

A circular wreath of various botanical illustrations surrounds a central white circle. The plants include green ferns, red maple leaves, yellow marigolds, purple cornflowers, and green bell-shaped flowers. The background is a solid light blue.

P6 Mathematics Curriculum Briefing

5 Jan 2023

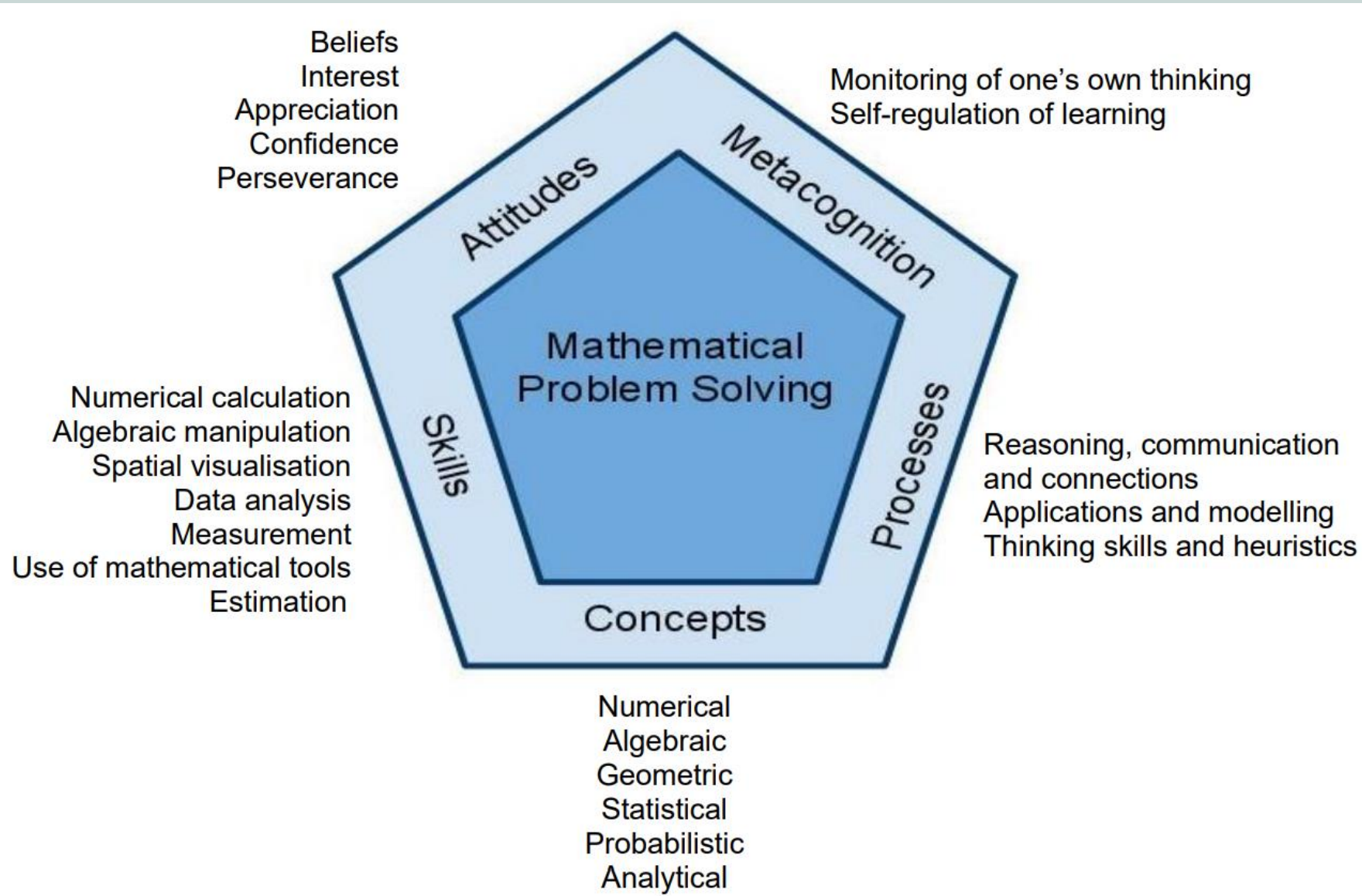


Mission

To develop our pupils with mathematical concepts and skills for everyday life and to equip them with process skills to solve mathematical problems.



Mathematics Curriculum Framework



Primary Mathematics Curriculum

- The Primary Mathematics Syllabus aims to enable all students to:
 - acquire mathematical concepts and skills for everyday use
 - develop thinking, reasoning, communication, application, and metacognitive skills through a mathematical approach to problem solving
 - and build confidence and foster interest in Mathematics

Math teachers:

6AB – Ms Yan Ying Ling

6C – Mrs Eliza Tang

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6AD – Ms Khoo Kim Kim

6E – Ms Khoo Kim Kim

6F – Ms Lee Suan Khim

6G – Mdm Ee Bee Yian

6HI – Mrs Eliza Tang

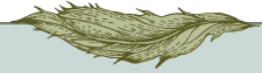
6EI – Ms Yan Ying Ling

Topics in P6



- 1) Fraction
- 2) Ratio
- 3) Percentage
- 4) Circles
- 5) Geometry
- 6) Pie Chart
- 7) Speed
- 8) Algebra
- 9) Volume
- 10) Solid figures and Nets

P6 Topics (Term 1)



Fraction:

- 4 operations with fractions
- Dividing a fraction by a proper fraction
- Solving word problems involving fractions

Ratio:

- Write the ratio of one quantity to another quantity in terms of (i) the actual number and (ii) the number of groups
- Express one quantity as a fraction of another quantity given their ratio and vice versa
- Find out how many times one value is as large as another given their ratio and vice versa
- Compare ratios
- Solve word problems involving ratio

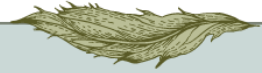
P6 Topics (Term 1)



Percentage:

- Express a decimal or fraction as a percentage and vice versa
- Find the whole given a part and the percentage
- Find a part given the whole and the percentage of the other part
- Solving word problems involving percentage.

P6 Topics (Term 1 & 2)



Circles

- identify the radius, diameter and circumference of a circle
- state the relationship between
 - (i) the radius and the diameter
 - (ii) the circumference and the diameter
- recognize a semicircle as half of a circle and a quadrant as a quarter of a circle
- State the relationship between the area of a circle and its radius
- Find the area of a circle
- Calculate the areas of figures made up of circles, semicircles and quadrants
- Find the area and perimeter of figures related to squares, rectangles, triangles and circles.
- Area and perimeter of composite figure

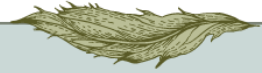
P6 Topics (Term 2)



Geometry:

- Revision topic
- Finding unknown angles in geometrical figures involving square, rectangle, parallelogram, rhombus, trapezium and triangle

P6 Topics (Term 2)



Pie Charts:

- Recognise a pie chart as another type of graph and that the whole circle represents 100% or 1 whole
- Reading and interpreting pie charts
- Solving problems using data from a pie chart

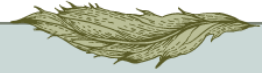
P6 Topics (Term 2 & 3)



Speed:

- Understand the concept of speed as the distance travelled per unit time. Know the relationship between distance, time and speed
- Use the unitary method or formula to calculate speed, distance or time
- Read, interpret and write speed in different units
- Understand the concept of average speed as the total distance travelled divided by the total time taken
- Calculation of speed, distance or time given the other two quantities
- Calculate average speed
- Solve word problems involving speed

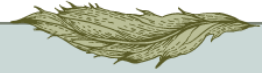
P6 Topics (Term 3)



Algebra:

- Recognise and write simple algebraic expressions in one variable
- Evaluate simple algebraic expressions by substitution
- Simplify algebraic expressions in one variable.
- Solve simple word problems involving algebraic expressions

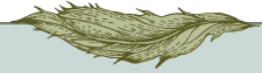
P6 Topics (Term 3)



Volume:

- Find dimension of a cuboid given the volume and two other dimensions or the volume and the area of one face
- Use the square root of a number to find the side of a square base of a cuboid given the volume of the cuboid and its height
- Use the cube root of a number to find the edge of a cube given its volume
- Find the height of the water level in a rectangular tank given the volume of water and the length and breadth of the tank or the area of the base of the tank
- Find the side of the square base of a rectangular tank given the volume of water and the height of the water level
- Find the edge of square base of a cubical tank given the volume of water in it

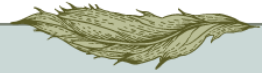
P6 Topics (Term 3)



Solid Figures and Nets:


- Identify, name and describe solids like cubes, cuboids, prisms, pyramids, cylinders and cones
- Identify the faces of a solid and name their shapes
- Identify the nets of a cube, a cuboid, a prism and a pyramid.
- Identify the solid formed by a given net

Teaching & Learning in class

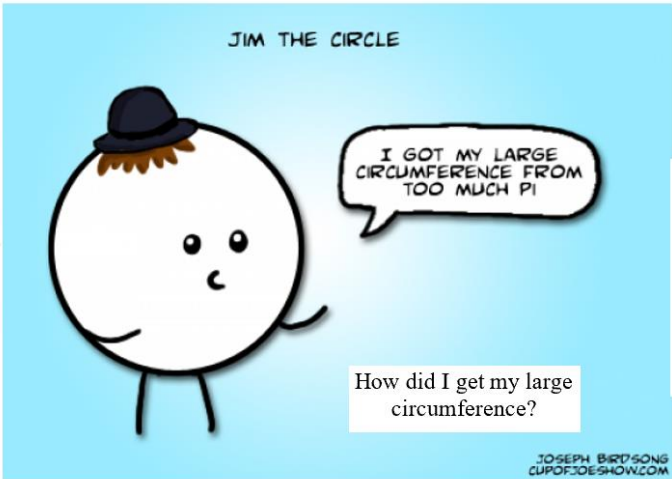
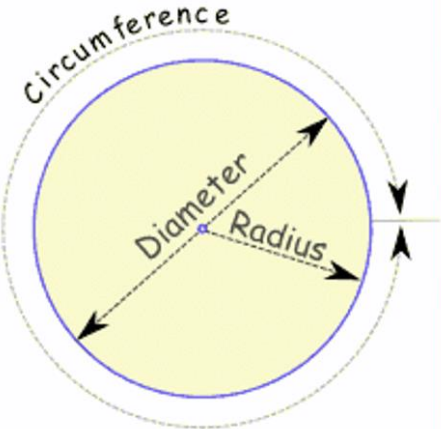


- 10 periods of Math per week
- Syllabus – Workbook worksheets, RGPS topical reviews, in-house problem-solving packages (Heuristics)
- Topical reviews – Checklist feedback for pupils and pupils' reflections.
- Teaching – Activity-based lessons, differentiated activities, experiential learning & ICT lessons to deepen teaching & learning.

Problem-solving packages




RAFFLES GIRLS' PRIMARY SCHOOL
MATHEMATICS
PRIMARY 6






Ans: From too much Pi

CIRCLES BOOKLET

S/N	Key Concept	
1	Circumference	
2	Area (Composite figures)	
3	Overlapping	
4	Cut-and-Paste	



RAFFLES GIRLS' PRIMARY SCHOOL
MATHEMATICS
PRIMARY 6



SPEED PROBLEM SUMS

S/N	Key Concept	
1	Average Speed	
2	Same Direction	
3	Opposite Direction	
4	Journey with Common Distance/Time	

Activity-based lessons: Thinking routines

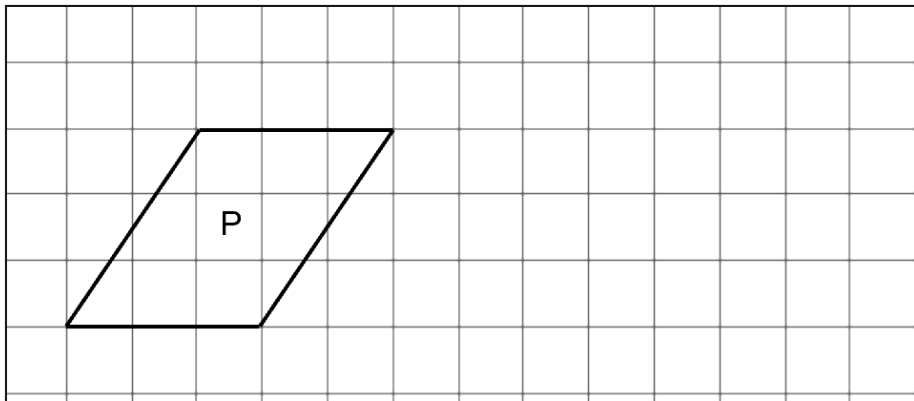
1. A parallelogram P is drawn in the square grid below. In the same way,

(a) draw a square with the same area of P. Label the square S.

(b) draw a trapezium with the same perimeter as P.

Label the trapezium T.

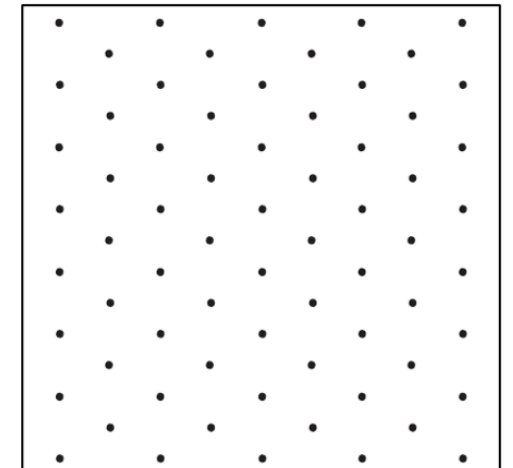
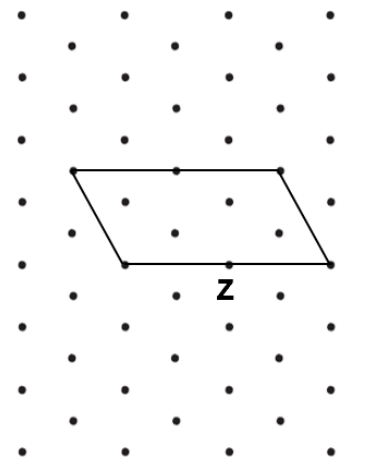
How can I re-arrange the horizontal and diagonal lines to form the required shape?



2. Draw an equilateral triangle with the same **area and perimeter** as Figure Z in the box.

Ask yourself...

- *What are the properties of the given shape?*
- *Can I form another shape with the same area?*
- *What is the relationship between area of figure Z and a triangle?*



Thinking aloud, building metacognition competencies

ICT enriched lessons

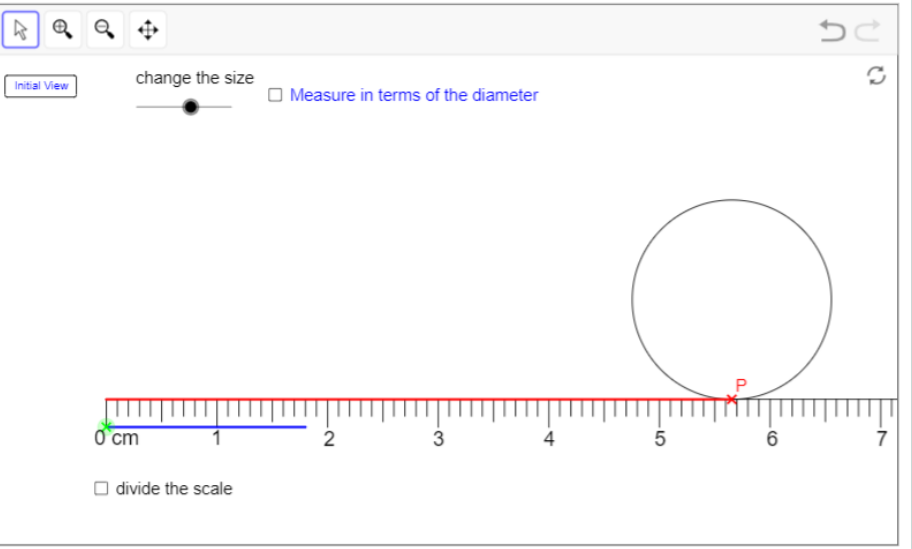
Finding circumference of Circles:

Circumference of Circles (New)

Drag the green point to appropriate position to measure the diameter of the circle. What is its diameter?

Drag the red point P to straighten the circumference. Divide the scale of the ruler to measure its length to **two decimal places**. Use the Zoom In, Zoom Out and Move tools if necessary.

Change the diameter of the circle to 2 cm, 3cm, or any other diameters. Calculate the value of:
circumference ÷ diameter.
What do you observe?



Using an applet to out the diameter and circumference of circles



Instructional videos

	A	B	C	D
1	Names:	Diameter	Circumference	Circumference ÷ Diameter
2	Sophia	1.3	4.1	3.15
3	Neffy			#DIV/0!
4	Grace	1.5	4.7	3.13
5	Melanie	1.4	4.4	3.14
6	Sasha	1.7	5.3	3.12
7	Erina	1.1	3.5	3.18
8	Irdina	2.6	8.2	3.15
9	Tian Yi	1.2	3.8	3.17
10	Arra	1	3.1	3.10
11	Abeerah	1.2	3.8	3.17
12	Anaya	1.7	5.3	3.12
13	Cheryl	1	3.1	3.10
14				

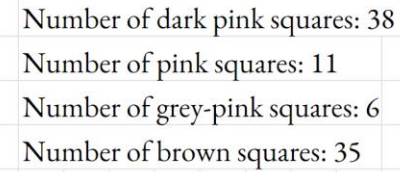
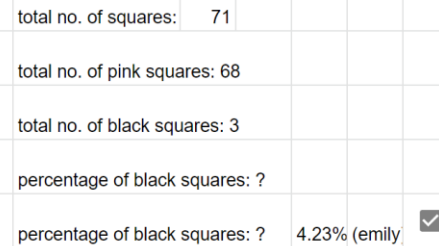
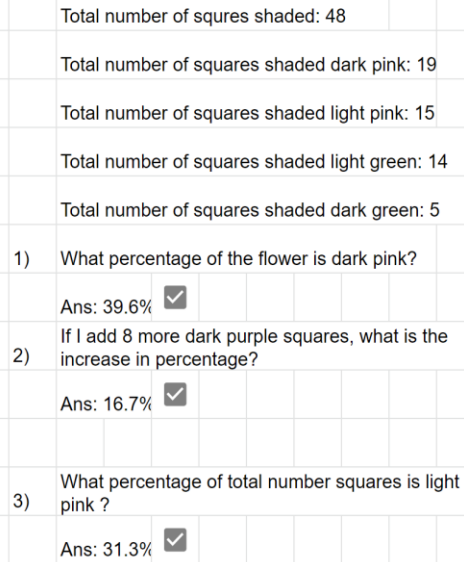
obtaining data to find the value of pi

The actual value is represented by π , which is read as **pi**.
 π is given by $\frac{22}{7}$ which is about **3.14**.

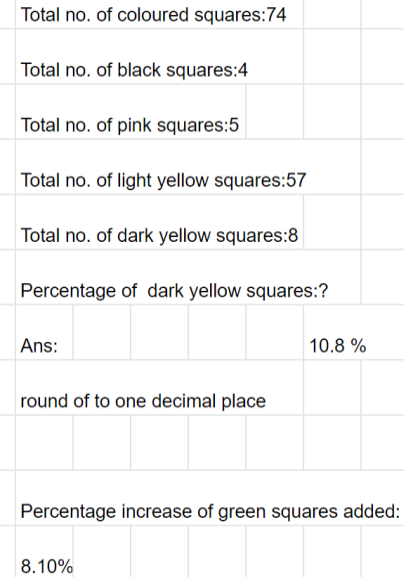
So,

The circumference of any circle =
 $\pi \times \text{Diameter}$

Percentage and Percentage Change:

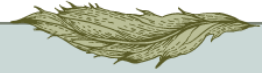


- 1) Find the percentage of the number of grey-pink squares.
**round your answer to 2 decimal places.*
- 2) If i add 12 more brown squares, what will the percentage of the brown squares be at the end?
**round your answer to 2 decimal places*

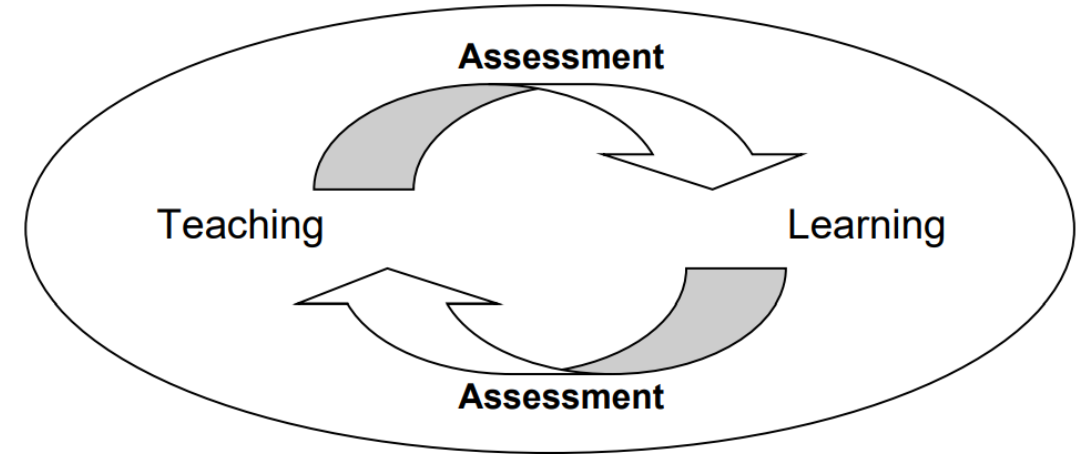


Using excel to find percentages and percentages change

Assessment Matters



- Assessment is an integral part of the teaching and learning process. It is an ongoing process by which teachers gather information about students' learning to inform and support teaching.
- An important product of assessment is feedback. It must inform students where they are in their learning and what they need to do to improve their learning.
- In RGPS, our teachers assess students using different modes of assessment both formally and informally. A meaningful range of assessment modes and tasks includes class discussions, classroom discourse, performance tasks, use of checklists, use of rubrics with teachers' comments and students' reflections.



Formative Assessments

Maths Journal

(1) Write down as many algebraic expressions as you can using the two cards.

3

n

(2) Write a problem sum involving the four operations using the terms 3 and n .

Q1

The ratio of the number of boys to the number of girls in a class is 4 : 5. Express the ratio of the number of boys to the number of girls as a fraction.

$\frac{4}{5}$

Feedback

Excellent!

$\frac{5}{4}$

Feedback

The ratio of the number of boys to the number of girls is 4 : 5.

$\frac{4}{9}$

Feedback

This is the ratio of the number of boys to the total number of students.

$\frac{5}{9}$

Feedback

This is the ratio of the number of girls to the total number of students.

SLS questions with hints/feedback

2

KW for Parallelogram, Rhombus & Trapezium

Interactive Thinking Tool

Parallelogram

Rhombus

Trapezium

View All

(a) What do you already know about parallelogram?

(b) What do you want to know about parallelogram?

Individual Student's Answer

Pre-populated Answer here...

Students' submissions will be displayed on the Interaction Board.

KW for quadrilaterals

Journal – to make thinking visible

Teacher's assessment after topical review

Areas for improvement:

- ❑ Expressing one item as a percentage of another (Q1)
- ❑ Convert percentage to decimal (Q2)
- ❑ Find a part given the whole and the percentage of the other part (Q3, 4)
- ❑ Finding percentage change (Q5)
- ❑ Solving word problems involving ratio, fraction and percentage (Q6, Q7, Q8, Q9, Q10)
- ❑ One item constant (Q11)
- ❑ Solving word problems involving percentage change (Q12)
- ❑ More than/less than (Q13)

Specific learning outcomes

I am      because _____ over my performance

Student's reflection

You can refer to the questions in your work to help you with your revision.

Page Number & Question Number	Learning Outcomes
<u>WB Chapter 4 - Practice 1</u> <ul style="list-style-type: none">Pg 87 – 90 <u>WB Chapter 4 – Review</u> <ul style="list-style-type: none">Pg 109 - 110 <u>Maths Journal</u> <ul style="list-style-type: none">Pg 115	Finding Percentages Pupils will be able to: <ul style="list-style-type: none">express a fraction or a decimal as a percentage and vice versafind the whole given a part and the percentagefind a part given the whole and the percentage of the other part
<u>WB Chapter 2 - Practice 2 & 3</u> <ul style="list-style-type: none">Pg 91 - 108 <u>WB Chapter 4 - Review</u> <ul style="list-style-type: none">Pg 111 - 114 <u>Maths Journal</u> <ul style="list-style-type: none">Pg 116 <u>WB Put On Your Thinking Cap!</u> <ul style="list-style-type: none">Pg 117 – 118	Word Problems Pupils will be able to: <ul style="list-style-type: none">solve word problems using the model and unitary methodfind the percentage change (percentage increase or decrease) using the unitary or the fractional methodfind the original or final value given the percentage changesolve word problems involving percentage, discount and GSTsolve higher-order word problems using model drawing, before-after concept, working backwards strategy and the unitary method.
<u>Problem Solving Booklet Percentage</u>	Problem Solving booklet 1. Repeated Identity 2. Constant Total 3. Constant Difference 4. One Item Constant 5. Remainder Concept 6. Equal Concept 7. Units and Parts (Cross Multiply)

Appendix for pupils to refer to for revision

Weighted Assessment feedback:

Qn	Learning objectives	Unable to apply correct math concept	Has partial understanding	Misread data/ computation errors
1	Converting a measurement from a smaller unit to a larger unit in decimal form, and vice versa			
2	Rounding decimals to the nearest whole number / 1 decimal / 2 decimal places			
3	Notation, representation and place values			
4	Expressing a part of a whole as a percentage			
5	Comparing and ordering decimals			
6	Multiplying and dividing decimals (up to 3 decimals places)			
7	Multiplying and dividing decimals (up to 3 decimals places)			
8	Finding a percentage part of a whole			
9	Finding a percentage part of a whole			
10	Finding discount, GST and annual interest			
11	Solving word problems involving the 4 operations (include heuristic skills - listing, working backwards, guess and check)			

Summative Assessments

Weighted Assessment 1	Weighted Assessment 2	Prelims
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Weighted Assessment 1	Topics tested	Weighted Assessment 2	Topics tested
T1W9 (50 mins)	Whole Numbers Fractions	T2W7 (50 mins)	Ratio and Proportion Measurements (Area & Perimeter)

Examination Format

Paper	Booklet	Item Type	Number of questions	Marks per question	Weighting	Duration
1	A	Multiple Choice	10	1	10%	1 h
			5	2	10%	
	B	Short Answer Response	5	1	5%	
			10	2	20%	
	Total		30	-	45%	
Paper Booklet		Item Type	Number of questions	Marks per question	Weighting	Duration
2 Calculator allowed		Short Answer Response	5	2	10%	1 h 30 min
		Structured- Long-answer	12	3, 4, 5	45%	
Total			17	-	55%	

Points to note

- The curriculum takes on a spiral approach. Some of the concepts taught are built on concepts taught in previous years.
- Exams will test on topics taught in previous years.

How can you help your child?



- Help to incorporate math into their day-to-day routine, help them to understand and appreciate its relevance.
- Ensure that they only use the calculator for Paper 2.
- Encourage them to check their work for accuracy and not speed.
- Encourage them to approach their math teachers if they encounter any challenges.
- Ensure that they have shown you their work and filed it properly to facilitate revision.
- Make Math fun for them! (Games, puzzles, concrete materials).
- Be encouraging and adopt a positive mindset, celebrate the small successes!



Thank you

