Plan of Work

Mathematics

Grade 7
For examination in 2024

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Contents

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Introduction

Prescribedtextbooks:

- Mathematics Grade 7 [Code: MIE7]
- Worked Examples Maths – Form One (Edi. 2015 or 2016) [Code: WEM1]
- Specimen Papers for Grade 7

Recommended prior knowledge

Learners beginning this course are expected to have knowledge of the following topics:

	Topic
1	Numbers
2	Geometry
3	Measure
4	Graphs

Websites and videos

This plan of work includes website links providing direct access to internet resources. Modern College is not responsible for the accuracy or content of information contained in these sites. The inclusion of a link to an external website should not be understood to be an endorsement of that website or the site's owners (or their products/services).

The website pages referenced in this plan of work were selected when the plan of work was produced. Other aspects of the sites were not checked and only the particular resources are recommended.

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FIRST TERM [10/01/2024 – 05/04/2024]

Topic: 1.1 Numbers,Factors and Multiples

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Understand different type of numbers;	**[Book MIE7]:** To study notes (pg 1 – 2)**.**	**[Book MIE7]:** pg 2 ex 1.1 nos 1, 2.	**[Book MW1]:** pg 2 no 1	Classification of the different types of numbers (https://www.youtube.com/watch?v=9orS7coe2WI)
b) use prime numbers, prime factors and multiples;	**[Book MIE7]:** To study notes & 3 worked examples (pg 3 – 5)**.** **[WEM1]:** Unit 1; To study worked examples nos 3, 7(a), 9, 10.	**[Book MIE7]:** pg 4 ex 1.2 nos 1 – 3 ; pg 5 – 6 ex 1.3 nos 1 – 3.	**[Book MIE7]:** pg 4 ex 1.2 nos 4 – 6. **[Book MW1]:** pg 2 nos 2, 4	Prime numbers and Composite numbers (https://www.youtube.com/watch?v=jpMYfW9XziU)
c) determine the HCF and LCM.	**[Book MIE7]:** To study notes & 11 worked examples (pg 6 – 12)**.** **[WEM1]:** Unit 1; To study worked examples nos 1, 2, 4-8, 11-15.	**[Book MIE7]:** pg 7 ex 1.4 nos 1 – 4 ; pg 8 ex 1.5 nos 1 – 4 ; pg 10 ex 1.6 nos 1, 2 ; pg 12 ex 1.7 nos 1 – 3.	**[Book MIE7]:** pg 8 ex 1.5 nos 5 – 6 ;pg 12 ex 1.7 nos 4 – 5. **[Book MW1]:** pg 3 nos 3, 5-10	Prime factorisation method for finding the HCF (https://www.youtube.com/watch?v=k85IhfyP-po) Prime factorisation method for finding the LCM (https://www.youtube.com/watch?v=fwOQPaqUcpg)

Topic: 1.2Integers

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Distinguish between positive and negative integers;	**[Book MIE7]:** To study notes & 3 worked examples (pg 14 – 15).	**[Book MIE7]:**pg 15 Ex 2.1 nos 1 – 3		Understanding Integers (https://www.youtube.com/watch?v=5oHJcmYbHvA)
b) Represent positive and negative integers on a number line;	**[Book MIE7]:** To study notes & 2 worked examples (pg 16 – 17). **[WEM1]:** Unit 2; To study worked examples nos 1-4.	**[Book MIE7]:**pg 17 Ex 2.2 nos 1, 2;	**[Book MW1]:** pg 7 nos 1, 2	
c) Compare and order integers;	**[Book MIE7]:** To study notes & 1 worked example (pg 14). **[WEM1]:** Unit 2; To study worked examples no 5.	**[Book MIE7]:**pg 18 – 19 Ex 2.3 nos 1 - 5;	**[Book MW1]:** pg 7-8 nos 3, 4	

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d) Perform arithmetic operations on integers;	**[Book MIE7]:** To study notes & 7 worked examples (pg 19 – 26). **[WEM1]:** Unit 2; To study worked examples nos 6, 8, 11, 12, 14, 15.	**[Book MIE7]:**pg 20 Ex 2.4; pg 21 Ex 2.5 nos 1 – 5; **]:**pg 22 – 23 Ex 2.6 nos 1 – 3; pg 25 Ex 2.7 nos 1 – 5; pg 26 Ex 2.8	**[Book MIE7]:**pg 22 – 23 Ex 2.6 nos 4 – 6; pg 25 Ex 2.7 nos 6 – 7 **[Book MW1]:** pg 8-9 nos 5-7	● Adding and Subtracting Integers (https://www.youtube.com/watch?v=_BgblvF90UE) ● Multiplication and Division of Integers (https://www.youtube.com/watch?v=K_tPbVPfHgk)
e) Find the square root of square numbers;	**[Book MIE7]:** To study notes & 2 worked examples (pg 26 – 27).	**[Book MIE7]:**pg 27 Ex 2.9 nos 1 – 3.	**[Book MW1]:** pg 10 no 8	
f) Perform arithmetic operations mentally.	**[Book MIE7]:** To study notes & 10 worked examples (pg 28 – 31).		**[Book MIE7]:**pg 29 Ex 2.10 nos 1 – 2; pg 30 Ex 2.11; pg 31 Ex 2.12 **[Book MW1]:** pg 10 nos 9, 10	

Topic: 1.3 Order of Operations

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Perform operations according to the BODMAS convention;	**[Book MIE7]:** To study notes & 3 worked examples (pg 32– 35). **[WEM1]:** Unit 2; To study worked examples nos 7, 9, 10, 13.	**[Book MIE7]:** pg 36 Ex 3.1 nos 1 – 3	**[Book MIE7]:** pg 36 – 37 Ex 3.1 nos 4 – 8 **[Book MW1]:** pg 12-14 nos 1-7	Understanding Order of Operations (https://www.youtube.com/watch?v=dAgfnK528RA)
b) Use the commutative, associative and distributive properties of operations.	**[Book MIE7]:** To study notes (pg 38– 39).	**[Book MIE7]:** pg 38 Ex 3.2 ; pg 38 Ex 3.3 no 1	**[Book MIE7]:** pg 39 Ex 3.3 no 2.	●

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Mid First Term Assessment

Component	Time Allocation	Type	Maximum Mark
	1 hour	Short questions and structured questions	50

The Paper will consist of short and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7 first term covered till the assessment, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

Topic: 1.4Fractions and Decimals

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Demonstrate an understanding of the concept of fractions as part of a whole, as measure, as an operator, as a quotient and as a ratio.	**[Book MIE7]:** To study notes (pg 40 – 41)	**[Book MIE7] :** pg 41 – 42 Ex 4.1 nos 1 – 6		Understanding Fractions (https://www.youtube.com/watch?v=n0FZhQ_GkKw)
b) identify the types of fractions (proper, improper and mixed; .	**[Book MIE7]:** To study notes & 4 worked examples (pg 41 - 45)	**[Book MIE7] :** pg 41-42 Ex 4.1 no 7; pg 43 Ex 4.2 nos 1(a-d), 2(a-d) ; pg 45 Ex 4.3 nos 1(a-d,j),2(a-d,j),3(a-d,i),4(a),5(a, f),6(a,e)	**[Book MIE7] :** pg 43 Ex 4.2 ; pg 45 Ex 4.3 **[Book MW1]:** pg 16-17 nos 1-4	
c) compare and order fractions	**[Book MIE7]:** To study notes & 2 worked examples (pg 46 – 47)..	**[Book MIE7] :;** pg 47 Ex 4.4 nos 1(a,c), 2(a,c), 3(a,c,f), 4(a,d)	**[Book MIE7] :;** pg 47 Ex 4.4 **[Book MW1]:** pg 17 no 5	How to compare fractions (https://www.youtube.com/watch?v=KNdUJQ_qd4U)
d) add, subtract, multiply and divide fractions	**[Book MIE7] :**To study notes & 7 worked examples (pg 47 – 53).. **[WEM1]:** Unit 3; To study worked examples nos 1-3, 5, 6, 9, 12.	**[Book MIE7] :** pg 48 Ex 4.5 nos 1, 2(a,b,g,h); pg 50 Ex 4.6 ; pg 52 Ex 4.7 nos 1(a,b,h,i),2(a,b,c,e),3(a,b,f),4; pg 53 Ex 4.8 nos 1	**[Book MIE7] :** pg 48 Ex 4.5 ; pg 52 Ex 4.7 ; pg 53 Ex 4.8 nos 2 **[Book MW1]:** pg 18-19 no 6-	• Adding and Subtracting Fractions (https://www.youtube.com/watch?v=5juto2ze8Lg) • Multiplying and Dividing Fractions (https://www.youtube.c

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				om/watch?v=xB8VYrsuu 34)
e) solve word problems involving fractions	**[Book MIE7]** :To study 1 worked example (pg 54).. **[WEM1]:** Unit 3; To study worked examples nos 11, 13-15.	**[Book MIE7] :** pg 54 Ex 4.9 nos 1 – 5	**[Book MIE7] :** pg 54 Ex 4.9 nos 6 – 8 **[Book MW1]:** pg 19-20 nos 7-9	
f) demonstrate conceptual understanding of decimals including place value	**[Book MIE7]** :To study notes (pg 55 – 56)..	**[Book MIE7] :** pg 56 Ex 4.10 nos 1 – 3		Fractions, decimals and place value (https://www.youtube.com /watch?v=Mst8iZjIpFE)
g) convert fractions to decimals and vice versa	**[Book MIE7]** :To study notes & 4 worked examples (pg 56 – 58).. **[WEM1]:** Unit 3; To study worked examples nos 7, 8, 10.	**[Book MIE7] :** pg 58 Ex 4.11 nos 1,2(a,b,h,j),3(a,b,e), 4(a,b,h,i,j)	**[Book MIE7]:** pg 58 Ex 4.11 **[Book MW1]:** pg 21 nos 10, 11	
h) compare and order decimals	**[Book MIE7]** :To study 1 worked example (pg 59)..	**[Book MIE7] :** pg 59 Ex 4.12 nos 1(a,d),2(a,d),3, 4	**[Book MIE7] :** pg 59 Ex 4.12 **[Book MW1]:** pg 22 no 12	

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i) add, subtract, multiply and divide decimals	**[Book MIE7] :**To study notes & 7 worked examples (pg 60 – 63)..	**[Book MIE7] :** pg 60 Ex 4.13 nos 1 – 3; pg 62 Ex 4.14 nos 1(a,b,c),2(a,b,h), 3(a,b,h); pg 63 Ex 4.15 nos 1(a,b,h),2(a,b,f),3(a,b,f), 4(a,b,f)	**[Book MIE7] :** pg 62 Ex 4.14 ; pg 63 Ex 4.15 **[Book MW1]:** pg 22 no 13	Decimal Arithmetic (https://www.youtube.com/watch?v=kwh4SD1ToFc)
j) solve word problems involving decimals	**[Book MIE7] :**To study 1 worked example (pg 63 – 64)..	**[Book MIE7] :** pg 64 Ex 4.16 nos 1 – 5	**[Book MW1]:** pg 23 nos 14-16	

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Topic: 1.5Angles

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Recognise and use fundamental geometrical terms;	**[Book MIE7]:** To study notes (pg 66 – 67). **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).	**[Book MIE7]:**pg 67 Ex 5.1		
b) distinguish between different types of angles;	**[Book MIE7]:** To study notes (pg 67 – 68). **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).	**[Book MIE7]:**pg 68 Ex 5.2	**[Book MW1]:** pg 25 nos 1, 2	
c) identify parallel lines and transversal	**[Book MIE7]:** To study notes (pg 69). **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).	**[Book MIE7]:**pg 69 Ex 5.3		Parallel lines and transversal (https://www.youtube.com/watch?v=6RMN5Pf1fHU)

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d) ; measure and construct angles using geometrical instrument;	**[Book MIE7]:** To study notes & 3 worked examples (pg 70 – 72). **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).	**[Book MIE7]:**pg 71 Ex 5.4; pg 73 Ex 5.5 nos 1,2(a,b,e,l),3(a,c,d,e),4(a,f),5,6	**[Book MIE7]:**pg 73 Ex 5.5	How to measure angles (https://www.youtube.com/watch?v=Gzd_lsNwTOI)
e) identify complementary, supplementary, vertically opposite, corresponding, alternate and co- interior angles;	**[Book MIE7]:** To study notes (pg 74, 76, 77, 78). **[WEM1]:** Unit 6; To study worked examples nos 1-15. **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).			
f) find unknown angles using notions of complementary,supplementary, corresponding, alternate and co-interior angles.	**[Book MIE7]:** To study notes &5 worked examples (pg 74 – 79). **[Book MT1]:** To study notes & 2 worked examples (pg 65 – 68).	**[Book MIE7]:**pg 74 Ex 5.6 nos 1(a,f),2(a,f),3-8 ; pg 76 Ex 5.7; pg 79 Ex 5.8 nos 1-3,4(a,d,f,h,i),5-9, 10(a,d,i).	**[Book MIE7]:**pg 74 Ex 5.6 nos 1,2; pg 79 Ex 5.8 nos 4,10. **[Book MW1]:** pg 25-28 nos 3-6	

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Topic: 1.6Polygons

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Identify and name polygons including regular polygons	**[Book MIE7]:** To study notes (pg 84 – 86).	**[Book MIE7]:**pg 86 Ex 6.1	**[Book MW1]:** pg 30 no 1	Understanding polygons (https://www.youtube.com/watch?v=IaoZhhx_I9s)
b) Differentiate among scalene, isosceles and equilateral triangles in terms of lengths and angles;	**[Book MIE7]:** To study notes & 10 worked examples (pg 86 – 88).	**[Book MIE7]:**pg 88 Ex 6.3		Understanding triangles (https://www.youtube.com/watch?v=mLeNaZcy-hE)
c) Find unknown angles in triangles	**[Book MIE7]:** To study notes & 2 worked examples (pg 86 – 89).	**[Book MIE7]:**pg 87 Ex 6.2 no 1(i,vi); pg 89 Ex 6.4 nos 1, 2(i,-iii)	**[Book MIE7]:**pg 87 Ex 6.2; pg 89 Ex 6.4; **[Book MW1]:** pg 30-31 no 2	
d) Differentiate among different types of quadrilaterals(rectangle, square, parallelogram, rhombus, kite, trapezium, arrow head);	**[Book MIE7]:** To study notes (pg 90 – 92).	**[Book MIE7]:**pg 92 Ex 6.5	**[Book MW1]:** pg 31 no 3	
e) Find unknown angles in quadrilaterals;	**[Book MIE7]:** To study notes & 7 worked examples (pg 92 – 94).	**[Book MIE7]:**pg 94 Ex 6.6 nos 1(a,b,d,g,i),2,3.	**[Book MIE7]:**pg 94 Ex 6.6. **[Book MW1]:** pg 32-33 nos 4-7	

Topic: 1.7Length, Perimeter and Area

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Distinguish among different units of length and units of area;	**[Book MIE7]:** To study notes (pg 96, 103).	**[Book MIE7]:**pg 97 Ex 7.1; pg 104 Ex 7.7		Understanding area (https://www.youtube.com/watch?v=xCdxURXMdFY)
b) convert length and area from one unit to another;	**[Book MIE7]:** To study notes & 3 worked examples (pg 97-98, pg 104-105). **[WEM1]:** Unit 7; To study worked examples nos 2, 9. .	**[Book MIE7]:**pg 98 Ex 7.2 nos 1(a,b,c,e,g,h,j,k,l,n), 2(a,i),3(a,h),4(a,f); pg 105 Ex 7.8	**[Book MIE7]:**pg 98 Ex 7.2 **[Book MW1]:** pg 35 nos 1, 2; pg 39 no 7	
c) perform arithmetic operations involving length;	**[Book MIE7]:** To study notes & 2 worked examples (pg 98 – 99).	**[Book MIE7]:**pg 99 Ex 7.3 (a,b)	**[Book MIE7]:**pg 99 Ex 7.3(c-f)	

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d) find the perimeter and area of 2 – D figures;	**[Book MIE7]:** To study notes & 7 worked examples (pg 100 – 101, 106-116). **[WEM1]:** Unit 7; To study worked examples nos 1, 3-8, 10-15.	**[Book MIE7]:**pg 101 Ex 7.5 no 1 (a,b,f); pg 106 Ex 7.9 nos 1-7; pg 109 Ex 7.10; pg 110 Ex 7.11; pg 111 Ex 7.12; pg 112 Ex 7.13; pg 114 Ex 7.14; pg 115 Ex 7.15 nos 1(a),2.	**[Book MIE7]:**pg 101-102 Ex 7.5 no 1, 2; pg 106 Ex 7.9 nos 8-14; pg 115 Ex 7.15 no 1. **[Book MW1]:** pg 35-37 no 3; pg 41-44 no 11; pg 46-47 no 14	● Area and perimeter of square and rectangle (https://www.youtube.com/watch?v=219AtecQ4cc) ● Understanding perimeter (https://www.youtube.com/watch?v=AAY1bsazcgM)
e) solve word problems involving length, perimeter, and area.	**[Book MIE7]:** To study notes & 1 worked examples (pg 99).	**[Book MIE7]:**pg 100 Ex 7.4; pg 102-103 Ex 7.6	**[Book MW1]:** pg 38 nos 4-6; pg 40-41 nos 8-10; pg 45 nos 12, 13; pg 47 no 15	

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March Assessment

Component	Time Allocation	Type	Maximum Mark
	2 hour	Short answer and structured questions	100

The Question Paper will consist of about 20 short and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7 first term, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

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SECOND TERM [22/04/2024 – 19/07/2024]

Topic: 2.1Percentages

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) recognise the use of percentages in real life situations;	**[Book MIE7] :**To study notes & 1 worked example (pg 117 – 118).			What are percentages (https://www.youtube.com/watch?v=JeVSmq1Nrpw)
b) convert a percentage to a fraction and / or decimal and vice – versa;	**[Book MIE7] :**To study notes & 4 worked examples (pg 118 – 121).	**[Book MIE7] :**pg 118 Ex 8.1 nos 1(a,h),2(a,h); pg 119 Ex 8.2 (a,g); pg 120 Ex 8.3(a,f); pg 121 Ex 8.4(a,j), Ex 8.5 (a,d,l)	**[Book MIE7] :**pg 118 Ex 8.1; pg 119 Ex 8.2; pg 120 Ex 8.3; pg 121 Ex 8.4, Ex 8.5 **[Book MW1]:** pg 49-50 no 1-4,	
c) solve word related problems involving percentages.	**[Book MIE7] :**To study notes & 2 worked examples (pg 122).	**[Book MIE7] :**pg 122 Ex 8.6 nos 1 – 5.	**[Book MIE7] :** pg 122 Ex 8.6 nos 6 – 8 **[Book MW1]:** pg 51-52 nos 5-10	How to find the percentage of a number (https://www.youtube.com/watch?v=rR95Cbcjzus)

Topic: 2.2Ratio and Proportion

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) demonstrate understanding of ratio and direct proportion;	**[Book MIE7]:** To study notes (pg 124 – 125).			• What are ratios (https://www.youtube.com/watch?v=puku5vUCOcE) • What are proportions (https://www.youtube.com/watch?v=USmit5zUGas)
b) compare two quantities multiplicatively in terms of a ratio and proportion;	**[Book MIE7]:** To study notes & 4 worked examples (pg 125 – 126, 129-130).	**[Book MIE7]**: pg 126 – 127 Ex 8.1 no 1,2,3,4(a,l),5,6(a,h),7	**[Book MIE7]**: pg 126 – 127 Ex 8.1 no 4,6,8,9 **[Book MW1]:** pg 54 no 1	
c) solve word problems involving ratio and direct proportion.	**[Book MIE7]:** To study notes & 6 worked examples (pg 127 – 128, 129-130).	**[Book MIE7]**: pg 129 Ex 8.2 no 1 – 2; pg 131 Ex 8.3 no 1 – 6.	**[Book MIE7]**: pg 129 Ex 8.2 no 3 – 12; pg 131 Ex 8.3 no 7 – 9. **[Book MW1]:** pg 55-57 nos 2-11	Sharing in a given ratio examples (https://www.youtube.com/watch?v=jye-CY7EYfE)

Topic: 2.3Indices

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Identify and use laws of indices involving positive exponents (multiplication law, division law, power law and zero index).	**[Book MIE7]:** To study notes & 6 worked examples (pg 133 – 136).	**[Book MIE7]:** pg 132 Ex 10.1 nos 1 - 2; pg 133 Ex 10.2 nos 1 – 4; pg 135 Ex 10.3 nos 1 - 4; pg 136 Ex 10.4 nos 1 – 3; pg 137 Ex 10.5 nos 1 – 2.	**[Book MW1]:** pg 59-63 nos 1-5	• Introduction to indices (https://www.youtube.com/watch?v=ZJDb7E6aCrA) • Using the laws of indices (https://www.youtube.com/watch?v=BUJKEDqGp1U)

Topic: 2.4Money

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) decompose notes and coins;	**[Book MIE7]:** To study notes (pg 138).	**[Book MIE7]:**pg 141 Ex 11.1 nos 1 - 5; pg 145 Ex 11.2 nos 1,2	**[Book MIE7]:**pg 141 Ex 11.1 nos 6 - 10; pg 145 Ex 11.2 nos 3 – 7	● Currency conversions (https://www.youtube.com/watch?v=WDRhdtR96E0)
b) convert rupees into cents and vice versa;				
c) recognise the different currencies ($, £, €);	**[Book MIE7]:** To study notes & 1 worked example (pg 143).			
d) convert from one currrency to another (Rs, $, £, €);	**[Book MIE7]:** To study notes & 1 worked example (pg 143 – 144).	**[Book MIE7]:**pg 145 Ex 11.2 nos 1,2	**[Book MIE7]:**pg 145 Ex 11.2 nos 3 – 7	
e) solve problems involving money.	**[Book MIE7]:** To study notes & 2 worked examples (pg 139 – 142).	**[Book MIE7]:**pg 141 Ex 11.1 nos 1 - 5	**[Book MIE7]:**pg 141 Ex 11.1 nos 6 – 10 **[Book MW1]:** pg 65-70 nos 1-10	

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Topic: 2.5Time

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) express times in terms of the 12 – hour and 24 – hour clock;	**[Book MIE7]:** To study notes & 1 worked example (pg 146, 148).	**[Book MIE7]:**pg 147 Ex 12.1; pg 149 Ex 12.3 nos 1 – 3		
b) convert times from one unit to another (hour, minute, second);	**[Book MIE7]:** To study notes & 1 worked examples (pg 147).	**[Book MIE7]:**pg 147 – 148 Ex 12.2 nos 1(a,c),2(a,b),3(a,c),4, 5(a	**[Book MIE7] :**pg 147 – 148 Ex 12.2 **[Book MW1]:** pg 72-73 nos 1-4; pg 74-75 nos 7-9	
c) use GMT in practical situations;	**[Book MIE7]:** To study notes & 3 worked examples (pg 151 – 154).	**[Book MIE7]:**pg 153 Ex 12.6 nos 1 – 5; pg 154 Ex 12.7 nos 1 – 3	**[Book MW1]:** pg 73-74 nos 5, 6; pg 75 no 10	Understanding time zone (https://www.youtube.com/watch?v=X1DkiuaFCuA)
d) solve real life problems involving time.	**[Book MIE7]:** To study notes & 2 worked examples (pg 150 – 151).	**[Book MIE7]:**pg 150 Ex 12.4 nos 1 – 2; pg 151 Ex 12.5 nos 1 – 4	**[Book MIE7] :**pg 151 Ex 12.5 nos 5 – 9	Time differences (https://www.youtube.com/watch?v=SnkUkc23YC0)

Mid Second Term Assessment

Component	Time Allocation	Type	Maximum Mark
	1 hour	Short questions and structured questions	50

The Paper will consist of short and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7 first and second term covered till the assessment, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

Topic: 2.6Speed

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) demonstrate an understanding of the terms speed and average speed;	**[Book MIE7]:** To study notes & 10 worked examples (pg 155 – 1).	**[Book MIE7]:**pg 157 Ex 13.1 nos 1; pg 158 Ex 13.2 nos 1; pg 159 Ex 13.3 nos 1;	**[Book MIE7]:**pg 157 Ex 13.1 nos 3– 6; pg 158 Ex 13.2 nos 3– 8; pg 159 Ex 13.3 nos 3 – 6	• Understanding rate (https://www.youtube.com/watch?v=RQ2nYUBVvqI)
b) convert speed from one unit to another;	**[Book MIE7]:** To study notes & 3 worked examples (pg 162 – 163).	**[Book MIE7]:**pg 162 – 163 Ex 13.5 nos 1 (a,b)– 2(a,b); pg 163 Ex 13.6 nos 1 – 2.	**[Book MIE7]:**pg 162 – 163 Ex 13.5 ; pg 163 Ex 13.6 nos 3 – 5.	
c) solve real life problems involving speed (including average speed).	**[Book MIE7]:** To study notes & 7 worked examples (pg 155 – 161).	**[Book MIE7]:**pg 157 Ex 13.1 nos 2; pg 158 Ex 13.2 nos 2; pg 159 Ex 13.3 nos 2; pg 161 Ex 13.4 nos 1 – 3	**[Book MIE7]:**pg 157 Ex 13.1 nos 3– 6; pg 158 Ex 13.2 nos 3– 8; pg 159 Ex 13.3 nos 3 – 6; pg 161 Ex 13.4 nos 4 – 9 **[Book MW1]:** pg 77-84 nos 1-16	• Word problems (https://www.youtube.com/watch?v=wdL8KpF5Ov0)

Topic: 2.7Mass

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) distinguish among different units of mass: mg, g, kg and tonnes (t);	**[Book MIE7]:** To study notes (pg 164).	**[Book MIE7]:**pg 164 Ex 14.1		The metric system (https://www.youtube.com/watch?v=ZNX-a-5jGeM
b) convert mass from one unit to another;	**[Book MIE7]:** To study notes & 1 worked examples (pg 165 – 166).	**[Book MIE7]:**pg 165 - 166 Ex 14.2 nos 1(a,b,c,h),2– 4	**[Book MIE7]:**pg 165 - 166 Ex 14.2	How to convert units (https://www.youtube.com/watch?v=jqmIbcId3B0)
c) perform arithmetic operations involving mass;	**[Book MIE7]:** To study notes & 4 worked examples (pg 166 – 167).	**[Book MIE7]:**pg 167 Ex 14.3 nos 1 – 3		
d) solve word problems involving mass.	**[Book MIE7]:** To study notes & 1 worked examples (pg 168).	**[Book MIE7]:**pg 168 – 169 Ex 14.4 nos 1 – 5.	**[Book MIE7]:**pg 168 – 169 Ex 14.4 nos 6 – 9. **[Book MW1]:** pg 86-89 nos 1-7	

Topic: 2.8Algebraic expressions and algebraic equations

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) use letters to represent unknown quantities;	**[Book MIE7]:** To study notes (pg 170 – 171). **[WEM1]:** Unit 5; To study worked examples nos 2-4, 14, 15.	**[Book MIE7]:**pg 170 Ex 15.1; pg 172 Ex 15.2		Algebra basics (https://www.youtube.com/watch?v=NybHckSEQBI)
b) recognise algebraic terms, coefficients and expressions;	**[Book MIE7]:** To study notes & 2 worked examples (pg 172 – 174).	**[Book MIE7]:**pg 172 Ex 15.3; pg 173 Ex 15.4; pg 174 Ex 15.5		
c) perform addition and subtraction of algebraic expressions;	**[Book MIE7]:** To study notes & 2 worked examples (pg 174 – 175). **[WEM1]:** Unit 5; To study worked examples nos 6, 9(a), 11.	**[Book MIE7]:**pg 175 Ex 15.6; pg 175 Ex 15.7	**[Book MW1]:** pg 91-93 no 1; pg 109-111 no 9	

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d) perform multiplication and division of simple algebraic expressions;	**[Book MIE7]:** To study notes & 3 worked examples (pg 176 – 177). **[WEM1]:** Unit 5; To study worked examples no 1.	**[Book MIE7]:**pg 177 Ex 15.8; pg 177 Ex 15.9		
e) expand and simplify algebraic expressions involving brackets of the form m(x+y) where m is a whole number, fraction or decimal;	**[Book MIE7]:** To study notes & 4 worked examples (pg 178 – 179). **[WEM1]:** Unit 5; To study worked examples nos 8, 10, 12, 13.	**[Book MIE7]:**pg 178 Ex 15.10; pg 178 Ex 15.11; pg 179 Ex 15.12; pg 179 Ex 15.13	**[Book MW1]:** pg 93-96 no 2	Simplifying algebraic expressions (https://www.youtube.com/watch?v=uqKY7dK_DFQ)
f) substitute numbers in algebraic expressions;	**[Book MIE7]:** To study notes & 1 worked examples (pg 180). **[WEM1]:** Unit 5; To study worked examples nos 5, 7, 9.	**[Book MIE7]:**pg 180 Ex 15.14	**[Book MW1]:** pg 107-108 nos 8	

g) distinguish between an algebraic expression and an algebraic equation;	**[Book MIE7]:** To study notes (pg 180 – 181).	**[Book MIE7]:**pg 182 Ex 15.15		
h) demonstrate an understanding of additive and multiplicative inverses;	**[Book MIE7]:** To study notes (pg 182 – 183).	**[Book MIE7]:**pg 183 Ex 15.16		
i) solve simple linear equations involving additive and multiplicative inverse.	**[Book MIE7]:** To study notes & 4 worked examples (pg 183 – 186).	**[Book MIE7]:**pg 184 Ex 15.17; pg 184 Ex 15.18; pg 185 Ex 15.19; pg 186 Ex 15.20.	**[Book MW1]:** pg 96-106 no 3-7; pg 111-114 no10	• Solving simple equations involving addition and subtraction (https://www.youtube.com/watch?v=l3XzepN03KQ) • Solving simple equations involving multiplication and division (https://www.youtube.com/watch?v=Qyd_v3DGzTM)

Topic: 2.9Patterns and Sequences

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) Identify and complete number patterns.	**[Book MIE7]:** To study notes & 1 worked example (pg 190).	**[Book MIE7]:**pg 188 Ex 16.1 nos 1(a-d), 2,3(a-d),4,5; pg 190 – 191 Ex 16.2 nos 1 – 2; pg 192 Ex 16.3 (a,f); pg 193 Ex 16.4 nos 1,2.	**[Book MIE7]:**pg 188 Ex 16.1 nos 1,3,6; pg 190 – 191 Ex 16.2 nos 3 – 4; pg 192 Ex 16.3; pg 193 Ex 16.4 nos 3 - 5 **[Book MW1]:** pg 116-119 nos 1-4	Understanding pattern and sequences (https://www.youtube.com/watch?v=9zaH6rKZXjg)

Topic: 2.10Coordinates

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) identify the axes in a Cartesian plane (*x-y* plane);	**[Book MIE7]:** To study notes (pg 194 – 196).			
b) locate and plot points in the Cartesian plane;	**[Book MIE7]:** To study notes & 2 worked examples (pg 196 – 198).	**[Book MIE7]:**pg 198 Ex 17.1 nos 1 – 13	**[Book MW1]:** pg 121-122 nos 1, 2	Understanding the Cartesian plane and plotting points (https://www.youtube.co

				m/watch?v=9Uc62CuQjc4)
c) determine the equation of lines parallel to the x and y axes	**[Book MIE7]:** To study notes & 2 worked examples (pg 201 – 203).	**[Book MIE7]:** pg 203 Ex 17.2 nos 1 – 8	**[Book MW1]:** pg 123 no 3	
d) draw lines in the form x=h and y=k, where h and k are constants;	**[Book MIE7]:** To study notes & 2 worked examples (pg 201 – 203).	**[Book MIE7]:** pg 203-204 Ex 17.2 nos 9, 10	**[Book MW1]:** pg 124 no 4	
e) find point of intersection of horizontal and vertical lines.	**[Book MIE7]:** To study notes & 1 worked example (pg 205 – 206).	**[Book MIE7]:**pg 205 Ex 17.3 nos 1 – 7.	**[Book MW1]:** pg 125-127 nos 5-7	

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July Assessment

Component	Time Allocation	Type	Maximum Mark
	2 hour	Short answer and structured questions	100

The Question Paper will consist of about 20 short answer and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7 first term and second term, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

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THIRD TERM [12/08/2024 – 30/10/2024]

Topic: 3.1Symmetry

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) determine the number of lines of symmetry in plane shapes;	**[Book MIE7]:** To study notes (pg 207 – 208). **[WEM1]:** Unit 8; To study worked examples nos 1, 5, 7(a), 12	**[Book MIE7]:**pg 214 – 216 Ex 18.2 no 1		Understanding reflectional symmetry (https://www.youtube.com/watch?v=MtqtIiJsfiE)
b) locate and draw the line(s) of symmetry in a given shape;	**[Book MIE7]:** To study notes & 1 worked example (pg 208 – 213). **[WEM1]:** Unit 8; To study worked examples nos 2, 6, 11.	**[Book MIE7]:**pg 210 – 212 Ex 18.1 nos 1(a,b), 2(a,b), 3, 4(a,b), 5,6,8; pg 214 – 216 Ex 18.2 no 3, 5	**[Book MIE7]:**pg 210 – 212 Ex 18.1 nos 1, 2, 4,7; pg 214 – 216 Ex 18.2 nos 2,4 **[Book MW1]:** pg 129-133 nos 1-3	
c) complete plane figures line(s) of symmetry (horizontal, vertical and slant).	**[Book MIE7]:** To study notes & 1 worked example (pg 216 – 217).	**[Book MIE7]:**pg 214 – 216 Ex 18.2 no 6; pg 218 – 220 Ex 18.3 no 1(a,b),2(a,b)3,6.	**[Book MIE7]:**pg 218 – 220 Ex 18.3 nos 1,2,4,5,7.	

	[WEM1]: Unit 8; To study worked examples nos 3, 4, 8, 10, 13, 14.		[Book MW1]: pg 134-136 nos 4-8	

Topic: 3.2Geometrical Constructions

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) perform simple geometrical constructions using ruler, set squares, protractor; a pair of compasses and dividers as well as digital tools;	**[Book MIE7]:** To study notes (pg 221 – 222).	**[Book MIE7]:**pg 222 Ex 19.1	**[Book MW1]:** pg 138-139 nos 1-3	
b) construct a line parallel to given line;	**[Book MIE7]:** To study notes (pg 223).	**[Book MIE7]:**pg 224 Ex 19.2	**[Book MW1]:** pg 143 no 11	
c) construct a line parallel to a given line passing through a given point;	**[Book MIE7]:** To study notes (pg 224).	**[Book MIE7]:**pg 225 Ex 19.3	**[Book MW1]:** pg 143 no 12	
d) construct the perpendicular bisector of a line segment;	**[Book MIE7]:** To study notes (pg 225 – 226).	**[Book MIE7]:**pg 226 Ex 19.4	**[Book MW1]:** pg 139-140 nos 4, 5	How to construct perpendicular bisector (https://www.youtube.co

				m/watch?v=IQ35R6CWqd 8)
e) construct the bisector of an angle.	**[Book MIE7]:** To study notes (pg 227).	**[Book MIE7]:**pg 227 Ex 19.5.	**[Book MW1]:** pg 140 nos 6; pg 142 nos 9, 10	How to construct angle bisector (https://www.youtube.com/watch?v=2lP1NKYLKQw)
			[Book MW1]: pg 144-145 nos 13, 14	

Mid Third Term Assessment

Component	Time Allocation	Type	Maximum Mark
	1 hour	Short questions and structured questions	50

The Paper will consist of short and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7 first term, second term and third term covered till the assessment, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

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Topic: 3.3 Reflection

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) demonstrate an understanding of the notion of reflection;	**[Book MIE7]:** To study notes (pg 229 – 230).			Understanding reflection (https://www.youtube.com/watch?v=A8fX2Drlpng)
b) reflect points, line segments and polygons in lines of reflection;	**[Book MIE7]:** To study notes (pg 230 – 231).	**[Book MIE7]:** pg 231 Ex 20.1	**[Book MW1]:** pg 147-148 nos 1-3; pg 149-150 no 6, 7	
c) reflect figures and shapes in lines of reflection;	**[Book MIE7]:** To study notes & 1 worked example (pg 232 – 235).	**[Book MIE7]:** pg 234 Ex 20.2 (a,b,d); pg 235 Ex 20.3 no 1	**[Book MIE7]:** pg 234 Ex 20.2; pg 235 Ex 20.3 no 2	
d) locate the line of reflection given the object and the image (through construction).	**[Book MIE7]:** To study notes & 2 worked examples (pg 236 – 237).	**[Book MIE7]:** pg 237 Ex 20.4 nos 1-4.	**[Book MIE7]:** pg 237 Ex 20.4 nos 5-9. **[Book MW1]:** pg 148 nos 4, 5; pg 150 no 8	

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Topic: 3.4Sets

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) demonstrate an understanding of the concept of sets;	**[Book MIE7]:** To study notes & 2 worked examples (pg 240 – 242). **[WEM1]:** Unit 8; To study worked examples nos 12 **[Book MT1]:** To study notes & 4 worked examples (p177 – 180)	**[Book MIE7]:**pg 242 Ex 21.1		
b) distinguish among different types of sets;	**[Book MIE7]:** To study notes & 6 worked examples (pg 244 – 250). **[WEM1]:** Unit 8; To study worked examples nos 3, 4, 13, 14	**[Book MIE7]:**pg 245 Ex 21.4; pg 246 Ex 21.5; pg 247 Ex 21.6, Ex 21.7; pg 248 Ex 21.8; pg 250 Ex 21.9		

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	[Book MT1]: To study notes & 4 worked examples (p177 – 180)		
c) identify and use set notations;	**[Book MIE7]:** To study notes & 1 worked examples (pg 243 – 256). **[WEM1]:** Unit 4; To study worked examples nos 1, 11 **[Book MT1]:** To study notes & 4 worked examples (p177 – 180)	**[Book MIE7]:**pg 243 Ex 21.2	
d) find the cardinal number of a given set;	**[Book MIE7]:** To study notes & 1 worked example (pg 244) 5 **[WEM1]:** Unit 8; To study worked examples nos 2 6 **[Book MT1]:** To study notes & 4 worked examples (p177 – 180)	**[Book MIE7]:**pg 244 Ex 21.3	
e) find the union and intersection of 2 sets;	**[Book MIE7]:** To study notes & 1 worked example (pg 250 – 251).	**[Book MIE7]:**pg 250 Ex 21.10; pg 251 Ex 21.11; pg 251 Ex 21.12	**[Book MW1]:** pg 152-153 no 1, 2

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	[Book MT1]: To study notes & 4 worked examples (p177 – 180)			
f) represent 2 sets in a Venn Diagram;	**[Book MIE7]:** To study notes & 2 worked examples (pg 252 – 253). **[WEM1]:** Unit 8; To study worked examples nos 5-9 **[Book MT1]:** To study notes & 4 worked examples (p177 – 180)	**[Book MIE7]:**pg 254 Ex 21.13	**[Book MW1]:** pg 154-159 nos 3-8	Introduction of set concepts and Venn diagrams (https://www.youtube.com/watch?v=Jt-S9J947C8)
g) Shade required regions in a Venn Diagram	**[Book MIE7]:** To study notes & 1 worked examples (pg 254 – 255). **[WEM1]:** Unit 8; To study worked examples nos 10 **[Book MT1]:** To study notes & 4 worked examples (p177 – 180)	**[Book MIE7]:**pg 256 Ex 21.14	**[Book MW1]:** pg 159-162 nos 9-17	●

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Topic: 3.5Statistics

Learning Objectives	Worked Examples	Classwork & Homework	Extra Work	Resources
Students should be able to: a) collect, classify and tabulate statistical data;	**[Book MIE7]:** To study notes (pg 257 – 258).	**[Book MIE7]:**pg 259 Ex 22.1		Understanding frequency distriutions (https://www.youtube.com/watch?v=1g-VVV0f0gg)
b) construct and use frequency tables, pictograms and bar charts;	**[Book MIE7]:** To study notes & 3 worked examples (pg 260 – 265).	**[Book MIE7]:**pg 262 – 263 Ex 22.2 nos 2, ;pg 266 – 267 Ex 22.3 nos 1, 2, 5, 6.	**[Book MIE7]:** pg 269 Ex 22.3 nos 7.	Understanding bar chart and pictogram https://www.youtube.com/watch?v=ExN8RxsaS8c)
c) interpret data in pictograms and bar charts.	**[Book MIE7]:** To study notes & 3 worked examples (pg 260 – 265).	**[Book MIE7]:**pg 262 – 263 Ex 22.2 nos 1, 3; pg 266 – 267 Ex 22.3 nos 3, 4.	**[Book MIE7]:**pg 262 – 263 Ex 22.2 nos 4; **[Book MW1]:** pg 164 nos 1-4	

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October Assessment

Component	Time Allocation	Type	Maximum Mark
	2 hour	Short answer and structured questions	100

The Question Paper will consist of about 20 short and structured questions. Neither mathematical tables nor slide rules nor calculators will be allowed in this paper. Omission of essential working will result in loss of marks. Candidates should answer **all** questions.

Candidates are expected to cover the PROPOSED syllabus. The paper may contain questions on any part of the syllabus for Grade 7, the Syllabus for Grades 1 to 6 for exams in 2019 and questions will not necessarily be restricted to a single topic.

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