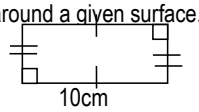
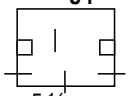
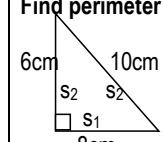
SCHEME OF WORK FOR PRIMARY SEVEN TERM III

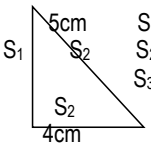
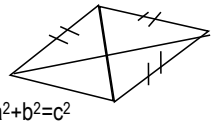
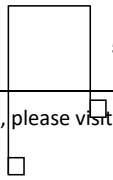
ELO: The learner appreciates and recognises the application of lengths, mass and capacity in daily life experiences.

WK	PD	THEME	TOPIC	S/TOPIC	COMPETENCES		CONTENT	MTHD/TECHNIQUES	L/ACT	IND. OF L. SKILLS & VALUES	L/AIDS	REF	REM
					LANGUAGE	***SUBJECT***							
1	1	***MEASURES***	***LENGTH, MASS AND CAPACITY***	***LENGTH***	-describes length using the correct vocabulary	- measures lengths. - solves problems involving length	***Measure the following (cm)*** (a) (c) (b) ***solving problems involving length*** AB =4cm, AD = 12cm and CD = 5cm. Find AC 4cm A B C D	demonstration orientation	measuring length in cm, mm	**Effective communication** problem solving decision making critical thinking	rulers tape measure	P.7 curriculum Understanding mtc book 7 page 12	
	2			***Conversion of***	- reads quantities involving	- compares m and cm correctly.	***Example 1*** Change 4 metres to cm 1m = 100cm	guided discovery	changing cm to metres	**Effective communication**	rulers	P.7 curriculum	

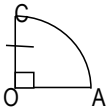
				metres to cm.	cm and m correctly. - constructs meaningful sentences involving cm and m	- converts cm to m correctly - converts m to cm correctly	4m = 4x100m = 400cm **Example II** Convert 3.4m to cm 1m = 100cm 3.4m = 3.4 x 100cm = 3.4 x 100cm 10 = 34 x 10cm = 340cm ***Example III*** Change 600cm to m 100cm = 1metre 600cm = 600cmx1m 100cm = 6x1m = 6metres	think pair share question and answer techniqu e	and the reverse	problem solving decision making critical thinking	tape mea sure	Understan ding mtc book 7 page 12	
	3		***LENG TH, MASS AND CAPA CITY***	***Additio n of units of length***	- relates units of length using the correct vocabulary.	- adds cm and mm without re-grouping correctly. - adds cm to mm with re-grouping correctly.	**Example I** Add: 5cm 3mm +4cm 5mm 9cm 8mm **Example II** Add: cm mm 6 4 +5 3 11 7 **Example III** Add: cm mm 16 6 +24 8 41 4 1cm = 10mm	guided discover y	adding cm and mm	**Effective communi cation** problem solving decision making critical thinking	ruler s set squ ares rope s tape mea sure	P.7 curriculum Understan ding mtc book 7 page 12	
	4			***Subtrac tion of***	- relates units of	- subtracts metres and cm	**Example I** Subtract: **m cm** 54 80	question and answer	subtractio n of cm	**Effective communi cation**	ruler s	P.7 curriculum	

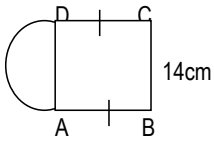
				metres and cm	length correctly	with out re-grouping - subtract cm and metres with regrouping	- 21 46 33 34 (80-46) = 34 (54-21) = 33 **Example II** **m cm** 18 20 - 4 30 13 90 1m = 100cm (20-30) = (20+100)-30 = 120-30 = 90 (18-1) -4 = 17-4 = 13		and metres	problem solving decision making critical thinking	tape measures	Understanding mtc book 7 page 16	
	5			***Multiplication of units length by a whole number or a fraction***	- constructs meaningful sentences using units of lengths.	- multiplies given units of length by a whole no. - multiplies given units of length by a given fractions	***Multiplication by a whole no.*** Work out: a) 7cm x 4 = 28cm b) **cm mm** 14 6 (6x3)=18 x 3 18÷10= 43 8 1 r 8 (14x3)+1 =42+1 =43 Multiplication by a fraction Work out: 10km x ½ = ½ x 10km = 1x5km = 5km	Guided discovery	multiplying units of length by a whole no. r a fraction	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum Understanding mtc pupils book 7 page 16, 14	
	6			***Division of given lengths by a whole number***	- compares units of length using correct sentences.	- divides given lengths by a given a whole number correctly.	**Divide: 16m 64cm by5** 03 032.8 5 16m 164cm - 0 - 0 16 16 15 15	guided discovery	dividing given length by a whole number	**Effective communication** problem solving	multiplication tables	P.7 curriculum Understanding mtc pupils	

							1 14 - 10 40 40 - - =3m, 32.8cm OR 3m, 32cm, 40mm			decision making critical thinking		book 7 page 15	
	7			***Perimeter***	- describes perimeter correctly	- finds perimeter of a given figure correctly	**Perimeter of a rectangle**. Perimeter means the distance around a given surface.  10cm P =(5_1x2)+(5_2x2) = (10cm x2)+(4cmx2) = 20cm + 8cm = 28cm	guided discovery	Finding perimeter of a rectangle	**Effective communication** problem solving decision making critical thinking	counters	P.7 curriculum Functional mtc book 7 page 267	
2	1			***Perimeter of a surface***	- describes perimeter of a square correctly	- traces perimeter of a given square using a finger - finds perimeter of a given square	**Finding perimeter of a square**.  5 ½ cm perimeter P = 4x5 ½ cm P = 4x$\frac{11}{2}$cm P = 4 x$\frac{11}{2}$cm P = 2x11cm P = 22cm	guided discovery Think pair share	Finding perimeter of a square	**Effective communication** problem solving decision making critical thinking	Quadrangles in a school compound Tiles in class	P.7 curriculum Functional mtc book 7 page 267	
	2			***Perimeter of a triangle***	- describes a triangle correctly	- finds perimeter of a triangle	**Find perimeter**  6cm 10cm s_2 s_2 s_1 8cm	guided discovery	Finding perimeter of a triangle	**Effective communication** problem solving	Cut outs of triangle	P.7 curriculum	

							$P=S_1+S_2+S_2$ $= (8cm+6cm)+10cm$ $= 14cm+10cm$ $= 24cm$			decision making critical thinking			
	3				- describes a triangle correctly	- finds the missing side of a right angled triangle. - finds perimeter of a right angled triangle	 $P=S1+S2+S3$ $(S_1)^2 +(S_2)^2 =(S_3)^2$ $S^2=9cm^2$ $S_1^2+(4cm)^2=(5cm)^2$ $S^2+16cm^2=25cm^2$ $S^2+16cm^2-16cm^2=25cm^2$	guided discovery Think pair share	Finding the missing side of angled triangle Find perimeter	**Effective communication** problem solving decision making critical thinking	Chalkboard illustrations	P.7 curriculum	
	4			***Perimeter of a rhombus***	- describes a rhombus correctly	- finds perimeter of a rhombus correctly	***Find perimeter***  $a^2+b^2=c^2$ $(4cm)^2+(3cm)^2= C^2$ $16cm^2 +9cm^2 = C^2$ $25cm^2 = C^2$ $5cm = C$ side $= 5cm$ perimeter $= 4 \times side$ $= 4 \times 5cm = 20cm$	guided discovery	Finding perimeter of a combined figure	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum Mk mtc book 7 page	
	5			***Perimeter of combined figures***	- describes the given figure correctly	- finds the missing side of a combined figure.	***Find perimeter*** 4cm  5cm	Question and answer	Finding perimeter of a combined figure	**Effective communication** problem solving	Counters	P.7 curriculum Mk mtc book 5	

						- calculates perimeter of a given combined figure correctly.	w x 4m 10m w = (5m+4m)=9m x =(10m-4m) = 6m perimeters = S1+S2+S3+S4 = 10m+4m+x+5m+4m+w = (10m+4m)+(6m+5m)+(4cm+9m) = 14m+11m+13m = 25m +13m = 38metres	market stall		decision making critical thinking	Pens Fingers		
	6	***MEASUREMENTS***	***LENGTH, MASS AND CAPACITY***	***Circumference (Perimeter of a circle)***	- describes circumference of a circle. - describe diameter of a circle	- traces the circumference of a circle using a finger. - calculate the circumference of a given circle correctly.	***Find perimeter*** 14cm C = Pi x diameter = ∧ x d = 22/7 x 14cm = 22 x 2cm = 44cm	demonstration	Finding circumference of a circle given diameter	**Effective communication** problem solving decision making critical thinking	Threads Rulers	P.7 curriculum New mk book 7	
	7				- describes radius of a circle.	- finds circumference of a circle given its radiuis.	Find perimeter of a circle whose radius = 7cm 7cm C = ∧d =∧ x 2r = 22 x 2 x 7cm	Guided discovery	Finding circumference of a circle given radius	**Effective communication** problem solving decision making	Threads Rulers	P.7 curriculum New mk book 7	

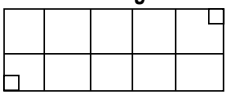
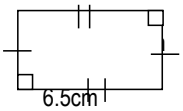
							7 = 22 x 2x 1cm = 44 x 1cm = 44cm			critical thinking			
3	1			***Perimeter of parts of a circle***	- describes given parts of a circle correctly.	- finds perimeter of parts of a circle correctly.	***Perimeter of a semi circle.*** A 7cm 7cm B Perimeter = AB + AB = ½ c + d = (½ x πx2xr)+d = (½x22x2x7cm)+14cm 7 = 22cm + 14cm = 36cm	Guided discovery	Finding perimeter of a semi-circle	**Effective communication** problem solving decision making critical thinking	threads rulers	P.7 curriculum New mk book 7	
	2			***Perimeter of a quadrant***	- finds perimeter of a quadrant correctly.	- finds perimeter of a quadrant correctly.	***Find perimeter*** C A 7cm B P = BC + r + r = (¼ of c) + r + r = ¼ x ∧x2xr)+ r +r =¼x22x2x7cm)+7c+7cm 7 = 11cm + 4cm = 25cm	Guided discovery	Finding perimeter of a quadrant	**Effective communication** problem solving decision making critical thinking	rulers	P.7 curriculum New Mk book 7	
	3			***Perimeter of combined figures***	- describes given combined figures correctly.	- finds the distance around a given combined figure.	***Find perimeter***  P = AC + OA + OC	Guided discovery	Finding perimeter of combined figures	**Effective communication** problem solving decision making	Chalkboard illustrations	P.7 curriculum New Mk book 7	

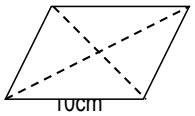
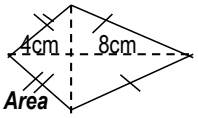
							(¼ of c) + r + r (¼ x^x2x^)+r+r (¼ x22x2x7cm)+7cm+7cm 7 = (11x1cm)+14cm = 11cm + 14cm = 25cm			critical thinking			
	4				- describes given combined figures correctly.	- Calculates perimeter of given combined figures correctly	***Find perimeter***  P =AD+DC+CB +BA P=(½ of c) + 3xside P=(½ x ^d) + 3x14cm P= (½ x22 x14cm)+42cm 7 P = 22cm + 42cm P = 66cm	Guided discovery	Finding perimeter of combined figures	**Effective communication** problem solving decision making critical thinking	rulers	P.7 curriculum New Mk book 7	
	5			***WEIGHT*** ***Changing kg to grams***	- describes units used in measuring weight correctly.	- changes kilograms to grams correctly.	***Changing kg to grams***. Change 6kg to grams. Kg Hg Dg g dg cg mg 1 0 0 0 1kg = 1000g. 6kg = 6x1000g = 6000g. ***Change 5.43kg to grams.*** 1kg = 1000g 5.43kg = 5.43x1000g	guided discovery	changing kg to grams	**Effective communication** problem solving decision making critical thinking	weighing scale	P.7 curriculum Understanding mtc book 7 page 22	

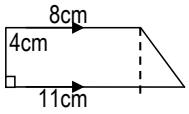
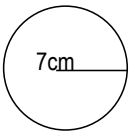
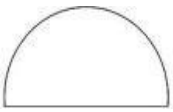
							= 543 x 1000g 100 = 543 x 10g = 5,430 grams						
	6			***Changing grams to kgs.***	- compares kgs and grams correctly.	- estimates weight of given matter. - changes kg to grams correctly.	***Changing grams to kgs.*** change 1643 grams to kgs. 1000g = 1kg 1643g = 1643g 1000g = 1.643 kg proceed to fractions	guided discovery	changing grams to kg	**Effective communication** problem solving decision making critical thinking	weighing scale	P.7 curriculum Understanding mtc book 7	
	7			***Changing tonnes to kgs***	- describes a tone correctly.	- compares kgs and tones correctly.	***Change 4 tonnes to kgs.*** Thus: 1 tonne = 1000kg 2 tonnes = 2x1000kg 2,000kg Change 3 ¼ tones to kg Thus: 3 ¼ tone = 1000kg = 13 x 1000kg 4 = 13 x 250kg = 3,250kg	guided discovery brain storming market stall	changing tones to kg	**Effective communication** problem solving decision making critical thinking	school truck	P.7 curriculum Understanding mtc book 7 page 22	
4	1			***Changing kg to tonnes***	- compares tones and kgs	- changes kgs to tones correctly.	***Change 530,000kg to tones.*** 1000kg = 1 tonne 530,000kg = 530,000kg 1,000,000g = 530tonnes = 530t		Changing kgs to tones (t)	**Effective communication** problem solving decision making	weighing scale	P.7 curriculum Understanding mtc book 7 page 21-22	

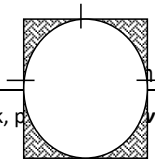
										critical thinking			
	2			***Changing grams to tonne and vice versa***	- compares grams with tones correctly.	- changes grams to tones correctly. - changes tones to grams correctly.	***Changing gm to tones*** a) 345,000gm 1,000,000g = 1 tonne 345,000g = 345,000g 1,000,000g = 0.345 tonnes Changing to grams. a) 46 tonnes 1 tonne = 1, 000,000 46 tonne=46x1,000,000g = 46,000,000grams	Question and answer Orientation	Changing grams to tones Changing tones to grams	**Effective communication** problem solving decision making critical thinking	Conversation tables	P.7 curriculum Understanding mtc book 7 page 21-22	
	3			***Addition of tonnes, kg and grams***	- estimates weight of given matter in tones, kg and grams	- adds tones, kgs and gram correctly.	***Addition of t, kg and g*** a) t kg g 12 370 480 + 17 840 346 30 210 826 1kg = 1000g 1 tonne = 1000kg 1 tonne = 1000x1000g = 1, 000, 000grams 480 370 | 12 +346 +840 | 17 826g 1210kg | +1 30 t	guided discovery	Addition of tones, kg and grams with re-grouping	**Effective communication** problem solving decision making critical thinking	counters	P.7 curriculum Understanding mtc book 7 page 22	
	4			***Subtraction of tonnes, kg and grams***	- explain the relationship among tones, kg and grams correctly.	- subtracts to kg and g correctly.	***Subtract*** a) **t kg g** 5 100 804 - 4 840 123 11 530 681 1t = 100kg	guided discovery	subtracting tones, kg and grams	**Effective communication** problem solving	Conversation tables	P.7 curriculum Understanding mtc book 7 page 22	

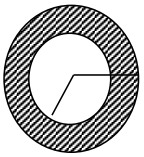
							1kg = 1000g 1t = 1, 000, 000g 370+1000kg 804 1370kg 15-4 -123 - 840kg = 11 681 530	think pair share		decision making critical thinking			
	5			***Multiplication of tonnes, kg and grams by a whole number***	- relates tones, kg and grams	- multiplies to kg and grams by a whole number correctly.	**Work out:** t kg g 4 348 277 x 12 49 179 324 1t = 1000kg 1t = 1, 000,000g 1kg = 1000g 277 x 12 =3324 324g | 348 x 12 4176 + 3 4179kg 179kg | 4 x 12 48 + 1 49t	guided discovery market stall	Multiplication of t, kg and g by a whole number	**Effective communication** problem solving decision making critical thinking	Conversation tables	P.7 curriculum Understanding mtc book 7 page 22	
	6			***Word problems involving conversation of quantities of weight***	- reads given words problems correctly	- solves given problems involving changing quantities of mass to a required unit correctly.	Alex bought 4.5kg of carrots, 2kg of meat, 2.5 kg of cabbage, 1.5 kg of flour. How heavy was the load in grams. 4.5kg+2kg+2.5kg+1.5kg+3kg = 13.5kg 1kg = 1000g 13.5kg = 13.5x1000g 13,500kg	whole sentence method	guided discovery	**Effective communication** problem solving decision making critical thinking	conversation tables	P.7 curriculum Understanding mtc book 7 page 23	
	7			***Word problems involving mass***	- reads given word problems correctly.	- solves given problems involving mass and average	***Of the type:*** The average weight of 7 girls is 48kg. Four of the girls weigh of each of the remaining girl if they weigh the same.	guided discovery	Solving word problems involving average	**Effective communication** problem solving	multiplication	P.7 curriculum Understanding mtc	

				and average .	- interprets given word problems correctly.		***Total weigh (7 girls)*** 7 x 48kg = 336kg ***Weight of 4 girls*** (45+42+50+51)kg = 188kg ***Weight of 3 girls*** 336kg-188kg=148kg ***Weight of each girl*** 148kg÷3 =49.33 = 49.33kgs		and mass.	decision making critical thinking	tables	book 7 page 23	
5	1			***AREA. area of quadrilaterals.***	- recognises a given quadrilateral correctly. - explains area correctly	- names the given quadrilateral correctly. - calculates the area of a quadrilateral correctly.	***Area of a rectangle***  Area =length x width = 5units x 2 units = 10 square units  6.5cm Area =length x width = 6.5cm x 3.6cm = 65cm x 36cm 10 10 = 2340cm^2 100 = 23.4cm^3 proceed to area of a square.	guided discovery	finding area of a rectangle	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum East African Mathematics book 5 page 139 Improve your mtc standard 8 page 85	
	2			***Area of a***	- describe a parallelogram correctly.	- calculates area of a given	***Area of a parallelogram.*** 12cm 6cm	guided discovery	finding area of a	**Effective communication**			

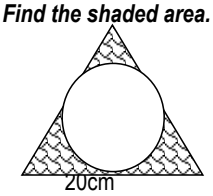
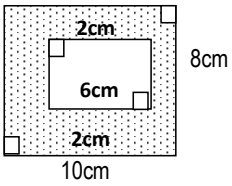
				parallelogram		parallelogram correctly.	□ Area = base x height = 12cm x 6cm = 72cm^2		parallelogram.	problem solving decision making critical thinking			
	3			***Area of rhombus***	- recognises a rhombus	- calculate the area of a given rhombus	***Area of a rhombus***  10cm Area = ½ d_1 x d_2 = ½ x 16cm x 12cm = ½ x 16cm x 12xcm = 8cm x 12cm/96cm^2 **OR** Area = (½xbxh) x 4 =(½ x 8cmx6cm) x4 = (4cm x 6cm) = 24cm^2 x 4 = 96cm^2	guided discovery	finding area of a rhombus	**Effective communication** problem solving decision making critical thinking	chalkboard illustrations	P.7 curriculum Mk book 7 page 359	
	4			***Area of a kite***	- recognises a kite on sight correctly.	- calculates the area of a given kite correctly.	***Area of a kite***  4cm 8cm ***Area*** = ½ x d1 x d2 = ½ x 12cm x 8cm = 1 x 6cm x 8cm = 48cm^2 ***OR*** A= (½ bxh)+(½xbxh)	guided discovery small groups jigsaw	finding area of a kite	**Effective communication** problem solving decision making critical thinking	cut outs of kites	P.7 curriculum Mk book 7 page 362	

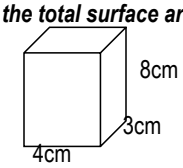
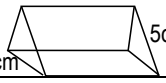
							= (½ x 8cmx4cm)+(½ x 8cmx8cm) = (4cmx4cm)+(4cmx8cm) = $16cm^2$ + $32cm^2$ = $48cm^2$						
	5			***Area of a trapeziu m***	- recognises a trapezium on sight	- names parts of a rhombus correctly. - calculates area of a trapezium correctly.	***Area of a trapezium***  Area = ½ h (a+b) = ½x4cm(8cm+11cm) = 2cm x 19cm = $38cm^2$ see an isosceles trapezium also	group discussi on demonst ration	finding area of a trapeziu m	**Effective communi cation** problem solving decision making critical thinking		P.7 curriculum New mk book 7 page 364	
	6			***Area of a circle***	- describes a circle correctly.	- recognises a circle correctly. - calculates the area of a circle correctly.	***Area of a circle***  Area = $\wedge r^2$ = $\wedge$ x r x r = $\frac{22}{7}$ x 7cm x 7cm = 22 x1cm x 7cm = 22cm x 7cm = $154cm^2$ show the origin of $\wedge r^2$	demonst ration	finding area of a trapeziu m	**Effective communi cation** problem solving decision making critical thinking		P.7 curriculum New mk book 7 page 364	
	7			***Area of parts of a circle***	- describes given parts of a circle correctly.	- recognises parts of a circle correctly	***Area of a semi-circle***  	guided discover y jigsaw	finding area of a semi-circle	**Effective communi cation** problem solving	cut outs of sem i	P.7 curriculum	

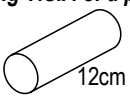
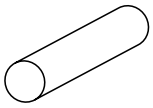
							Area = ½ of $\wedge r^2$ = ½ x $\wedge$ x r x r = ½ x $\frac{22}{7}$ x $\frac{14}{2}$cm x $\frac{14}{2}$cm = 1x11x1cmx7cm = $7cm^2$ proceed to area of a quadrant			decision making critical thinking	circles		
6	1			***Area of combined figures involving parts of a circle***	- recognises combined figures correctly. - explains the combination of given figures correctly.	- recognises combined figures correctly.	***Find area*** 14cm A B 7cm ***Area of B*** = l x w =14cm x 7cm = $98cm^2$ ***Area of A*** = ¼ of $\wedge r^2$ = ¼ x $\frac{22}{7}$x7cmx7cm = $\frac{11cm \times 7cm}{2}$ = $\frac{77}{2}cm^2$ = 38 ½ cm^2 ***Total area*** = $98cm^2$ + 38 ½ cm^2 = 136 ½ cm^2	Guided discovery	finding area of combined figures	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum Mk book page 389	
	2			***Area of shaded parts involvin***	- explains the layout of a given	- recognises the shaded region correctly.	***Find area f the shaded part.*** 	guided discovery		**Effective communication**		P.7 curriculum New Mk pupils	

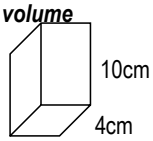
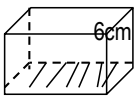
				g concept of a circle	figure correctly.	- finds area of shaded regions correctly.	***Area of a square.*** = s x s = 14cm x 14cm = 196 cm^2 ***Area of a circle*** = $\wedge r^2$ = $\frac{22}{7} \times \frac{14}{2}cm \times \frac{14}{2}cm$ = 11x1cmx14cm = $154cm^2$ ***Shaded area*** = $196cm^2 - 154cm^2$ = $42cm^2$ Allow more practice			problem solving decision making critical thinking		book 7 page 390	
	3			***Shaded part involving concept of area of a circle.***	- explains the layout of the figure given correctly.	- recognises the shaded area correctly. - calculates the shaded area correctly.	***Find the area of the shaded region.***  Area of outer circle $A = \wedge r^2$ $= \wedge \times r \times r$ $= \frac{22}{7} \times 14cm \times 14cm$ = 22x2cmx14cm = 44cm x 14cm = $616cm^2$ Area of inner circle $A = \wedge r^2$	guided discovery	finding area of shaded region n a circle	**Effective communication** problem solving decision making critical thinking	circles	P.7 curriculum New Mk book 7 page 391	

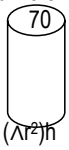
							= 22 x 7cm x 7cm 7 = 22cm x 7cm = 154cm^2 Shaded area = 616cm^2 – 154cm^2 = 462cm^2						
	4			***Triangles***	- describes a given triangle by property (ies)	- finds the missing side of a triangle. - finds the area correctly.	***Find h in triangle*** ½xbxh = ½xbxh ½x10cmx6cm = ½x12cm xh 5cm x 60cm = 6cm x h 6cm 6cm h = 5cm	guided discovery	finding the height or base of a triangle by comparing area.	**Effective communication** problem solving decision making critical thinking	cut out of triangle	P.7 curriculum New Mk book 7 page 352-354	
	5				- explains properties of a triangle correctly.	- finds the missing side using shown properties correctly. - calculates the area of the triangle	***Find the value of x*** *10cm* *x* *x* a^2 + b^2 = c^2 x^2 +(8cm)^2=(10cm)^2 x^2+64cm^2 = 100cm^2 x^2+64cm64cm2=100cm^2-64cm^2 x2 = 36cm2 x = 6cm Area = ½ x b x h = ½ x (x+2) x8cm = ½ x (6cm+6cm)x64cm^2 = ½ x 12cm x 8cm = 48cm^2	guided discovery	finding missing length of a given triangle.	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum New Mk book 7 page 354	

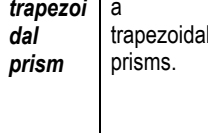
	6			***Shaded area involving triangle***	- explains the layout of the given figure correctly.	- recognises the shaded region correctly. - calculates the area of the shaded region correctly.	***Find the shaded area.***  20cm ***Area of a triangle*** = ½ x b x h = ½ x 20cm x 18cm = 10cm x 18cm = 180cm^2 ***Area of a circle*** = ∧ r^2 = $\frac{22}{7}$x7cmx7cm = 22 x 7cm^2 = 154cm^2 ***Shaded area*** 180cm^2 – 154cm^2 = 26cm^2	guided discovery	finding area of the shaded region involving area of a triangle and a circle	**Effective communication** problem solving decision making critical thinking	multiplication tables	P.7 curriculum New Mk book 7 page 393	
	7			***Shaded area involving rectangles.***	- recognises and explain properties of a given rectangle.	- recognises given dimensions correctly. - finds area of the shaded region correctly	***Find the shaded area***  ***Outer rectangle*** = length x width = 10cm x 8cm = 80cm^2 ***Inner rectangle*** = length x width	guided discovery	finding area of the shaded region	**Effective communication** problem solving decision making critical thinking	cut outs of rectangles rulers	P.7 curriculum New mk book 7 page 358	

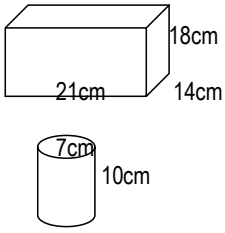
							=6cm x (8cm-2cm-2cm) = 6cm x 4cm = $24cm^2$ ***Shaded area*** = $80cm^2 – 24cm^2$ = $56cm^2$						
7	1			***Total surface area of a cube***	- explains properties of a cube.	- calculates total area of the faces of a cube correctly.	***Find total surface area.*** it has 6 congruent faces ***T.S.A*** = (S x S) x 6 = (4cm x 4cm) x 6 = $16cm^2$ x 6 = $96cm^2$ Find the total surface area of a cube without a lid. T.S.A = 6 – 1 (S x S) = 5 x S x S = 5 x $side^2$	guided discovery	finding total surfaces area of a cube	**Effective communication** problem solving decision making critical thinking	cubes	P.7 curriculum New Mk book 7 page 398	
	2			***Total surface area of a cuboid.***	- explains properties of a cuboid correctly.	- recognises properties of a cuboid correctly. - calculates total surface area of the cuboid correctly.	***Find the total surface area***  ***T.S.A*** = (lxw)x2+(lxh)x2+(whx2) =(4cmx3cm)x2+(4cmx8cm)x2+(3cmx8cm)x2 = $12cm^2x2+32cm^2x2+24cm^2x2$ = $24cm^2 +64cm^2+48cm^2$ = $136cm^2$	guided discovery	finding total surfaces area of a cuboid	**Effective communication** problem solving decision making critical thinking	cuboids	P.7 curriculum New Mk book 7 page 197	
	3			***Total surface area of a***	- explains properties of a cuboid correctly.	- calculates total surface area of a	***Find total surface area***  	guide discovery	finding total surfaces area of a	**Effective communication**	models of trian	P.7 curriculum New Mk book 7	

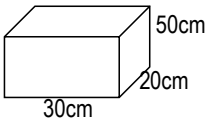
				triangular prism.		cuboid correctly.	10cm Two triangular faces and 3 rectangular faces. ***T.S.A*** = (½ x h)x2+(lxw)+(lxw)+(lxw) = (½ x 4cm x3cm)x2 + (10cmx4cm)+(5cmx10cm)+(10cm x3cm) = $6cm^2$x2+$40cm^2$+ $50cm^2$ + $30cm^2$ = $12cm^2$ + $120cm^2$ = $122cm^2$ Allow enough practice involve pythagoras theorem.	jigsaw	triangular prism	problem solving decision making critical thinking	gular prism	page 399-400	
	4			***Total surface area of a cylinder***	- explains properties of a cylinder (pipe)	- calculates total surface area of pipe.	***Finding T.S.A of a pipe***  12cm Radius = 7cm T.S.A = c x h = 2∧r x h = $2x\frac{22}{7}x7cmx12cm$ = $44x12cm^2$ = $528cm^2$	guided discovery	finding total surfaces area of a pipe	**Effective communication** problem solving decision making critical thinking	cut outs pipes pipes conduites cylinder	P.7 curriculum New Mk book 7 page 401	
	5				- recognises properties of a cylinder open at one end.	- calculates total surface area of a cylinder open at one end.	***Find the total surface of a cylinder open one end.***  T.S.A = $∧r^2$ + c +h = ($\underline{22}$xrxr)+2x∧xrxh	guided discovery	finding total surfaces area of a cylinder open at one end	**Effective communication** problem solving decision making	cylinder	P.7 curriculum New Mk book 7 page 401	

							7 = (22x7cmx7cm)+(2x22x7cm x10cm = (22x1cmx7cm)+(2x22x1cmx10cm) = 22cm x 7cm + 44cm x 10cm = 154cm^2 +440cm^2 = 594cm^2			critical thinking			
	6				- recognises properties of a cylinder closed at both ends.	- calculates total surface area of a cylinder closed at both ends.	***Find T.S.A***  cxh T.S.A= 2∧r^2 + c x h = (2x22x7cmx7cm)+2x22x7cmx12cm = (44cmx7cm)+44cmx12cm) = 308cm^2 + 528cm^2 = 836cm^2	guided discovery	finding total surfaces area of a cylinder closed at both ends.	**Effective communication** problem solving decision making critical thinking	cylinder	P.7 curriculum New Mk book 7 page 401-402	
	7			***Volume***	- explains properties of a cuboid correctly.	- calculates volume of a cuboid correctly.	***Find volume***  10cm 4cm 5cm V = (L x w) x h = (5cmx4cm)x 10cm = 20cm^2 x 10cm = 200cm^3	guided discovery	finding total surfaces area of a cuboid.	**Effective communication** problem solving decision making critical thinking	cuboids	P.7 curriculum MK book 7 page 403	
8	1				- recognises a cube. - spells out properties of a cube.	- calculates the volume of a cube correctly.	***Volume of a cube (Hexahedron)***  6cm V = (S x S)x S	guided discovery	finding volume of a cube	**Effective communication** problem solving	cubers rulers	P.7 curriculum Understanding mtc book 7 page 200	

							= (6cmx6cm)x6cm = 36cm^2 x 6cm = 216cm^3			decision making critical thinking			
	2				- explains features of a cylinder correctly.	- calculates volume of a cylinder correctly.	***Volume of a cylinder***  V = (Λr^2)h = (Λxrxr)xh =($\frac{22}{7}$x70cmx70cm)x100cm = (220cmx70cm)x100cm = 154000cm^2 x 100cm = 1,540,000cm^3	guided discovery	finding volume of a cube	**Effective communication** problem solving decision making critical thinking	cubes rulers	P.7 curriculum Understanding mtc std 7 page 195	
	3				- explains features of a cone	- calculates the volume of a cone (circular pyramid) correctly.	***Volume of a circular based pyramid (cone)***  V = ($^1/_3$ Λr^2) x h = ($^1/_3$xΛxrxr)xh = ($^1/_3$x$\frac{22}{7}$x7cmx7cm)x10cm = 154cm^2 x 10cm = 1540cm^3 V=513 $^1/_3$ cm^3	guided discovery	finding volume of a cone	**Effective communication** problem solving decision making critical thinking	cones	P.7 curriculum	
	4			***Volume of a triangular prism***	- spells out features of a triangular prism correctly.	- calculates volume of a triangular prism correctly.	***Volume of a triangular prism.*** 3cm 4cm 8cm	guided discovery	finding volume of a triangular prism	**Effective communication** problem solving	triangular prism	P.7 curriculum New MK book 7	

							V = (½ bh)xl = (½ x 4cmx3cm)x8cm = 6cm^2 x 8cm = 48cm^3			decision making critical thinking	(real object)		
	5			***Volume of a trapezoidal prism***	- spells out features of a trapezoidal prisms. 	- calculates volume of a trapezoidal prisms correctly	***Volume of a trapezoidal prism.***  6cm 3cm 8cm 10cm Volume V = ½ h(a+b)xL = ½ x 3cm (6cm+10cm)x8cm = ½ x 3cm x 16cm x 8cm = 1x3cm x 8cm x 8cm = 3cm x 64cm^2 = 192cm^3	small group discussion	finding volume of a trapezoidal prisms	**Effective communication** problem solving decision making critical thinking	models of trapezoidal prism	P.7 curriculum	
	6			***changing cm^3 (cc) to litres***	- relates cm^3 to litres correctly.	- expresses cm^3 to litres correctly.	***Changing cm^3 to litres*** a) Change 1500cm^3 to litres. 1000cm^3 = 1 litre 1500cm^3=$\frac{1500cmx1L}{1000cm^3}$ = 1.5litres b) Express 300,000cm^3 as litres 100cm^3 = 1litre 300,000cm^3 =$\frac{300,000cm^3}{1000cm3}$ = 300 litres	guided discovery jigsaw	changing cm^3 to litres	**Effective communication** problem solving decision making critical thinking	a cube of 1000cm^3 volume	P.7 curriculum Understanding mtc std 7 page 200	
	7			***Packing cuboids or***	- explains words related to	- finds number of layers correctly.	***How many small boxes can fill the big box?***	Orientation	packing cuboids in a big box	**Effective communication**	boxes of diffe	P.7 curriculum	

				cubes in a box	packing correctly.	- finds how many items can fill another - finds how amny items fills only the first layer. - finds the remaining space after packing.	No. of small boxes. = L x W x H l w h = 16cm x 13cm x15cm 3cm 4cm 5cm = (5x3)x3 = 15x3 = 45boxes			problem solving decision making critical thinking	rent sizes	New Mk book 7 page 410	
9	1			***Packing cylinder in a box***	- names parts of a cylinder correctly.	- packs given cylinder in a box correctly. - finds how many cylinders cover the first layer. - finds the remaining space after packing.	***Packing cylinders in a box***  ***a) How many cylinders fill the first layer?*** = L x W = 21 x 14 d d 7 7 = 21cm x14cm = 3 x2 7cm 7cm = 6 ***b) How many layers can be packed?*** = H = 18cm h 10cm = 18cm = 1 layer 10cm	guided discovery market stall	packing cylinders in a box	**Effective communication** problem solving decision making critical thinking	boxes cylinder	P.7 curriculum New Mk book 7 page 411	

	2			***Finding capacity in litres***	- explain the meaning capacity correctly	- calculates capacity in litres correctly.	***Finding capacity in litre.***  V= (LxW)xH =(30cmx20cm)x50cm = 600cm^{2}x50cm = 3000cm^3 ***Capacity*** 1000cm^3 = 1 litre 3000cm^3 $\frac{3000cm^3}{1000cm^3}$ = 30 litres	guided discovery	finding capacity in litres	**Effective communication** problem solving decision making critical thinking	tins	P.7 curriculum Understanding mtc std 7 pages 200-202	
	3	***ALGEBRA***	***ALGEBRA***	***Algebraic expressions***	- reads given algebraic sentences correctly.	- interprets given statements correctly. - expresses given statements in algebraic notation.	***Algebraic notation*** a) **Sum of a and 3** = a + 3 b) **divide m by 4** = $\frac{m}{4}$ c) **double the sum of a and 4** 2 (a +4) d) Half od x = ½*x* e) **increase m + 3** = m + 3	guided discovery	changing statements to algebraic notation	**Effective communication** problem solving decision making critical thinking		P.7 curriculum Mk book 7 page 431	
	4			***Subtraction in algebraic expression***	- reads a given problem correctly.	- finds the value of a given term by substituting	If a =2, y=8 and x=4 ***Evaluate:*** i) 5a+8 = 10+8 =(5xa)+8 =(5x2)+8 = 18 ii) 18 – 3y = 18-(3xy) = 18-(3x8)	guided discovery	subtraction of numbers for letters	**Effective communication** problem solving decision making	counters	P.7 curriculum Functional primary maths book 7 page 299	

							= 18-24 = -6			critical thinking			
	5			***Equations***	- reads given equations correctly.	- interprets given equations correctly. - solves given equations correctly.	***Solve the following*** a) x +3 = 5 x+3-3 = 5-3 x = 2 b) 2x – 3 = 5 2x-3+3 = 5+3 2x = 8 c) k – 15 =0 k – 15+15 = 0+15 k =15	guided discovery	solving equations	**Effective communication** problem solving decision making critical thinking	counters	P.7 curriculum Understanding mtc book 7 page 126	
	6			***Equations involving brackets***	- reads a given equations correctly.	- solves a given equation involving brackets correctly.	***Equations involving brackets***. a) 3(m+4) = 27 3m+12 = 27 3m+12-12 = 27-12 3m = 15 $\frac{3m}{3} = \frac{15}{3}$ m = 5	guided discovery		**Effective communication** problem solving decision making critical thinking	multiplication tables counters	P.7 curriculum Understanding mtc std page 126	
	7			***Equations involving fraction***	- reads a given equation correctly.	- solve a given equation involving brackets correctly.	***Equations with fractions*** a) $^1/_3$ x – 7 = 9 $^1/_3$ x – 7+7 = 9+7 $^x/_3$ = 16 $\frac{x}{3}$ x 3 = $\frac{16}{1}$ x3 x = 48	guided discovery	solving equations involving fractions	**Effective communication** problem solving decision making critical thinking	counters tables	P.7 curriculum Understanding mtc std 7 pages 127-128	
10	1			***Equations involving***	- reads a given equation correctly.	- solves a given equation involving brackets and	***Equations involving brackets and fractions*** a) $^2/_5$ (3k-$\frac{10}{4}$)=5	guided discovery	solving equations involving fractions	**Effective communication**	multiplication	P.7 curriculum Understanding mtc	

				fraction and bracket		fractions correctly.	$^2/_5$ x 3k – $\frac{10}{4}$ x$^2/_5$ = 5 $\frac{6k}{5}$ – $\frac{10}{10}$ = 5 $\frac{2x6k-(1x10)}{10}$ = 5 $\frac{10x(12k-10)}{10}$ = 5x10 12k – 10+10 = 50+10 12k = 60 $\frac{12k}{12}$ = $\frac{60}{12}$ k = 5	market stall	and brackets	problem solving decision making critical thinking	tables	std 8 page 129	
	2			***Solving problems using algebra***	- reads a given problem correctly.	- interprets a given problem correctly. - solves a given problem using algebra correctly.	***Solving problems using algebra***. a) Think of a number multiply it by 3, add 6 the result is 27. What is the no.? let the no be w wx3+6+27 3w=21 3w+6-6=27-6 3 3 3w = 21 w = 7 The number is 7	guided discovery	solving problems using algebra	**Effective communication** problem solving decision making critical thinking	counters	P.7 curriculum Functional book 7 page 308-310	
	3			***Solving inequalities***	- reads a given inequality correctly.	- interprets a given inequality correctly. - solves a given inequality correctly.	***Solve:*** a) x + 6 > 11 x+6-6>11-6 x>5 b) 2 (x+1)>4 2xx+2x1>4 2x+2>4 2x+2-2>4-2 2x>2 $\frac{2x}{2}$ > $\frac{2}{2}$ = x > 1	guided discovery	solving inequalities	**Effective communication** problem solving decision making critical thinking	counters	P.7 curriculum Functional book 7 page 311 MK book 7 450, 454	

	4			***inequalities and solution sets***	- reads the given problem aloud correctly.	- interprets the given problem correctly. - finds the solution set for the given inequality.	***Solve and find the solution set.*** a) a – 2 < 2 a – 2+2 < 2+2 a < 4 a is an integer less than 4. -1 1 0 1 2 3 4 a = {- - - 0, 1, 2, 3}	guided discovery	finding solution sets for inequalities	**Effective communication** problem solving decision making critical thinking	number line	P.7 curriculum New Mk book 7 pages 448, 449, 450, 451-454	
	5				- reads the given problem correctly.	- interprets given problems correctly. - finds the integral values of a given unknown in an inequality correctly.	***Finding integral values.*** Find the integral values of x between -4 and -8. Which make the inequality? x+2< - 1 true x+2< - 1 x+2-2<-1-2 x < -3 x={-9, -6, -5, -4, -3} x={-7, -6, -5}	guided discovery	finding integral values of an unknown in an inequality	**Effective communication** problem solving decision making critical thinking	number line	P.7 curriculum Functional mtc book 7 page 314	