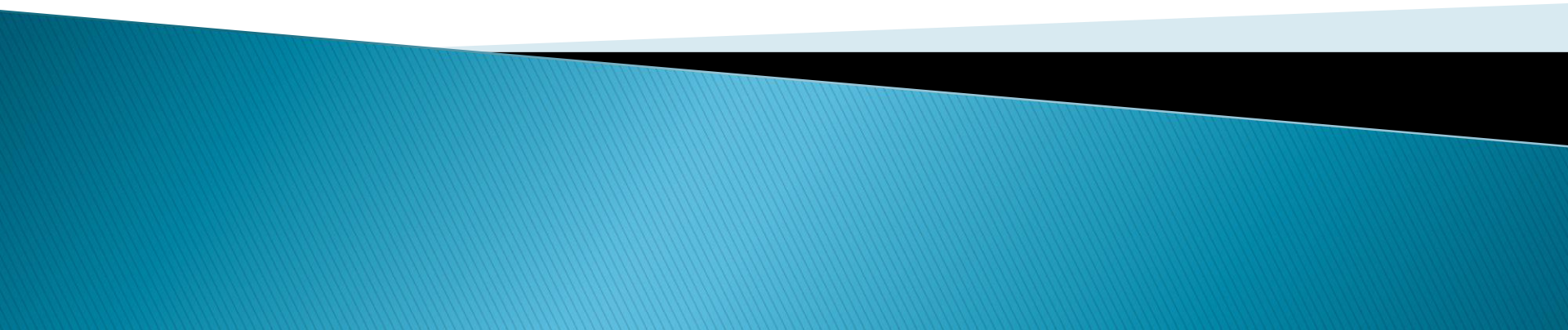
(Primary Three and Primary Four)

31st March 2017

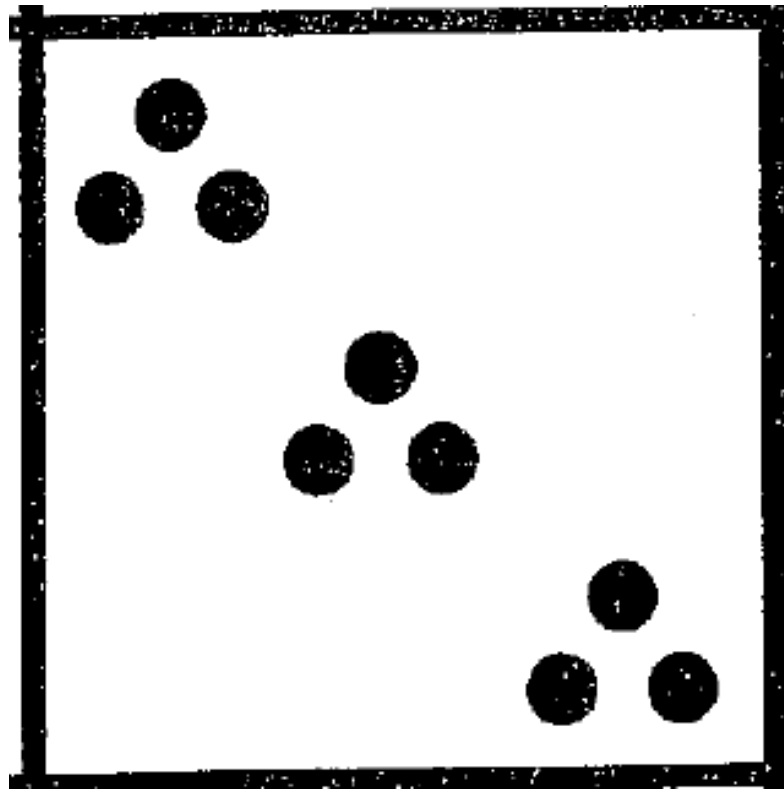
4pm – 5pm

Presented by Miss Chan Min Lie and Mrs Yvonne Sim

Agenda

- ✓ Energiser
 - ✓ Polya's 4 Steps (UPDC)
 - ✓ Exemplars
- 

How many dots are there?



How many dots are there?

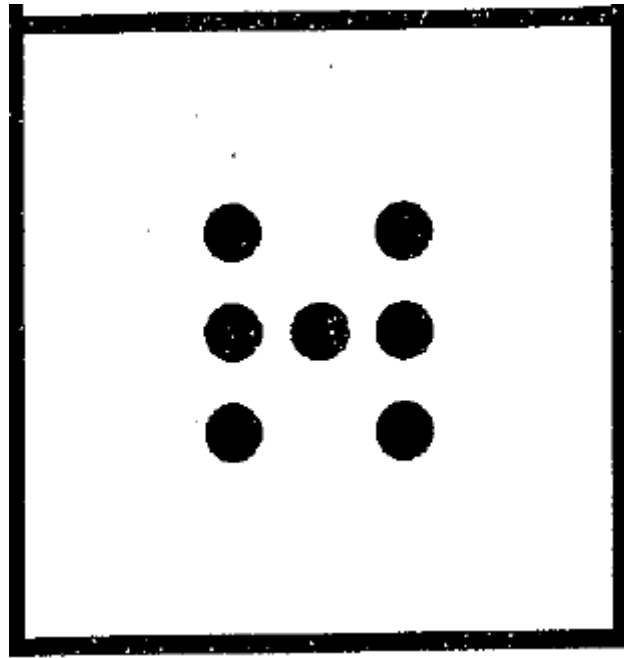
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How do you know?

Did you count them?



How many dots are there?



How many dots are there?

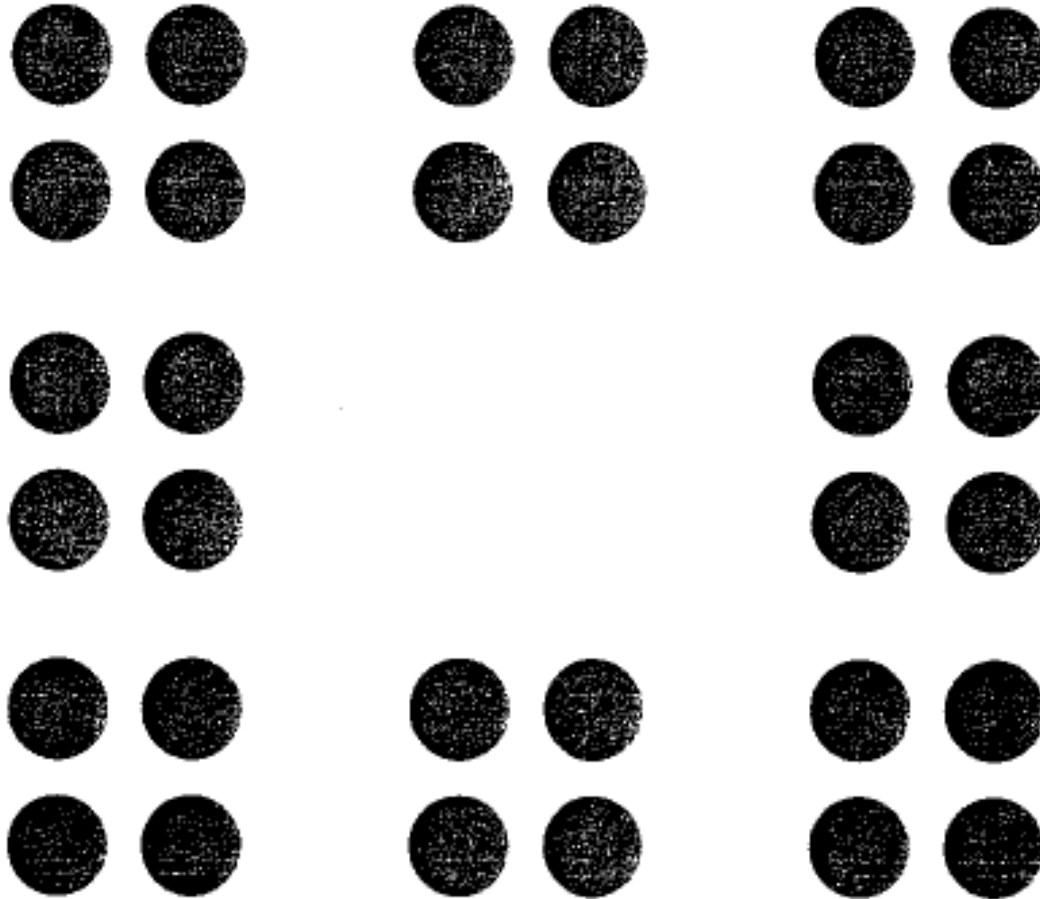
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How do you know?

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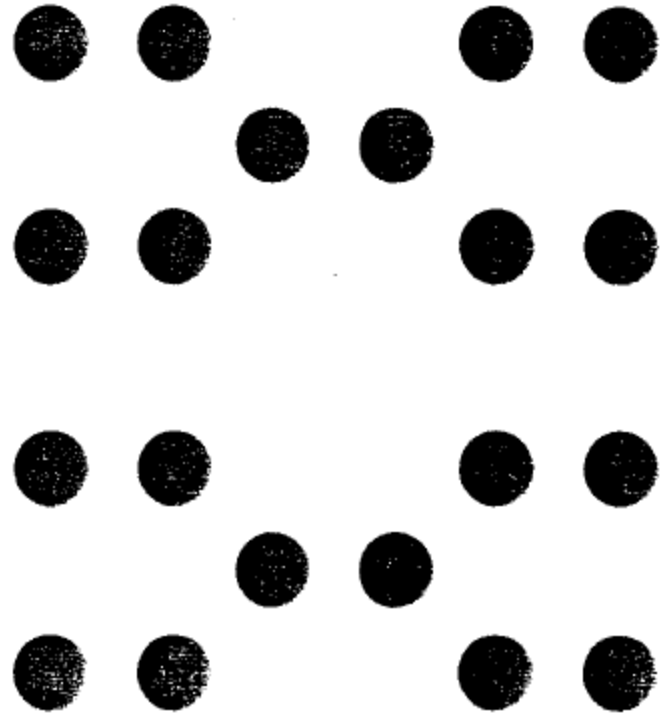
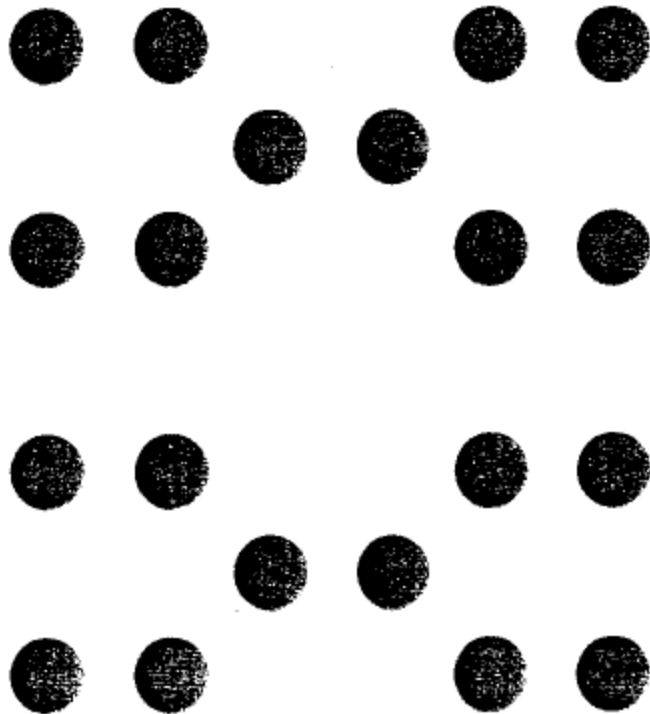
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How do you know?

Did you count them?



How many dots are there?



How many dots are there?

40

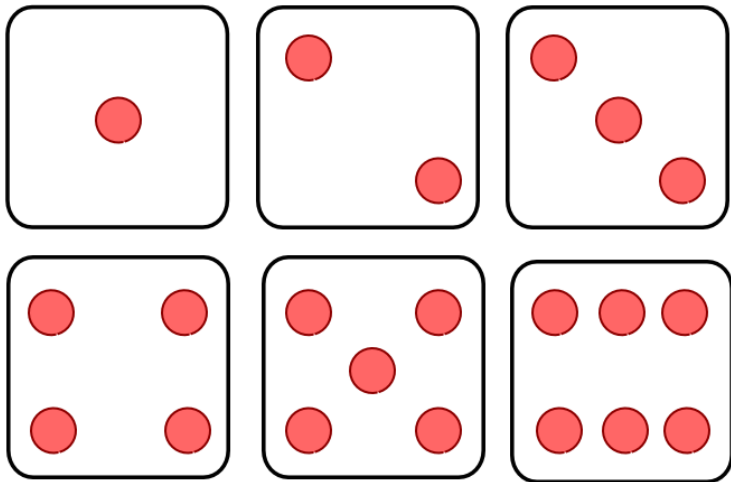
How do you know?

Did you count them?

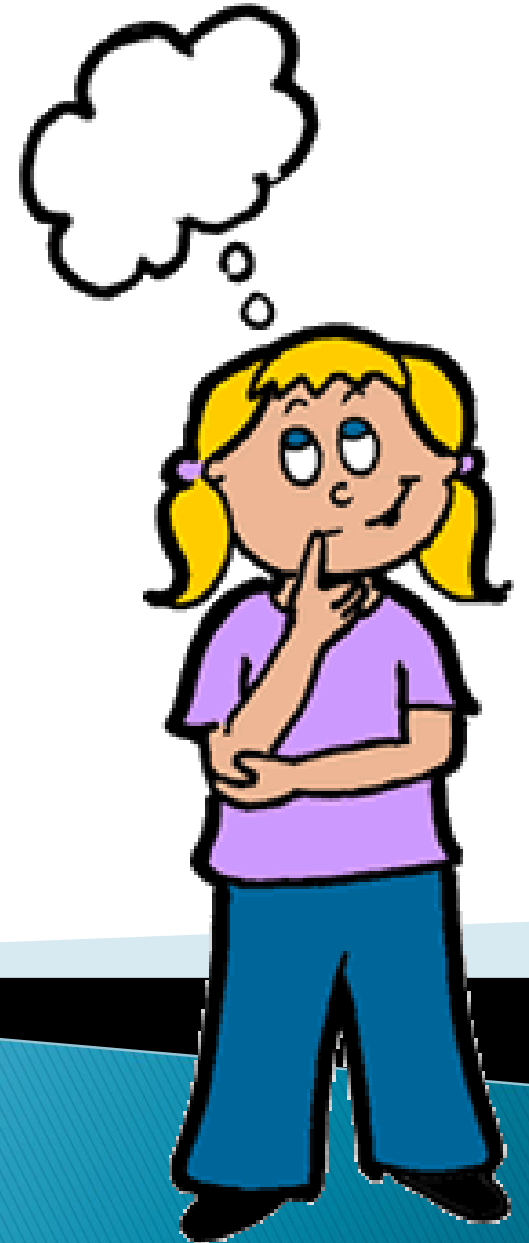


Subitizing

- Instantly seeing how many
- Ability to look at a number pattern and instantly recognize that number without counting
- Development pre-requisite to counting.
- Focuses on both on the whole and the unit.



Polya's 4 Steps



Polya's 4-steps : What?

4-step process that provides a structure (systematic steps to take) for solving word problems

1. Understanding the problem
2. Devising a plan
3. Carrying out the plan
4. Looking back

It is NOT a strategy!



Step One:

U nderstand the Problem

- State the problem in my own words.
- What information do I have?
- What are the unknowns?
- What am I trying to find or do?
- How is this problem similar to or different from other problems I have solved?

Step Three:

D o the Plan

- Carry out all the steps planned.
- Perform the necessary Math computations.



George Polya's
4 -Steps to
Problem
Solving
(UPDC)

Step Two:

P lan

- Which strategy should I use?
 - Write equations
 - Look for a pattern
 - Systematic listing
 - Make a table
 - Draw a diagram
 - Guess and check
- How many steps are involved?
- Which operation or operations should I use?
- Are there other ways to solve this problem?

Step Four:

C heck

- Check each step.
- Check calculations by working backwards or using another method.
- Does my answer make sense?
- Is my answer reasonable?
- Did I use the correct units?

Step One: Understand (the Problem)

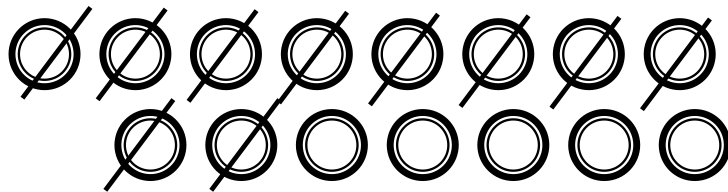
- ▶ Read the question
- ▶ Circle/underline/highlight numbers, key words and information
- ▶ Draw Pictures / Act it Out

Example:

Peter has 8 red caps and 7 blue caps.

He gave 10 caps to his friend.

How many caps does he have left?



Step Two: Plan

- ▶ Which operation(s) should I use?
+, −, ×, ÷
- ▶ In which order?

Example:

Peter has 8 red caps and 7 blue caps.

He gave 10 caps to his friend.

How many caps does he have left?

Use addition + first
then subtraction −

Step Three: Do

- ▶ Carry out the step/s
- ▶ Write the equations and number statements clearly

Example:

Peter has 8 red caps and 7 blue caps.

He gave 10 caps to his friend.

How many caps does he have left?

$$8 + 7 = 15$$

$$15 - 10 = 5$$

He has 5 caps left.

Step Four: Check

- ▶ Cover answer and do again
- ▶ Check the working
(using alternative method, working backwards)

Example:

Peter has 8 red caps and 7 blue caps.

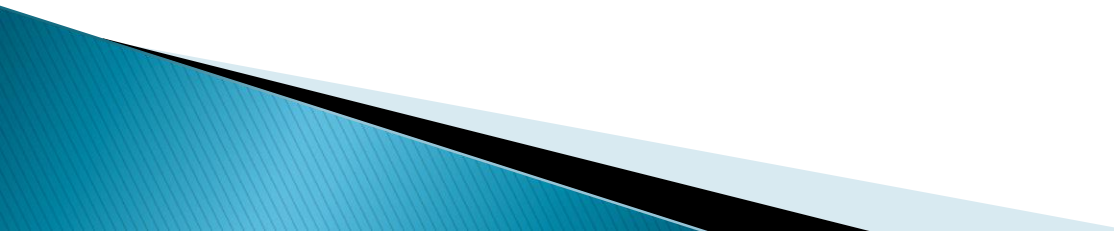
He gave 10 caps to his friend.

How many caps does he have left?

Check: $5 + 10 = 15$

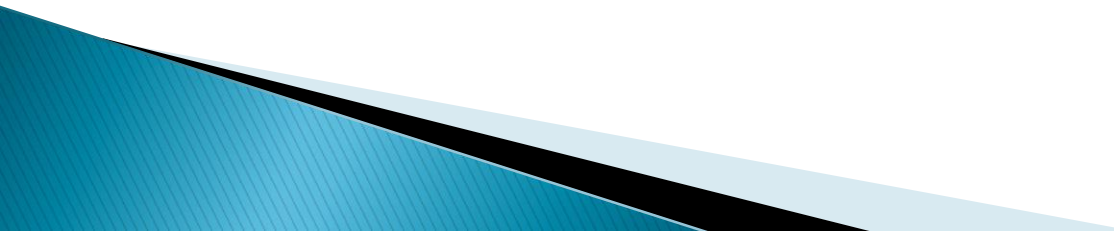
Polya's 4-steps : Why?

For Pupils...

- ▶ Acquire cognitive and metacognitive skills
 - ▶ Get feedback on thinking process
 - ▶ Provide a structure (systematic steps to take) for solving word problems
 - ▶ Breaking down information to make word problems less intimidating
 - ▶ Build confidence in solving word problems
- 

Polya's 4-steps : Why?

For Teachers and Parents...

- ▶ To find out what pupils have learnt and not learnt
 - ▶ To find out pupils' rationale for doing something
 - ▶ To learn about any misconception that pupils may have
 - ▶ To know what is the next step to take
- 

Let's Try...

Exemplar 1

Alicia ate $\frac{1}{4}$ of a cake. Her brother ate $\frac{3}{8}$ of the same cake. What fraction of the cake did they eat altogether?

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Understand

Do

Plan

Check

Exemplar 2

Mrs Ong had a tray of eggs. The number of eggs she used to bake some cupcakes was $\frac{2}{3}$ as many as the number of eggs she used to bake some muffins. If she used 6 eggs to bake the cupcakes, how many eggs did she use in total?

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Understand

Do

Plan

Check

Exemplar 3

Candice had $\frac{3}{5}$ as many beads as Denise. If Candice received 13 beads from Denise, the 2 girls would have the same number of beads. How many beads did Candice have?

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Understand

Do

Plan

Check

Please provide us with your feedback
via the following QR Code.



Thank You

