

P.7 MATHS SCHEME OF WORK TERM ONE

Expected Learning Outcomes: The learner appreciates and applies the knowledge of time in real life situations

WK	PD	THEME	TOPIC	S-TOPIC	COMPETENCES		CONTENT	METHODS/ TECHNIQUES	L/ACT	IND. LIFE SKILLS/VALUES	T/L AIDS	REF	REM
					SUBJECT	LANGUAGES							
1	1	NUMERACY	FRACTIONS	Changing improper fraction to mixed number	The learner should - recognises the given fraction correctly. - reads the given fraction correctly. - expresses the given improper fractions as a mixed fraction	The learner should: i) pronounce the vocabulary correctly. i.e. - whole - numerator - denominator - divide	**Example** Change $^5/_4$ to a mixed number. Thus: expand it as ¼ + ¼ + ¼ + ¼ + ¼ Group the quarters into wholes. (¼ + ¼ + ¼ + ¼ + ¼) 1 whole and ¼ = 1 ¼	Group learning Think pair share Orientation	Expanding given improper fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Cut outs of fractions	Mk book 7 page 24 P.7 curriculum	
	2			Mixed number to improper fraction	The learner should:- i) recognizes a whole number and a fraction. ii) expresses a mixed numbers as an improper fraction.	The learner reads the vocabulary well. - whole number - numerator - denominator - multiply	**Examples** Change 1 ¼ to an improper fraction. Expand 1 ¼ as = 1 + ¼ = ¼ + ¼ + ¼ + ¼ + ¼ = simplify as $=\frac{(1+1+1+1+1)}{4}$ $= {}^5/_4$	Co-operation learning Discussion Illustration	Expanding given mixed numbers	Problem solving Effective communication Critical thinking Logical thinking Co-operation Appreciation	Counters Cut outs of fraction	Improve your math book 8 pg 12&25	

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										togetherness				
	3			Ordering fraction	The learner should: i) recognizes given fractions correctly. ii) arranges given fractions in a required order correctly.	The learner should: i) Construct meaningful sentences using "ascending" or "descending."	**Example** Arrange ¼, ½, $^1/_3$, and $^7/_{12}$ in order. 2 | 4 | 2 | 3 | 12 2 | 2 | 1 | 3 | 6 3 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 1 LCD = (2x2x3) = 4x3 =12 $^7/_{12}$ x 12 = 7x1 Ascending order ¼ $^1/_3$ ½ $^7/_{12}$ Descending order $^7/_{12}$ ½ $^1/_3$ ¼	Guided discovery	Finding the L.C.D Finding fractions of a whole	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Mk books 5 and 6 pages	
	4			Equivalent fraction	The learner: i) multiplies a fraction by a fraction correctly. ii) recognizes equivalent fractions correctly. iii) finds equivalent fractions of a given one correctly.	The learner:- a) describes equivalent fractions using the correct vocabulary.	**Example** Find the next three equivalent fractions of ½ = ½ x $^2/_2$, ½ x $^3/_3$, ½ x $^4/_4$ = $^2/_4$, $^3/_6$, $^4/_8$	Illustration	Multiplying fractions correctly	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Counters	Mk book 5	
	5			Addition of fraction with different denominators	The learner: i) adds fractions with different denominators correctly	The learner: i) reads additional sentences involving fractions correctly.	**Example** Add: ½ + 1/3 Thus: LCD 2 | 2 | 3 =(3x1)+(2x1) 3 | 1 | 3 6 | 1 | 1 LCD =2x3 = (3+2) = 6 6	Guided discovery Think pair share	Adding fractions with different denominators	Problem solving Effective communication Critical thinking	Multiplication tables	Mk book 7 Improve your	

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							$= 5/6$ **OR** $\frac{1}{2} \times \frac{2}{2}$ ($\frac{1}{2} \times \frac{3}{3}$) $\frac{1}{2} \times \frac{4}{4}$ $\frac{1}{3} \times \frac{2}{2}\frac{1}{3} \times \frac{3}{3}$ $\frac{1}{3} \times \frac{4}{4}$		correctly	Logical thinking Responsibility Co-operation Appreciation togetherness		maths book 7 page 26 and 27	
	6			Subtraction of fraction with different denominators	The learner: - recognize given fractions correctly. - extracts the L.C.D of given fractions correctly.	The learner" - constructs meaningful sentences with fractions and subtraction	**Example:** Work out: ½ - 1/3 L.C.D 2 | 2 | 3 LCD = 2x3 3 | 1 | 3 =6 1 | 1 Then: = $\frac{(3x1)-(2x1)}{6}$ = $\frac{(3-2)}{6}$ = $\frac{1}{6}$	Guided discovery	Subtracting fractions correctly	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness		Mk book 7 Improve your maths book 5 page 30-31	
	7			Mixed operations (addition and subtraction)	The learner: - recognises the given mathematical sentence correctly. - reads the given sentence correctly. - employs BODMAS to workout given problems correctly.	Reads sentence involving addition and subtraction of fractions correctly.	**Example.** Work out: $\frac{1}{3} - \frac{1}{2} + \frac{2}{3}$ Order (1/3 + 2/3) – ½ L.C.D 2 | 3 | 2 3 | 3 | 1 1 | 1 =($\frac{1}{3}$-$\frac{2}{3}$) – $\frac{1}{2}$ = $\frac{(1+2)}{3}$ - ½ = $\frac{3}{3}$ - ½ = $\frac{(2x3) – (3x1)}{6}$ = $\frac{(6-3)}{6}$ = $\frac{3}{6}$ = ½	Guided discovery	Solving problems on fractions involving mixed operation	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Improve your maths book 8	

2	1			Multiplication of fraction	The learner: - multiplies fraction by a) fractions b) whole numbers - multiplies a whole number by a fraction correctly.	The learner: Reads given sentences correctly.	**Examples:** i) $^1/_3 \times {}^2/_5 = \frac{1x2}{3x5} = \frac{2}{15}$ ii) $3x^5/_6 = 3x\frac{5}{6} = \frac{5}{2} = 2½$ iii) ½ x5 $= \frac{1x5}{2x1} = \frac{5}{2} = 2½$	Guided discovery	Multiplying fractions correctly.	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Tables	Mk book 7	
	2			Word problems involving multiplication correctly.	The learner: - recognises given fractions correctly. - solves given word problems involving multiplication of fractions correctly	The learner: - reads given mathematical sentences involving multiplication of fractions correctly.	**Examples:** a) What is ¾ of 8 balls? = ¾ x 8balls. = 3x2 balls = 6balls b) Joy had ¾ of a cake. She ate ½ of it. What fraction did she eat? She ate = ½ of ¾ $\frac{1x3}{2x4} = \frac{3}{8}$ = ½ x ¾	Guided discovery Think pair share	Solving word problems involving multiplication of fractions.	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Tables	Mk book 7 page 78 Gold medal book 7 page 13,14, 15	
	3			More word problems involving multiplication of fraction	The learner: - recognizes given fractions correctly.	The learner: - reads given word problems correctly.	**Example:** Allan slashed ¼ of the compound in the morning and ¾ of the remainder in the afternoon. What fraction did he slash in the afternoon? Remainder $= {}^4/_4 - ¼ = ¾$ Afternoon = ¾ of ¾ $= \frac{3x3}{4x4} = \frac{9}{16}$	Guided discovery		Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation	Multiplication tables	Mk book 7 page 79 Gold medal maths page 13, 14, 15	

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										togetherness				
	4			Tanks and taps	The learner: - recognizes given fractions correctly.	The learner: - reads given information correctly. - interprets the given information correctly	**Example:** Tap A takes 4 minutes to fill the tank. Tap B takes only 3 minutes to fill the same tank. If the taps are turned on together, how long does it take them to fill the tank? $\frac{1}{1} \div (\frac{1}{3} + \frac{1}{4})$ $\frac{1}{1} \div \frac{7}{12}$ $\frac{1}{1} \div \frac{(4+3)}{12} \frac{1}{1} \times \frac{12}{7}$ $= 1\frac{5}{7}$ min	Guided discovery	Interpreting given word problems	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Cut outs of real fractions	Mk book 7 page 80	
	5			Reciprocals	The learner should: - recognise a pattern of fractions with their reciprocals in multiplication. - find reciprocals of given fractions correctly.	The learner: .reads given problems correctly	Find the reciprocal of ¾ Let it be m ¾ x m = 1 $\frac{3}{4} \times \frac{m}{1} = 1$ $\frac{3m}{4} \times 4 = 1 \times 4$ 3m = 4 $\frac{3m}{3} = \frac{4}{3}$ $m = \frac{4}{3}$ the reciprocal of ¾ is $\frac{4}{3}$	Illustration Think pair share	Finding reciprocals of given fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Improve your maths book 7 page 34	
	6			Division of fractions	The learner: - divides fractions using the L.C.D correctly. - divides fractions using their reciprocals correctly	The learner: - reads given problems correctly. - interprets given problems correctly.	**Examples:** a) Work out: $\frac{3}{5} \div \frac{3}{10}$ $=(\frac{3}{5} \times 10) \div (\frac{3}{10} \times 10)$ $=(3 \times 2) \div (3 \times 1)$ $= 6 \div 3 = 2$ b) Work out: $\frac{3}{5} \div \frac{3}{10}$ $= \frac{3}{5} \times \frac{10}{3}$	Guided discovery	Dividing fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility	Multiplications tables	Improve your maths book 7page 34	

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							= $\frac{1x2}{1x1}$ = =2			Co-operation Appreciation togetherness			
	7			Combined operations	The learner; - uses BODMAS to solve problems.	The learner: - reads given problems correctly. - interprets given problems correctly.	**Simplify** **BODMAS** $(^3/_5 - {}^1/_3) \div {}^1/_5$ 3 | 5 | 3 5 | 5 | 1 1 | 1 $[\frac{(3x3) - (5x1)}{15}] \div \frac{1}{5}$ $\frac{(9 - 5)}{15} \div \frac{1}{5}$ L.C.M of 3 and 5 $^4/_{15} \div {}^1/_5$ 3 x5 = 15 $\frac{4}{15} \times \frac{5}{1} = \frac{4 \times 1}{3 \times 1} = \frac{4}{3}$ $= 1\,{}^1/_3$	Guided discovery	Dividing Multiplying	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Chalkboard illustrations	Mk book 6	
3	1						${}^1/_3 \times {}^1/_8 + {}^1/_4 \div {}^1/_7$ **BODMAS** ${}^1/_3 \times {}^1/_8 + ({}^1/_4 \div {}^1/_7)$ ${}^1/_3 \times {}^1/_8 + ({}^1/_4 \times {}^7/_1)$ $\frac{1X1}{3X8} + \frac{1}{4} \times \frac{7}{1}$ l.c.m. OF 4 & 24 $\frac{1}{24} + \frac{7}{4}$ 2 | 24 | 4 2 | 12 | 2 2 | 6 | 1 3 | 3 | 1 1 | 1 $\frac{(1X1) + (6X7)}{24}$ $\frac{1 + 42}{24}$ = 2 X 2 X 2 X 3 = 8 X 3 = 24 $\frac{43}{24} = 1\frac{19}{24}$	Guided discovery	Dividing Multiplying	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Chalkboard illustrations	Mk book 6	
	2			Addition of	The learner: - Interprets given	The learner,	**Example:** Add: 0.4 + 0.34 i) 0. 4	Illustrations	Adding decimal	Problem solving	Counters	Mk book 7	

				decimals	mathematical sentences correctly. - uses addition to solve given problems involving decimals	Reads given decimals correctly.	+ 0. 34 0. 74 ii) 0.4 + 0.34 (40+34) 4 + 34 100 10 100 =74 (10x4)+(1x34) 100 100 =0.74		correctly	Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness		page 82 Comprehensive maths book 8 page 79	
	3			Subtraction of decimals	The learners: - recognizes digits in a given decimal numerals correctly. - subtracts given decimal correctly	The learner: Reads givens mathematical sentences involving decimals correctly.	**Examples:** Work out: 0.46 – 0.31 i) 0. 4 - 0.31 0.15 ii) 0.46 – 0.31 (46-31) 46 - 31 100 100 100 = 15 100 =0.15	Guided discovery	Subtracting decimals	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Counters	Mk book 7 page 82	
	4			Ordering decimals	The learner: - recognise given decimals correctly. - orders decimals correctly.	The learner: - reads given decimals correctly	**Examples:** Arrange 04, 0.04, 0.3 and 0.03 in ascending order. $^4/_{10}$, $^4/_{100}$, $^3/_{10}$, $^3/_{100}$ LCD = 100 4x100, 4x100, 10 100 3x100, 3 x100 10 100 = 40, 4, 30, 3 0.03, 0.04, 0.3, 0.4	Guided discovery Think pair share	Ordering fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Counters	Mk book 5 page 148	

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	5			Addition and subtraction of decimal fraction	The learner: - recognizes given fractions correctly. - employs BODMAS to solve given problems involving addition and subtraction of decimals	The learner: - reads given mathematical sentences correctly.	**Example** Workout: 0.4-0.6+0.5 BODMAS (0.4+0.5)-0.6 = 0.9 – 0.6 = 0.3	Guided discovery	Solving problems involving addition and subtraction of decimals	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Counters	Mk book 7 page 82-83	
	6			Multiplication of decimals	The learner: - multiplies decimals correctly.	The learner: - reads given sentences correctly.	**Example:** Work out: 0.4 x 0.6 $= \frac{4}{10} \times \frac{6}{10}$ $= \frac{4x6}{10x10} = \frac{24}{100} = 0.24$	Co-operative thinking	Multiplying decimals	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Mk book 7 page 84	
	7			Division and decimal	The learner: - interprets the given problem correctly.	The learner: - reads given problems correctly.	**Example:** a) 0.3 ÷ 0.2 $= \frac{3}{10} \div \frac{2}{10} = \frac{3x1}{1x2}$ $= \frac{3}{10} \times \frac{10}{2} = 3$ 2 $= \frac{3}{10} \times \frac{10}{2} = 1.5$	Guided discovery	Dividing decimals	Problem solving Effective communication Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Mk book 7 page 85	
4	1			Multiplication and division	The learner: - recognizes the given mathematical	The learner: - reads given problems correctly.	**Example:** $\frac{0.4 \times 0.3}{1.2}$ = (0.4x0.3) ÷ 1.2	Guided discovery	Solving problems involvin	Problem solving	Multiplication tables	Mk book 7 page 83-85	

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				of decimals	sentences correctly. - employs multiplication and division to solve given numeral problems		$= \frac{4}{10} \times \frac{3}{10} \div \frac{12}{1}$ $= \frac{4}{10} \times \frac{3}{10} \times \frac{1}{12}$ $= \frac{1x1x1}{10x10x1} = 1$ 100 $= 0.01$		g multiplication and division of decimals	Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness			
	2			Mixed operations on decimals. (addition, subtraction, multiplication & division)	The learner: - recognizes the given problem correctly. - uses "BODMAS" to solve given problems.	The learner: - reads given problems correctly.	**Example:** Workout: $\frac{0.8 + 0.4}{0.3 \times 0.2}$ $=(0.8+0.4)\div(0.3x0.2)$ $1.2\div0.06$ $= \frac{12}{10} \div \frac{6}{100}$ $= \frac{12}{10} \times \frac{100}{6}$ $= 2x10 = 20$	Guided discovery	Solving problems on decimals involving mixed operation	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Comprehensive maths book 7 page 83	
	3		FRACTIONS	Changing fraction to decimals	The learner: - describe a terminating decimal correctly. - describes a recurring decimal correctly.	The learner: - pronounces the given vocabulary correctly. i.e. - terminating - recurring	**Examples** a) Express $^2/_5$ as decimal. 0.4 5 2 - 0 20 = 0.4 -20 - - b) Change $^1/_3$ to a decimals. 0.333 3 1 - 0 1 0 - 9	Guided discovery	Changing fractions to decimals	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Counters Multiplication tables	New MK book 7 page 89, 90	

							1 0 9 1 0 - 9 $^1/_3$ = 0.33						
	4	NUMERACY	FRACTIONS	Changing decimals to valgar fraction	The learner: - recognise a terminating decimal correctly. - recognise a reccuring decimal correctly.	The learner: - reads given problems correctly.	**Examples** a) Express 0.4 as a valgar fraction in its simplest terms. Thus: 0.4 = $^4/_{10}$ = 4÷2 10 ÷2 = $^2/_5$ b) Express 0.33 as a valgar fraction. Let it be m. mx10 = 0.33x10 10m = 3.3 - m - 0.3 9m = 3 9m = 3 9 9 m = $^1/_3$	Co-operative learning Think pair share Guided discovery	Expressing decimals as valgar fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Multiplication tables	Mk book 7 pages 91 and 92	
	5	NUMERACY	FRACTIONS	(RATIOS) Expressing quantities as ratios	The learner: - expresses quantities as ratios	The learner: - reads given problems correctly. - interprets given word problems correctly.	**Examples:** a) A class has 16 pupils 12 are boys and 4 are girls. What is the ratio of boys to girls in the class? Boys: girls 2 12: 4 2 6: 2 3: 2 b) Express 20 grams as a ratio of a kg. 1kg = 1000grams. 20g = 20g 1000g	Co-operative learning Orientation	Reducing fractions	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Metric tables	Mk book 7 page 96, 97	

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							= $^1/_5$ = 1:5						
	6			Increasing and decreasing quantities in ratios	The learner: - interpret given word problems correctly. - increase given quantities in given ratios. - decreasing a given quantity in a given ratio. - finding the ratio of increase or decrease.	The learner: - reads given problems correctly.	**Examples:** a) Increase 12 hens in the ratio 3:4 3 parts = 12 hens 4 parts = $\frac{4}{3}$ x 12 hens = $\frac{4}{3}$ x 12 hens = 4x4 hens = 16 hens. b) Decrease 21 pens in the ratio 3:7 = $\frac{3}{7}$ x 21 pens = $\frac{3}{7}$ x 21pens = 3x3phens = 9 pens	Think pair share Question and answer technique.	Finding parts of a given group. Reducing quantities using ratios	Problem solving Effective communication Critical thinking Logical thinking Responsibility Co-operation Appreciation togetherness	Metric tables Multiplication tables	Mk book 7 page 98	
	7			Sharing quantities in ratios	The learner: - interprets given problems correctly. - shares quantities in given ratios	The learner: - reads given problems correctly.	**Examples:** Kato and Kale shared shs. 1200 in the ratio of 1:2 respectively. How much did each get? **Kato** Total ratio 1+2 = 3 $^1/_3$ x 1200 = $^1/_3$ x1200/= = 1x400/= = 400/= **Kale** $^2/_3$ x 1200/= = $^2/_3$ x 1200/= = 2x400/= = 800/=	Guided discovery Demonstration	Sharing quantities in ratios	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables Coins Books Pencils Counters	Mk book 7 page 99	

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5	1			More problems on sharing quantities in ratios	The learner: - interprets given problems correctly. - use the given share and ratio to find the quantity shared	The learner: - reads given problems correctly.	**Examples:** a) Kalema and Kalebu shared sh. K in the ratio 1:2. It's given that Kalema got sh. 400. How much did they share altogether? Total ratio = 1+2 = 3 1 part = 400/= 2 parts = 2x400/= = 800/= TOTAL (K) 400 +800 1200/=	Guided discovery	Finding shared quantities in a given ratios	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money	Mk book 7 page 99	
	2				The learner: - shares given quantities in ratios correctly.	The learner: - reads given word problems correctly.	**Example:** Hana, Cate and Hope shared sh. 24,000 in the ratio 1:2:3 respectively. How much did each get? Total ratio (1+3+2)=6 **Hana** $^1/_6$ x 24000/= = 1x4000/= = 4000/= **Cate** $^2/_6$ x 24000/= = 2x4000/= = 8000/= **Hope** 3/6 x 24000/= =3x4000/= = 12000/=	Question and answer techniques	Sharing quantities in ratios	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money Multiplication tables	Mk book 7 page Improve your maths pages 209, 210	
	3			Direct proportions	The learner; - interprets given problems correctly.	The learner: - reads given problems correctly.	**Examples:** The cost of 4 books is sh. 2400. What is the cost of 7 similar books?	Brain storming	Solving problems involvin	Problem solving	Multiplication tables	Mk book 7 pages 101,	

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					- solves given word problems correctly.	- spells the given vocabulary correctly. - pronounces given vocabulary correctly.	4 books cost sh. 2400 1 book costs sh. 2400 7 books cost sh. $\frac{2400}{4}$x7 = 6000x7 = 42000/= (involve cost of items)	Question and answer techniques	g direct proportion	Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship		102, 103	
	4			Inverse (indirect) proportion	The learner: - interprets given problems correctly.	The learner: - reads given problems correctly.	**Example:** 4 boys can slash a compound in 3 days. How long will 6 boys working at the same rate take? 4 boys take 3 days 1 boy takes (4x3) days 6 boys take $\frac{4x3}{6}$ days = 2x1day = 2 days	Question and answer techniques	Solving problems involving inverse proportion	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables	Improve your maths book 8 page 219, 220, 221, 222.	
	5			Expressing percentages as; Fractions Ratios decimals	The learner: - interpretes given problems correctly. - expresses given percentages as fractions - expresses given percentages as ratios - expresses given percentages as decimal	The learner: - reads given word problems.	**Example** a) Change 20% to a fraction $= \frac{20}{100} = \frac{20 \div 20}{100 \div 20} = \frac{1}{5}$ b) Express 20% as a ratio $= \frac{20}{100} = \frac{20}{20}$:100 1 : 5 = 1:5 c) Express 40% as a decimal $= \frac{40}{100} = \frac{40}{100} = \frac{4}{10}$ = 0.4	brain storming declaration orientation	Solving problems involving percentages, ratios & decimal	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables	Mk book 7 page 106-109	

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	6			Parts of a percentage	The learner: - interpretes a given problem correctly. - finds parts of a percentage.	The learner: - reads a given problem correctly.	**Example** In a class, there 40% girls and the rest are boys. What percentage of the class are boys. = 100& - 40% = 100 - 40 100 100 = (100-40) 100 = 60 100 = 60%	Think pair share	Finding parts of a percentage	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Counter	Mk book 7 page 110	
	7			Finding parts of quantities using percentages.	The learner: - interpretes given problems correctly. - find parts of a given quantity using percentages.	The learner: - reads the given problem correctly. - pronounce the given vocabulary correctly.	**Example** There are 200 pupils in P.7 , 25%, are slow learners and the rest are fast learners. a) How many are slow learners? = 25% of 200 pupils = 25 x 200 pupils 100 = 25 x 2 pupils = 50 pupils b) How many fast learners are in the class? 100%-25% = 75% = 75% of 200 pupils = 75 x 200pupils 100 = 75x2 pupils = 150 pupil	Brain storming Discovery Think pair share	Finding parts of quantities using percentages	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables Counter	Mk book 7 page 113-115	
6	1			Percentage increase and decrease	The learner: - increase given quantities using given percentages. - decrease given quantities using percentages.	The learner: - reads given problems correctly,	**Example** Increase 12 pens by 25% 100% + 25% = 125% of 12 pens = 125 x 12 pens 100 = 5x3 pens = 15 pens Decrease 10books by 50% 50 x 10 books	Guided discovery Question & answer technique	Increasing quantities using given percentages	Problem solving Effective communication Critical thinking Responsibility Co-operation	Multiplication tables	Mk book 7 page 116-118	

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							100 = 5x1 book = 5 books		Decreasing quantities using given percentages	Appreciation Interpersonal relationship			
	2			Finding the amount increase by a given percentage	The learner: - interpretes given information correctly. - finds the amount increased by a given percentage.	The learner: - reads given information correctly.	**Example** The number of pupils in class increased by 20% and became 48 pupils. How many pupils were in the class before? 100%+20% of y = 48 pupils 120% x y = 48 pupils 120 x y = 48 pupils 100 120xyx100 =100x48pupils 100 120y = 4800pupils 120 120 y = 40pupils	Guided discovery Think pair share	Interpreting given word problems correctly.	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money Counters	Mk book 7 page 118	
	3			Finding the amount decreased by a given percentage	The learner: - interpretes given information correctly. - finds the amount decreased by a given percentage.	The learner: - reads given information perfectly.	**Example** A well stocked Library lost 20% of its books and remained with only 200 books. How many books were in the Library before? Let the no. be k (100%-20%) of k = 2000books 80% x k = 2000 books 80 x k = 2000 book 100 80 x k x 100 = 100x200pupils 100 80k = 2000books 80 80 K = 250 books	Guided discovery Question & answer technique	Interpreting given problems Solving given problems	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	books as counters money	Mk book 7 page 119	

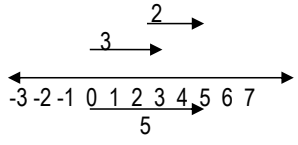
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							There were 250 books before						
	4			Finding percentage increase	The learner: - interpretes the given information correctly. - uses the given information to find percentage increase	The learner: - reads given sentences correctly. - forms own sentences using percentage increase	**Example** The number of pupils in a class increased from 40 pupils to 48 pupils. What was the percentage increase? (48-40) = 8 pupils = 8 x 100% 40 = 2x10% = 20%	Guided discovery	Finding percentage increase	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money Counters	Mk book 7 page 120	
	5			Finding percentage decrease	The learner: - interpretes given information correctly. - finds percentage decrease correctly.	The learner: - construct sentences using percentage decrease.	**Example** When 140 pupils were decrease by 2%, they became 126 pupils. Find the value of x. (140-126)=14pupils x=14x100% 140 x = 1 x10% x=10% also (100%-x%) of 40 =126p 10x(100-x)x140 = 126x10 100 1400-14x = 1260 1400-1400-14x = 1260-1400 -14x = 140 -14 14 X = 10%	Guided discovery Think pair share	Finding percentage decrease	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Counters	Mk book 7 page 122	
	6			Percentage profit or loss	The learner: - interpretes given information correctly. - finds profit on an item sold.	The learner: - reads given problems correctly - constructs sentences using	**Example** Joy bought a book at sh. 800. She later sold it at sh. 1200. Find the percentage profit. (1200-800) = 400 Then 400 x 100%	Guided discovery Brain storming	Find percentage profit	Problem solving Effective communication Critical thinking Responsibility	Money Multiplication tables	Mk book 7 page 123	

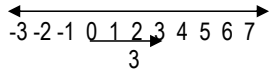
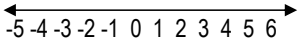
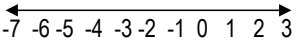
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					- finds percentage profit. - finds percentage loss	percentage profit.	800 = 50 x 1% = 50% Proceed to percentage loss			Co-operation Appreciation Interpersonal relationship			
	7			Percentage discount	The learner: - interpretes given problem correctly. - finds discount	The learner: - reads given problems correctly.	**Example** The marked piece of an item is sh. 24,000. How much can one pay when allowed a discount of 20% (100-20)% OF 24,000/= = 80% x 24,000/= = 80 x 24,000/= 100 = 80x24000/= = 19,2000	Question & answer technique	Finding discount	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money Multiplication tables	Mk book 7 page 129	
7	1			Commission	The learner: - interprets given information correctly. - relates commission to profit correctly. - solves problems involving commission correctly.	The learner: - reads given information correctly . - constructs sentences using the word commission	**Example** A sales man was paid his salary of sh. 120,000. He was also given a commission of 20% of his original salary. How much did he get? Commission = 20% of 120,000/= = 20 x 120,000 100 = 20 x 1200 = 24,000/= Total earning 120,000 + 24,000 144,000	Brain storming	Solving problems involving commission	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables	Mk book 7 page 132	
	2			Simple interest	The learner: - interpretes given information correctly. - uses the information to	The learner: - reads given information involving simple interest correctly.	**Example** Find simple interest on sh. 1600 at a rate of 10% per year for 2 years. SI = PxRxT = sh. 1600x10%x2 = sh. 1600x10x2	Guided discovery	Finding simple interest	Problem solving Effective communication Critical thinking	Money	Mk book 7 page 134	

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					find simple interest. - finds the rate correctly. - finds time correctly.	- constructs meaningful sentences using:- principal, rates, per annum & interest etc..	100 = sh. 160 x 2 = sh. 320 Proceed to finding rate and time			Responsibility Co-operation Appreciation Interpersonal relationship			
	3				The learner: - finds simple interest at rate given involving conversion of time.	The learner: - forms sentences using common vocabulary.	**Example** Find simple interest on sh. 1400 at a rate of 10% per year for a period of 8 months. SI =PxRxT = 140/=x10%x8 12 = 1400/=x10x2 100 3 = 140 x 2 3 = 280/= = 931 3 3 Allow enough practic	Brain storming	Finding simple interest	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Money	Mk book 7 page 135-143	
Expected Learning Outcomes: The learner recognises, manipulates and applies the knowledge of integers in real life														
	4	NUMERACY	INTEGERS	Addition of positive integers on a number line	The learner: - interpretes given information correctly. - draws a numberline correctly - adds integers using a number line	The learner: - reads the given information correctly. - constructs sentences using words related to integers	**Example** Add: 3+2  3+2= 5.	Orientation Guided discovery Illustration	Adding positive integers on a number line	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Number lines on the ground	Mk book 7 page	
	5			Addition of positive	The learner: - interpretes given	The learner: - reads the given	**Example** Add: 5 + -2	Guided discovery	Adding positive and	Problem solving	Number lines	Mk book 7	

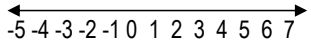
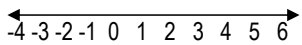
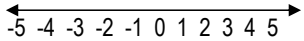
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				and negative integers on a number line	information correctly. - draws a number line correctly - adds integers using a number line	information correctly. - constructs sentences using words related to integers	+(-2) 5  -3 -2 -1 0 1 2 3 4 5 6 7 3 5+-2 = 3	Demonstration	negative integers on a number line.	Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship			
	6			Subtraction of integers	The learner: - recognises negative and positive integers.	The learner: - recognises and pronounce new vocabulary correctly.	**Example** Work out: 4 – 7 -7 4  -5 -4 -3 -2 -1 0 1 2 3 4 5 6 -3 4 – 7 = -3	Guided discovery Illustration Demonstration	Subtracting integers on a number line	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Number line	Mk book 7 page 312	
	7	NUMERACY	INTEGERS	Multiplication of integers on a number line	The learner: - multiplies integers using a number line correctly.	The learner: - reads multiplication statements correctly.	**Example** Work out: +3 x -2 3 groups of -2 step-length -2 -2 -2  -7 -6 -5 -4 -3 -2 -1 0 1 2 3 +3 x -2 = -6	Demonstration Guided discovery Illustration	Multiplying integers on a number line	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Numbers on the ground	Mk book 7 page 319	
8	1			Division of integers	The learner: - divides integers	The learner: - reads given sentences correctly.	**Example 1** -8 ÷ 2 -1 x 8 x ½ (-1x8) ÷ 2 =-1x4x1 -1x8x ½ = 1x4 = -4	Guided discovery	Dividing integers on a number line	Problem solving	Multiplication	Mk book 7	

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							Example 2 12÷-3 =-1x12x1 -1x3 (-1x12)÷(-1x3) = 1x4 x 1 -1 (-1x12)x1 = -4 -1x3 -1 = +4	Think pair share		Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	tables	page 321	
	2			Mathematical statements	The learner: - interpretes the given number lines correctly. - extracts integers represented by arrows on a number line correctly. - write correct mathematical sentences from a given number line.	The learner: - reads the given problems correctly.	**Examples** b a -3 -2 -1 0 1 2 3 4 5 6 k statements: a - b = k 6 – 9 = -3 Example 2 p k -4 -3 -2 -1 0 1 2 3 4 5 6 m statements: k+p=m 3+3 =6	Guided discovery	Writing mathematical statements	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Counters	Mk book 6 page	
	3	NUMERACY	INTEGERS	Operation on integers using mind maps	The learner: - uses guiding rules to work out given problems using mind maps	The learner: - reads given sentences correctly.	**Example** 3 + 4 -ve +ves + + + + + + + = 7 Example 2 -3 +6 -ve +ves	Illustration Question & answer techniques	Drawing mind maps	Problem solving Effective communication Critical thinking Responsibility	Counters	Mk book 7 page 317	

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							- + - + - + + + + -3+6=+3			Co-operation Appreciation Interpersonal relationship			
	4			Solution sets	The learner: - finds integers in a described set correctly.	The learner: - uses greater. Less or equal in correct sentences	**Example** M represents integers which are less than 2. Find the solution set for M.  -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 Solution set {----3, -2, -1, 0, 1}	Guided discovery	Finding solution sets	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Number lines on the ground	Mk book 7 page 325	
	5			Writing the inequalities for the solution s et shown on a number line	The learner: - interpretes given information correctly. - uses algebraic symbols to write correct inequalities.	The learner: - reads given information on the number line correctly.	**Example 1**  -4 -3 -2 -1 0 1 2 3 4 5 6 X represent integers greater than -3 but less than 4 -3 < x < 4 Example 2  -5 -4 -3 -2 -1 0 1 2 3 4 5 X represents integers greater than 1 x>1	Explanation Illustrations	Writing inequalities	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Number lines	Mk book 7 page 327	
	6	NUMERACY	INTEGERS	Solving inequalities	The learner: - solves the given inequality correctly.	The learner: - reads the given inequality	**Example** Find the solution set for; 6 < 2m < 16 = 6 < 2m <16	Guided discovery	Solving inequalities	Problem solving	Multiplication	Mk book 7	

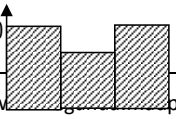
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					- write the solution set for the given inequality	using the right vocabulary.	2 2 2 = 3<m<8 0 1 2 3 4 5 6 7 8 9 10 Solution set {4, 5, 6, 7}	Illustration		Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	tables		
	7			Word problem	The learner; - works out word problems involving integers.	The learner; - reads and interprets the given information	In an interview, one mark is deducted for every wrong answer made and 2 marks awarded for every correct answer. What is the score marks for a candidate who gives; a) 3 correct answer and 2 wrong answer? (3x2) + (-1 x 2) 6 + -2 = 6 – 2 = 4 marks b) 5 correct answers and 4 wrong ones. (5 x 2) + (-1 x 4) 10 + -4 = 10 – 4 = 6marks	Guided discovery Illustration	Answering Multiplying and adding.	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables	Mk book 7	
9	1			The finite system. Addition in the finite system	The learner: - identifies digits in a given finite. - adds in finite system using a dial. - adds in finite system using a number line.	The learner: - reads given sentences correctly.	**Example** Add: 3 +4 = (finite 5) a) Using a dial. 3 + 4 = 2 (finite 5) b) using a number line 4 3	Orientation Guided discovery	Finding addends in finite system	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Number lines	Mk book 6page	

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							0 1 2 3 4 0 1 2 3 4 3 + 4 = 2 (finite 5)	Question & answer Dedication					
	2			Subtraction in finite system	The learner: - subtracts correctly in finite system.	The learner: - reads given sentences correctly.	**Examples** Work out 3 – 5 ….. (mod 7) 3 – 5 = 5 (mode 7)	Guided discussion Illustration	Subtratcing in finite system	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	A pair of compasses	Mk book 6 Mk book 7 page 330	
	3			Multiplication in finite system	The learner: - interpretes given information correctly. - finds products in finite system using a number line. - finds products in finite system using a dial.	The learner: - reads given statements correctly.	**Examples** Work out: 3x2 (mod 5) 3 groups of 2. 0 1 2 3 4 0 1 2 4 5 6 3x2 = 1 mode 5 Continue to other techniques.	Demonstration	Finding products in finite system	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	A number line Multiplication tables	Functional book 5	
	4			Application of finite system	The learner: - employs the finite system to solve given	The learner: - reads given word problems correctly.	**Example** Today is Monday, what day of the week will it be after 16 days from today. Monday stands for 1 (one)	Guided discovery	Solving problems in real life situations using the	Problem solving Effective communication	Multiplication tables	New mk book 7 page	

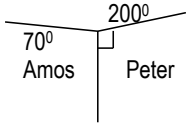
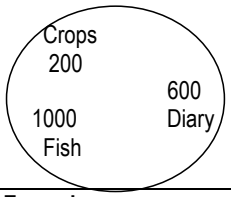
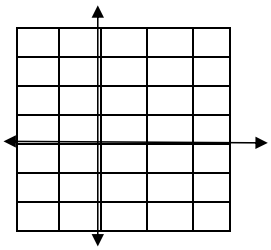
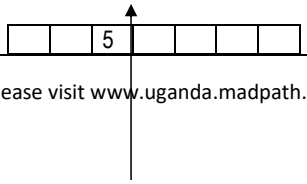
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					problems correctly.		1 + 16 = …….. (fin 7) 17 = …….. (finite 7) 17÷7 = 2r3 (fin 7) = 3 (finite 7) The day will be a Wednesday.	Orientation	finite system.	Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship			
	5	NUMERACY	INTEGERS	Application of more than one finite at ago	The learner: - interpretes given information correctly. - solves problems involving more than one finite at ago	The learner: - reads given information correctly.	**Example** Musa grouped his oranges in heap of 5 and 2 oranges remained, when he grouped them in groups of 8, 3 oranges remained. How many oranges did he have? 2(fin 5) = 2, 7, 12, 17, 22, 27 3(fin 8) = 3, 11, 19, 27, … The Lowest Common Equivalent no. is 27. Musa had 27 oranges.	Guided discovery Whole sentence Question & answer	Finding equivalent numbers in finite system.	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Multiplication tables	Mk book 7 page 339	
	6	INTER[RETATION OF GRAPHS AND DATA	INTERPRETATION OF GRAPHS AND DATA	Picto graphs	The learner: - recognises given pictographs correctly. - interptretes given pictographs correctly. - solves given problems involving picto graphs.	The learner: - reads words connected to graphs correctly. Axis vertical, horizontal.	**Example** Given ◇ represents 8 Bibles. How many pictures will represent 32 Bibles? 1 picture represents 8 Bibles ? pictures represents 32 8 = 4 pictures	Question and answer Buzz	Solving problems involving picto-graphs	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Books Counters	Mk book 7 page 147	
	7			Bar – graphs	The learner: - interpretes given bar graphs correctly.	The learner: - constructs sentences using horizontal,	**Example** The graph below shows cows owned by three people. No. of 30 20 	Illustration	Solving problems involving bar graphs	Problem solving Effective communication	rulers	Mk book 7 page 148,	

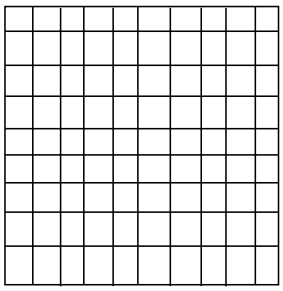
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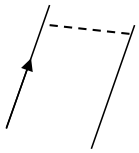
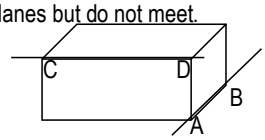
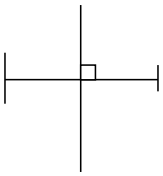
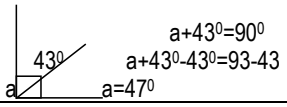
					- solves given problems using bar graphs	vertical, axis correctly.	cows 10 0 Ann Allan Kate → Qns Who has the highest number of cows? Ann and Kate have the highest number of cows.	Demonstration		Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship		149, 150	
10	1			Interpreting data and drawing bar graphs.	The learner: - interpretes given data correctly. - uses given information to draw bar graphs. - uses given information and draws line graphs.	The learner: - reads given information correctly.	**Example** The table shows books owned by 4 bags. Alvin 18 | Peter 24 | Allan 9 | Hope 18 a) draw a bar graph for the given information. b) draw a line graph for the given information.	Guided discovery Think pair share	Drawing bar graphs Drawing line graphs	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Charts	Mk book 7 pages 151, 152, 153	
	2			Finding mode, mean, median, range and modal frequency	The learner: - uses a given information to find mode. - uses given information to find average	The learner: - reads given data correctly.	**The** table below shows marks scored by Petero in different tests. **Mrks** 40 60 80 90 **N.of.t** 1 5 2 2 Find a) modal mark b) range c) median d) mean etc	Orientation	Finding mean, median, mode, range and modal frequency	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Tables on wall charts	Mk bk 7 pages 154-157 Comprehensive page 179	
	3			Interpreting pie-charts	The learner: - interpretes given circle graphs correctly. - solves given problems	The learner: - reads the given information correctly.	**Example** Three boys shared sh. 3600 as shown on the circle graph below. How much did each get? Allan	Orientation	Solving problems involving pie-charts	Problem solving Effective communication Critical thinking	Multiplication tables	Mk book 7 page 156-159	

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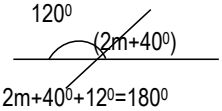
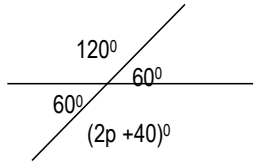
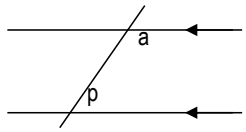
					involving pie-charts correctly.		 **Amos** **Peter** **Allan** 70 x 3600 200 x 3600 90x3600 360 360 360 = 70x10 = 20x100 = 90x10 =700/= =2000/= = 900/=			Responsibility Co-operation Appreciation Interpersonal relationship			
	4			Drawing pie-charts	The learner: - interpretes the given data correctly. - draws accurate pie charts using given information	The learner: - reads the given data correctly.	**Example** Use the information below to draw an accurate pie-chart 	Guided discovery	Measuring angles Drawing pie charts	Problem solving Effective communication Responsibility Co-operation Appreciation Interpersonal relationship	Pair of compasses	Mk book 7 page 163	
	5			Naming points on a co-ordinate graph	The learner: - recognises the x and y axes correctly.	The learner: - reads the vocabulary related to graphs correctly.	**Example** Name the co-ordinates of point A on the graph below. 	Illustration	Naming points on a co-ordinate graph	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Rulers	Mk book 7 pages 176-180	
	6			Forming figures by plotting points	The learner: - draw a grid correctly. - plot given points correctly.	The learner: - reads the given co-ordinates correctly.	**Example** Plot a figure with the following vertices. A(-2, 0), B(-1, 2), C (2,3) & and D(1,1) 	Illustration	Plotting figures on the graph	Problem solving Effective communication Critical thinking	Rulers	Mk book 7page 181-184	

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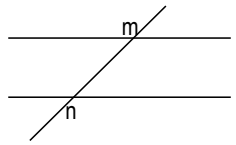
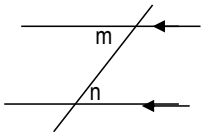
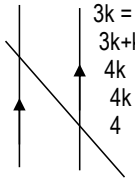
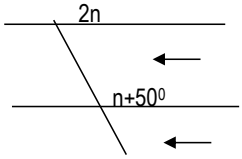
							4 3 2 1 -3 -2 -1 0 1 2 3			Responsibility Co-operation Appreciation Interpersonal relationship		
	7			Lines of formed by ordered pairs	The learner: - plots given co-ordinates correctly. - joins plotted co-ordinates to form lined correctly.	The learner: - reads given pairs of co-ordinates correctly.	**The** co-ordinates of the line y=x-2 are (0,2), (1,-1), (2,0), (3, 1), (4,2), (-1, -3) 	Illustrations	Drawing co-ordinates graphs	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Rulers	Mk book 7 page 185 & 186	
11	1			Probability. Using simple space & favourable	The learner: - recognises the favourable outcomes correctly. - recognises the sample space correctly. - finds probability using sample space and favourable chances	The learner: - reads given information correctly. - pronounce the new vocabulary correctly. - spells the new vocabulary correctly.	**Example** When a die is rolled on a table one. What is the probability of getting an even number on top? Pr = n(desired outcomes) n sample space pr = 2, 4, 6 1, 2, 3, 4, 5, 6, Pr = n(favourable outcome) n(sample space) pr = 3 6 Proceed to a coin, then Cartesian products and probability.	Guided discovery Think pair share Illustrations	Finding probability	Problem solving Effective communication Critical thinking Responsibility Co-operation Appreciation Interpersonal relationship	Counters	Mk book 7 page 188 &189 Mk book 7 page 190-191	
Expected Learning Outcomes: The learner recognises and constructs lines, angles and geometric figures.												
	2	Geometry	Geometric	Parallel and	The learner:	The learner:	**a)** Parallel lines are separated by the same distance allover	Demonstration	Drawing	Creative thinking	Rulers	Mk book 7

			constr uction	skew lines	- draws parallel lines correctly. - recognises skew lines correctly. - constructs parallel lines using a pair of compasses.	- describes parallel lines correctly using the right vocabulary.	 b) Skew lines lie in different planes but do not meet.  DC and AB are skew lines.	Illustration s	parallel lines using a set square or a pair of compa sses	Problem solving Logical thinking Co-operation Appreciation Self reliance	Boxes	page 197	
	3			Line segment and angles	The learner: - draws line segment correctly. - bisects line segments correctly.	The learner: - recognises line segments correctly.	**Bisecting a line segment** 	Illustration s	Pair of compa sses	Creative thinking Problem solving Logical thinking Co-operation Appreciation	Pair of compa sses		
	4				The learner: i) recognises, - an acute angle - right angle - obtuse angle - reflex angle - angle at a point	The learner: - pronounce the new vocabulary correctly. - acute angle - obtuse angle - reflex angle - angle at a point		Illustration s	Plane papers	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance		Mk book 7 page 199	
	5			Comple mentary angles	The learner: - recognises complimentary angles correctly.	The learner: - reads the words compliment, complimentary correctly.	**Of the type** Find a in degrees. 	Guided discovery	Finding compli ments.	Creative thinking Problem solving Logical thinking	Protrac tors	New Mk book 7 page 202	

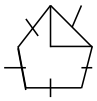
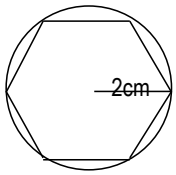
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					- finds the compliment of the given angles.		continue to word problems.			Co-operation Appreciation Self reliance			
	6			Supplementary angles	The learner: - recognises supplementary angles correctly. - finds the supplement of given angles correctly.	The learner: - reads the vocabulary correctly. - pronounces the word supplementary well.	**Of the type** Find m.  $2m+40^0+12^0=180^0$ $2m+160^0=180^0$ $2m+160^0-160^0=180^0-160^0$ $\frac{2m}{2} = \frac{20}{2}$ m = 10	Guided discovery	Finding supplements of given angles	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Multiplication tables	Mk book 7 page 204 & 205	
	7			Vertically opposite angles	The learner: - recognises vertically opp. S - relates vertically opposite angles correctly.	The learner: - spells the new vocabulary correctly.	**Of the type** Find p in the diagram.  $(2p+40)^0=120^0$(vert. opp.∠s) $2p^0+40^0=120^0$ $2p^0+40^0-40^0=120^0-40^0$ $\frac{2p^0}{2^0} = \frac{80^0}{2^0}$ p = 40	Orientation Guided discovery Demonstration	Solving problems involving vertically opposite angles.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Multiplication tables	Mk book 7 page 206	
1 2	1			Co-interior and co-exterior angles.	The learner: - solves problems involving co-interiors angles correctly. - solves problem involving co-	The learner: - pronounces the new words correctly.	**Example** Co-interior angles.  $\angle a + \angle p = 180^0$ Co-exterior angles	Guided discovery	Comparing angles	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Multiplication tables Counters	Mk book 7 pages 207 & 208	

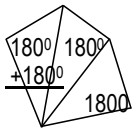
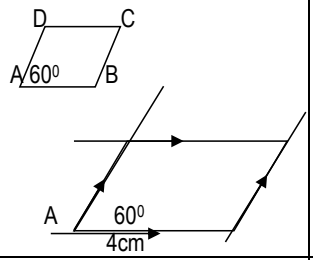
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					exterior angles correctly.		 $\angle m+\angle n=180^0$ Pause more problems						
	2			Alternate interior and exterior angles	The learner: - recognises alternate interior angles. - recognises alternate exterior angles correctly. - solves related to alternate interior or exterior angles	The learner: - pronounces the new words correctly. - alternate - interior - exterior	**Example** Alternate interior angles  $\angle m = \angle n$ (alternate interior $\angle$) Alternate exterior angles Find k in degrees.  $3k = 80^0-k$ (alt. ext. $\angle$) $3k+k=80^0-k+k$ $4k = 80^0$ $\frac{4k}{4} = \frac{80^0}{4}$ $k= 20^0$	Guided discovery Think pair share	Recognising alternate interior angles Recognising alternate interior angles.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Multiplication tables	Mk book 7 pages 209-210	
	3			Corresponding angles	The learner: - recognises corresponding angles - solves given problems involving corresponding angles.	The learner: - pronounces the new words correctly. - spells the word "corresponding" correctly.	**Example** Find the value of n  $2n = n +50^0$ (corr. $\angle$s) $2n-n =n-n+50^0$	Guided discovery	Solving problems involving corresponding angles.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Counters	Mk book 7 pages 211,212	

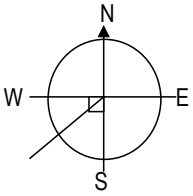
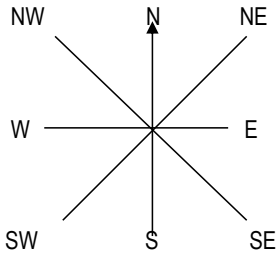
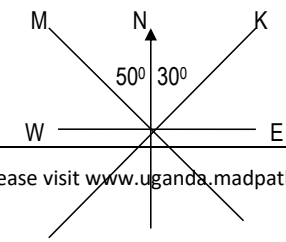
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							$n = 50^0$ expose more examples						
	4			Simple polygons	The learner: - recognises simple polygons by name. - recognises simple polygons by properties.	The learner: - pronounces names of simple polygons correctly. - states properties of regular polygons correctly.	**Example** **No. of sides** → **Name** 3 Triangle 4 Quadrilateral 5 Pentagon 6 Hexagon 7 Septagon Heptagon 8 Octagon 9 Nonagon 10 Decagon 11 Nuodecahon Hedecagon 12 Duodecagon	Guided discovery	Stating properties of regular polygon	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Wall charts showing simple polygon	Mk book 7 page 227	
	5			Pentagon	The learner: - constructs a regular pentagon using a pair of compasses and a ruler.	The learner: - states properties of a pentagon.	Construct a regular pentagon with side 4cm. Sketch  Accurate diagram	Demonstration Illustration	Construction a regular pentagon	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Papers	Mk book 7 page 271	
	6			Regular Hexagon	The learner: - constructs a regular hexagon using a pair of compasses and a ruler.	The learner: - states properties of a regular Hexagon.	Construct a regular hexagon in a circle of radius 2cm.  Proceed to perimeter	Illustration	Constructing a regular hexagon in a circle.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Pair of compasses.	Mk book 7 page 273	

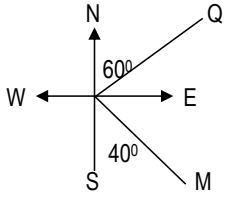
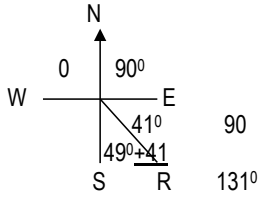
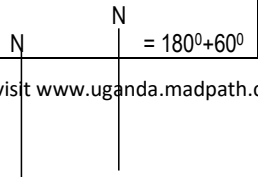
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	7			Interior angel sum of polygons.	The learner: - calculates interior angel sum of regular polygons.	The learner: - states properties of regular polygons.	Find the interior angle sum of a five sided regular polygon.  180^0 180^0 $+180^0$ 180^0 180^0 180^0 540^0 OR: $= (n-2)180^0$ $= (5-2)180^0$ $= 3x180^0 \quad = 540^0$ Proceed to others	Guided discovery Think pair share	Finding the interior angle sum of regular polygons	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Pair of compasses	Mk book 7 page 253	
13	1			Construction of Quadrilaterals	The learners: - constructs simple quadrilaterals using a pair of compasses	The learner: - states properties of simple quadrilaterals.	**Construct a parallelogram.** ABCD in which AB =4cm, AB = 2cm and and DAB =600. sketch  D C A 60^0 B A 60^0 4cm	Guided discovery	Constructing a parallelgram.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Papers	Mk book 7 page 268, 269	
	2			Bearing and scale drawing Rotation	The learner: - finds the size of an angle given a fraction of a revolution.	The learner: - describes rotation	**Example** How many degrees are in ¾ of a revolution? A revolution = 360^0 $= ¾$ of $360^0 \quad = ¾ \times 360^0$ $= ¾ \times 360^0$ $= 3 \times 90^0 = 270^0$	Guided discovery	Find size of angles for given parts of revolutions	Creative & logical thinking Problem solving Co-operation Appreciation Self reliance	Protractor	Mk book 7 page 286	
	3			Angles between the compass direction	The learner: - finds angles between given compass points.	The learner: - describes angles between given compass points.	**Example** What is the smaller angel between North and S.E?	Guided discovery	Finding angles between given compa	Creative thinking Problem solving Logical thinking	Pair of compass Rulers	New Mk book 7 page 287	

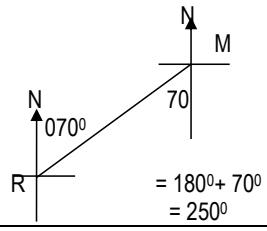
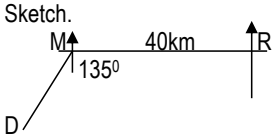
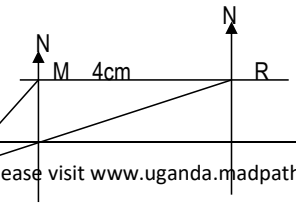
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							 Smaller angle = 90^0+45^0 = 135^0 Involve clockwise and anti clock wise.		ss points.	Co-operation Appreciation Self reliance			
	4			Compass direction	The learner: - finds direction using a compass.	The learner: - describes bearing and directions correctly.	**Example** Mao is facing South which direction will he face if he turns anti clockwise through an angle of 135^0?  He will face in North Eastern.	Illustrations	Finding direction using a compass.	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Wall charts Globe	Mk book 7 page 289	
	5			Ordinary bearing (direction)	The learner: - finds the direction of a given point.	The learner: - describes ordinary bearing using the correct vocabulary.	**Example** State the direction of points, K, P, M and R. 	Orientation Guided discovery	Finding direction of a given point	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Compass	Mk book 7 290-292	

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							68^0 20^0 R S P R ($S68^0W$), K ($N30^0E$) P ($S20^0E$), M ($N50^0W$)						
	6			Opposite direction	The learner: - states the opposite direction of a given place (point)	The learner: - describes opposite direction correctly.	State the opposite of point Q and M.  actual dire oppoite dire Q $N60^0E$ $S60^0W$ M $S40^0E$ $N40^0W$	Guided discovery	Finding opposite direction	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Compass	Mk book 7 pages 293 & 294	
	7			Bearing	The learner: - finds the bearing of given points.	The learner: - describes true bearing.	**Example 1** What is the bearing of point R from point O  **Example 2** What is the bearing of M from N?  	Guided discovery Think pair share	Finding bearing of given points	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Protractor Compass	Mk book 7 pages 295-297	

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							= 240^0 N 60^0 60^0 M						
14	1			Opposite bearing	The learner: - finds opposite bearing of given places.	The learner: - describes opposite bearing of places.	**Example** The bearing of M from R is 070^0. What is the bearing of R from M?  = 180^0+ 70^0 = 250^0	Guided discovery	Finding opposite bearing	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Rulers	Mk book 7 pages 298, 299	
	2			Scale drawing	The learner: - interpretesgiven information correctly. - converts given lengths to the required units correctly. - constructs accurate drawings using the information correctly.	The learner: - describes scale drawing correctly.	**Example** Town M is 4okm west of Towm R and D is 20km from M on a bearing of 135^0. Using a scale of 1km=10km. What is the shortest distance between the town R and D? Sketch.  $\frac{40km}{10km}$ = 4cm $\frac{20km}{10km}$ = 2cm  	Orientation Guided discovery Think pair share	Showing bearing of locations	Creative thinking Problem solving Logical thinking Co-operation Appreciation Self reliance	Pair of compasses Rulers Protractors	Mk book 7 pages 300-304	

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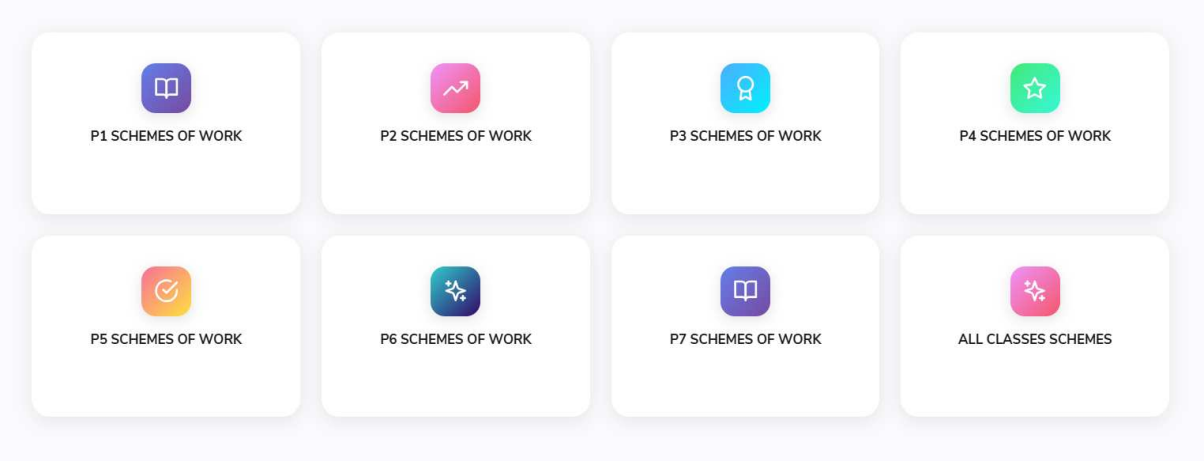
							Shortest dist: = 5.5 cm = 5.5 x 10km = 55km						
Expected Learning Outcomes: The learner appreciates and appreciated the knowledge of time in real life situations													
	3	MEASURES	TIME	The 12 and 24 hour clock time	The learner: - reads time in 12 hour clock correctly. - tells time in 24 hour clock correctly. - converts time from 12 hour clock to 24 hour clock.	The learner: - reads time on a 12 hour clock correctly. - reads time on a 24 hour clock.	**Examples** Change 11:04a.m. to 24 hours system. = 11:04 +00:00 11:00 hours Change 3:40p.m. to 24 hour clock system. 3: 40 +12:00 15:40/15 40 hours	Guided discovery Orientation	Reading time on 12 and 24 hour clocks.	Effective communication Problem solving Decision making Co-operation Self reliance Appreciation independence	Clock	Mk book 7 pages 411, 412	
	4				The learner: - changes time reading from 24 hour to 12 hours.	The learner: - reads time in 12 and 24 hour clocks.	**Examples** **Change** 04 40 hours to 12 hour claock system. = 04 : 40 - 00 : 00 04 : 40/04:40a.m. Convert 16: 04 hours to 12 hour system. 16: 04 - 12: 00 04: 04 / 4:00p.m.	Guided discovery	Changing time from 24 hour to 12 hour clock system.	Effective communication Problem solving Decision making Critical thinking Co-operation Self reliance Appreciation Independence	Clock	Mk book 7 page 413	
	5			Finding duration	The learner: - finds duration when given two points of time.	The learner: - reads given problems correctly.	**Example** Moi left his home at 06 00 hours and reached town at 1:00p.m. For how long did he travel? 06 00hrs 13:00hrs	Guided discovery	Finding duration	Effective communication Problem solving	Clock Counters	Mk book 7 page 414	

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							+1: 00p.m. – 6:00hrs 7:00hrs 1:00 12:00 13: oohrs for hours.	Think pair share Buzz		Decision making Co-operation Self reliance Appreciation Independence			
	6	MEASUREMENTS	TIME	Reading time tables	The learner: - interpretes given time tables correctly. - solves time problems involving time tables.	The learner: - reads given time tables correctly.	- class time tables - school time tables - travel time tables	Guided discovery	Reading time tables	Effective communication Problem solving Decision making Co-operation	Time tables	Mk book 7 pages 415-423	
	7			Solving problem involving time	The learner: - interpretes given problems about time correctly. - solves problems involving time correctly.	The learner: - reads given problems about time correctly.	**Of the type** Two bells are sounded at intervals of 20 minutes and 40 minutes respetively. If the bells are sounded one at 7:20a.m.m When do they sound again? 2 | 20 | 40 2 | 10 | 20 2 | 5 | 10 5 | 5 | 5 1 | 1 LCM =(2x2x2)x5 = 8x5 = 40 min = 7:20a.m. +0:40min 7:60min 1 hour = 60 minutes = 8:00a.m.	Whole sentence Buzz Guided discovery	Solving problems involving time	Effective communication Problem solving Decision making Critical thinking Co-operation Self reliance Appreciation independence	Time tables	Mk book 7 page	

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