Haig Girls' SCHOOL

P5 Curriculum Briefing
Mathematics

ARS POTENS EST

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Vision

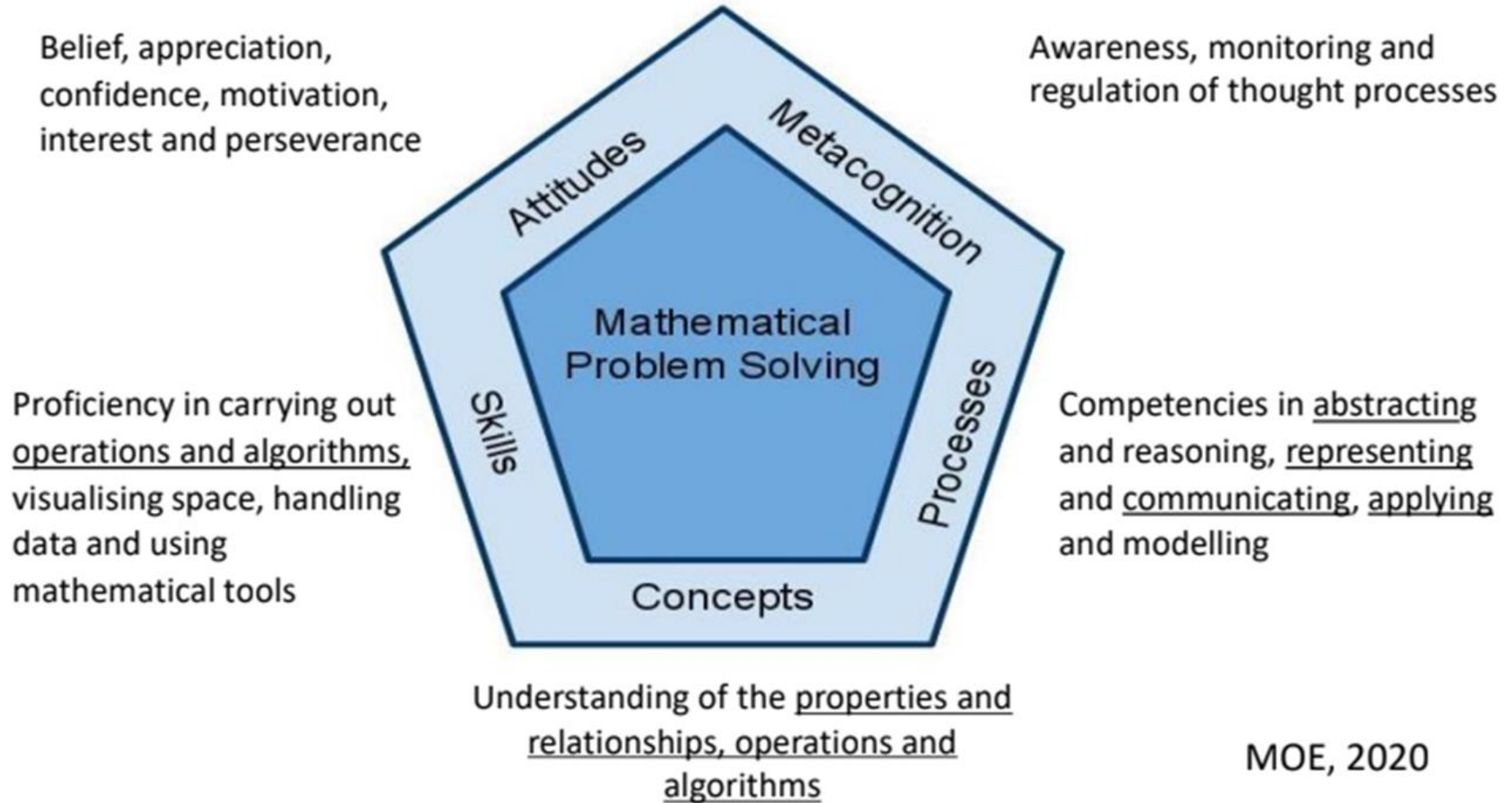A community of confident and motivated pupils who are both effective problem solvers and team players.

Mission

To equip pupils with the necessary mathematical knowledge and skills for everyday life and for continuous learning in mathematics and related disciplines.

Belief, appreciation, confidence, motivation, interest and perseverance

Awareness, monitoring and regulation of thought processes

Attitudes

Metacognition

Mathematical Problem Solving

Skills

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

Concepts

Understanding of the properties and relationships, operations and algorithms

MOE, 2020

2021 Primary Math Syllabus

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Primary 1	Primary 2 & 3	Primary 4	Primary 5	Primary 6
Whole Numbers	Whole Numbers	Whole Numbers	Whole Numbers	Whole Numbers
Measurement	Measurement	Measurement	Measurement	Measurement
Geometry	Geometry	Geometry	Geometry	Geometry
Data Analysis	Data Analysis	Data Analysis	Data Analysis	Data Analysis
	Fractions	Fractions	Fractions	Fractions
		Decimals	Decimals	Decimals
			Percentage	Percentage
			Ratio	Ratio
				Speed

Spiral Approach Math Curriculum

Types of Assessments

When are pupils assessed?	Non-weighted Assessments (NWA)	Weighted Assessments (WA)

Term 1 to Term 4	• Hands-on activities
	• Maths Practices
	  eg. Workbook exercises
	    Math journal
	    Test books practices,
	    Heuristics worksheets
	• Mental Sums
	• Questioning and Feedback
	• Practice Papers
		• WA 1 : 15% / 30 marks (Term 2)
		• WA 2 : 15% / 30 marks (Term 3)
		• End of Year Exam : 70% / 100 marks (Term 4)
		
		• **Dates and details will be provided in HA Letters**

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Assessment
Comparison of End of Year
Exam Format (P4 & P5)

PRIMARY 4	PRIMARY 5

➢ Total Mark : 100
➢ 1 Paper
➢ Duration: 1h 45 min
➢ Section A: MCQ
➢ Section B: SAQ (Short Answer Question)
➢ Section C: LAQ (Long Answer Question)
	➢ **Standard Mathematics**
	➢ Total Mark: 100
	➢ 2 Papers
	  - Paper 1 (1h)
	    Booklet A (MCQ)
	    Booklet B (SAQ)
	  - Paper 2 (1h 30 min)
	    SAQ & LAQ
	➢ **Foundation Mathematics**
	➢ Total Mark: 90
	➢ 2 Papers
	  - Paper 1 (1h)
	    Booklet A (MCQ)
	    Booklet B (SAQ)
	  - Paper 2 (1h)
	    SAQ & LAQ

P5 End of Year Exam Format

		Duration	Item Type	Marks per question	Total Marks
Paper 1 Calculator is not allowed.	Booklet A	1h	MCQ	10 x 1m 5 x 2m	20 m
	Booklet B		Short-answer	5 x 1m 10 x 2m	25 m
Paper 2 Calculator is allowed.		1h 30min	Short-answer	5 x 2m	10 m
			Long-answer	3m,4m,5m 12 questions	45 m

Note:
Both papers will be scheduled on the same day with a break between the 2 papers.

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Common Item Types in Exam

MCQ	• **1 to 2 marks per question** • **Four options are provided of which only one is correct**
SAQ	• 1 to 2 marks per question • Workings are optional but preferred • Marks are awarded for correct method even if answer is wrong
LAQ	• 3 to 5 marks per question • Workings and relevant steps must be shown clearly • Marks are allocated for correct method or working shown

P5 End of Year Exam Format

- Paper 1 (Non calculator paper)
- Paper 2 allows pupils the use of calculators to solve problems.

- Only calculators that are approved by SEAB will be allowed for use in the examinations.

- The list of approved calculators is available on the SEAB website - http://www.seab.gov.sg

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Good Time Management is Important

Paper 1 (60 min)	30 Questions	Average Time spent for each Question	Time left for checking answers
		1.5 min (1 .5 x 30 = 45)	15 min
		2 min (2 x 30 = 60)	No time to check!
Paper 2 (90 min)	17 Questions	Average Time spent for each Question	Time left for checking answers
		5 min (5 x 17 = 85)	5 min
		6 min (6 x 17 = 102)	No time to finish and check!

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Assessment Objectives

Pupils should be able to

Recall mathematical facts, concepts, rules and formulae; perform <u>straightforward</u> computations (**AO1**)

Interpret information; <u>understand and apply</u> mathematical concepts and skills in a variety of context (**AO2**)

Reason mathematically; <u>analyse information and make inferences</u>; select appropriate strategies to solve problems (**AO3**)

Example of an AO1 Question

Look at the figure below. Find the area of the shaded triangle.
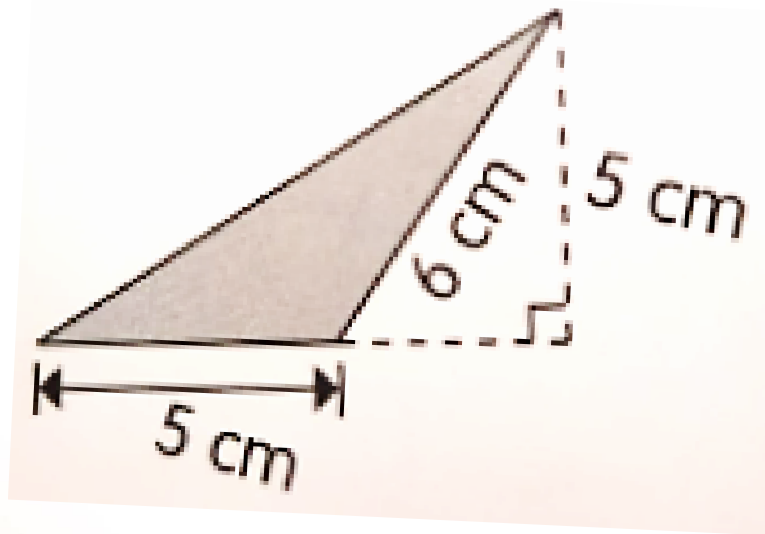
Shaded area ⟶ (5 x 5) ÷ 2
= 12.5 cm^2

Ans: 12.5 cm^2

Example of an AO2 Question

ABCD is a rectangle with a breadth of 12 cm. Its length is twice as long as its breadth. AF = 12 cm and AE = ED. Find the area of the shaded triangle CFE.

12 cm

6 cm

6 cm
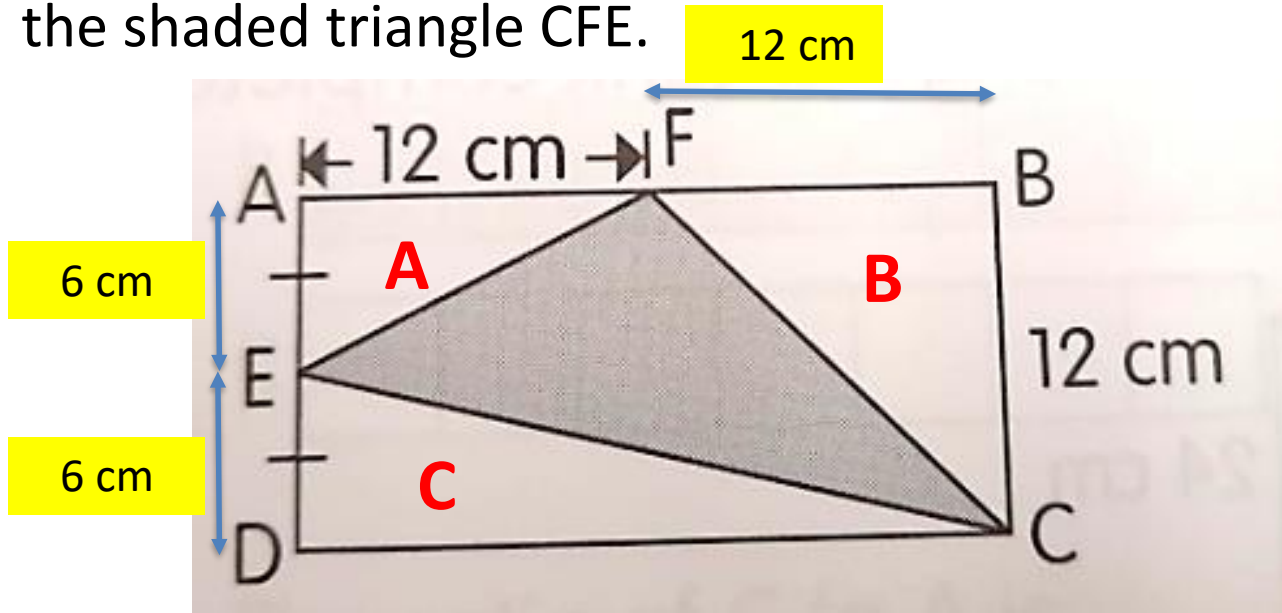
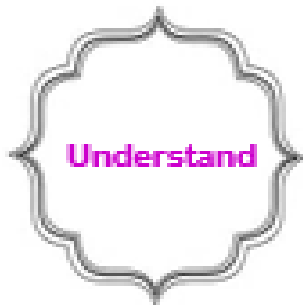**Area of Rectangle – Area of △A – Area of △B – Area of △C**

Example of an AO3 Question

The figure is made up of a square and a rectangle. Find the total area of the shaded parts of the figure.

70 cm

25 cm

A

57 cm

B
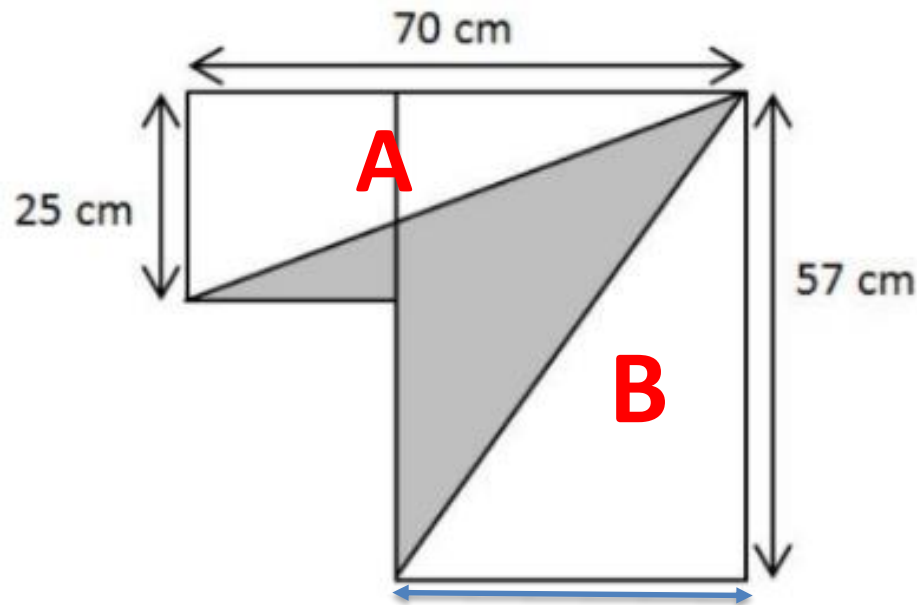
? (70 – 25 = 45 cm)

(Area of Rectangle + Square) – Area of △A – Area of △B = Area of shaded parts of the figure

Mathematical Problem Solving Process

Understand

C — (Circle) the numbers

U — **Underline** the key words
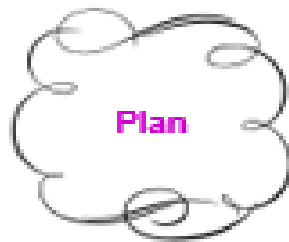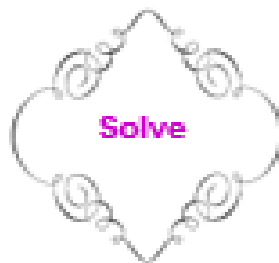
B — **Box** the question

E — **Explain** and Draw

Plan

Choose a Strategy/Heuristics
- Model drawing
- Find a pattern
- Make a list
- Working backwards
- Guess and check
- Others

Solve

- Write number equations clearly
- Add, subtract, multiply, divide
- Use mathematical tools such as ruler, protractor and set-squares
- Apply formula

Check

- Have I answered the question?
- **S** : Standard Units of Measurement
- **T** : Transfer Error
- **A** : Accuracy
- **R** : Reasonableness
- Is there another way I can solve and check my answer?

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UNDERSTAND : CUBE

Circle, Underline, Box and Explain key words and important values in the question

Rachel and Sean had the (same) number of marbles. Rachel gave away (20) marbles and Sean gave away (44) marbles. Rachel (then) had (3) times as many marbles as (Sean). How many marbles did Rachel and Sean each have at first?

At first — 3 units

1 unit

In the end

PLAN :
Choosing an appropriate Problem Solving Heuristics

Whole School Heuristics Approach

No.	Heuristics	P1	P2	P3	P4	P5	P6
1	Model Drawing: Part and Whole	√	√	√	√		
2	Model Drawing: Comparison	√	√	√	√		
3	Model Drawing: Multiplication and Division		√	√			
4	Model Drawing: Before and After			√	√	√	√
5	Systematic Listing	√	√	√	√	√	√
6	Find a Pattern	√	√	√	√	√	√
7	Draw a Diagram	√					√
8	Restate The Problem					√	
9	Guess and Check			√	√	√	√
10	Working Backwards			√		√	√
11	Make an Assumption				√	√	√

SOLVE :
Presenting their solutions clearly

Presentation of Answers

Alicia bought 8 plates and 5 cups. Each cup cost $2.50 and each plate cost $4.90 more than a cup. How much did she pay altogether?

(writing caption helps to monitor own thinking process and working steps)

5 cups ⟶ $2.50 x 5
= $12.50

1 plate ⟶ $4.90 + $2.50
= $7.40

8 plates ⟶ $7.40 x 8
= $ 59.20

Total ⟶ $59.20 + $12.50
= $71.70

Ans: $71.70

In a donation drive, 40 volunteers helped to distribute some Goodie bags. Each man distributed 4 bags while each woman distributed 3 bags. The men distributed 34 more bags than the women. How many men were there?

(Use Guess & Check)

No. of men	No. of bags dist. by men	No. of women	No. of bags dist. by women	Difference	Check if the difference is 34
40	40 x 4 = 160	0	0	160– 0 = 160	X
39	39 x 4 = 156	1	1 x 3 =3	156 – 3 = 153	X
22	22 x 4= 88	18	18 x 3 = 54	88 – 54 = 34	✓

Decrease

By 7

Difference → 160 – 34 = 126
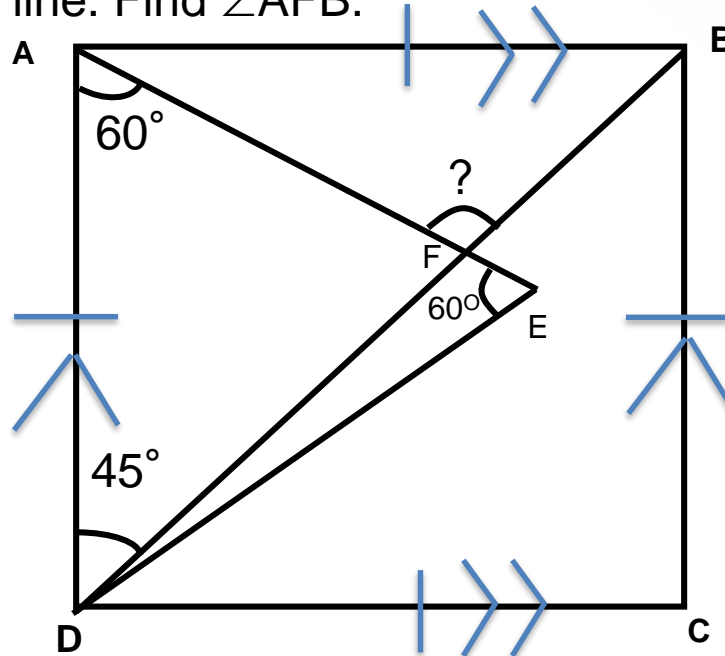Groups of 7 → 126 ÷ 7 = 18
Number of women → 18
Number of men → 40 – 18 =22

- **Headings**, **Working** and **Condition for Checking** must be shown clearly.
- Include an **answer statement**.

Ans : 22 men

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Angles in Geometric Figures

In the figure below, ABCD is a square, AED is an equilateral triangle and BFD is a straight line. Find $\angle AFB$.

$\angle DAE \ = 60^\circ \quad (\ \triangle \ )$

$\angle ADF \ = 45^\circ$

$\angle AFD \ = 180^\circ \ - \ (60^\circ + 45^\circ \ ) = 75^\circ \quad (\triangle \ 180^\circ)$

$\angle AFB = 180^\circ \ - 75^\circ \ = 105^\circ \quad (\ 180^\circ)$

State the geometric properties used (wherever possible) for checking of understanding

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Wrong use of 'equal' sign

Instead of : $1000 = 5kg
Should be : $1000 → 5kg

Instead of : 25% = $300
Should be : 25% of the savings = $300
          Or 25% → $300

Instead of $\frac{1}{4}$ = 18

Should be $\frac{1}{4}$ of apples = 18

          Or $\frac{1}{4}$ → 18

CHECK

- Have I answered the question?
- **S** : Standard Units of Measurement
- **T** : Transfer Error
- **A** : Accuracy
- **R** : Reasonableness
- Is there another way I can solve and check my answer?

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0. For **every $6 Leon saved, his mother contributed $3 to his savings. Leon had a total of $120 at the end of the month. How much did his mother contribute?**

Each set → 6 + 3
= 9

No. of sets → 120 ÷ 9
= 13 R3

13 sets → 13 × 3
= 39 ✓

Ans: $39 ✓

working:

$$13 \text{ R}3$$
$$9\overline{)120}$$
$$-9\downarrow$$
$$30$$
$$-27$$
$$3$$

$$\begin{array}{r} 13 \\ \times\ 3 \\ \hline 39 \end{array}$$

check:
13 sets of $6 → 13 × 6
                = 78

13 sets of $3 → 13 × 3
                = 39

78 + 39 = 117   120 - 117 = 3

11. A **T-shirt** was sold at **$39.** During **a sale, 3 T-shirts** were sold for **$100.** Mike bought **6 T-shirts during the sale. How much did he save?**

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Pupils are expected to

1. complete and hand in work on time

2. present solutions in an organised way, show working and the relevant steps and to include standard units of measurement (km, ℓ) when necessary

3. take note of their mistakes in their work and do corrections

4. go through their answers and check them carefully

5. seek help from teacher to clarify any doubts

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Support from Parents

1. Monitor your child's work i.e. ensure all homework and corrections are completed and check before signing.
2. Time management – help to administer each revision Paper 1 and Paper 2
3. To ensure no calculators is used in daily work unless calculator logo is indicated
4. Talk about Math as used in day-to-day situations
5. If your child/ward has difficulty with her homework, **<u>do not</u>** give her the answers but guide her with questions and indicate on the homework 'assisted' or 'guided'.
6. Encourage and Affirm effort and improvement made.
7. Should you have any concerns, do make an appointment to see your child's teacher to discuss

6.