

SENIOR PHASE

Mathematics

Survival Guide

Covid-19





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Survival Guide Covid-19 Mathematics Senior Phase

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COVID-19 safety guidelines for teachers and learners

Gatherings at school

Where schools are open for learning, it is up to management to take decisive action to ensure sites are not simultaneously used for other functions such as shelters or treatment units in order to reduce the risk.

Implement social distancing practices that may include:

- A staggered timetable, where teachers and learners do not arrive/leave at the same time for the beginning and end of the school day.
- Cancelling any community meetings/events such as assemblies, cake sales, market day, tuckshop, after-care classes, matric dance, Eisteddfod and other events.
- Cancelling any extra-mural activities such as ballet classes, swimming lessons, sport games, music class and other events that create a crowd gathering.
- Teaching and modeling creating space and avoiding unnecessary touching.
- Limiting movement and interaction between classes.
- Schools with an established feeding scheme plan are to ensure that hygiene and social distancing is always implemented. Teachers and staff members assisting with food distribution are to wear masks, sanitise prior to issuing food items and learners are to stand 1,5m apart in the queue.

Wear a mask at all times.



1. Restrooms/ toilets

Hand washing

Washing hands with soap and water  or using alcohol-based hand sanitisers  is one of the most important ways to help everybody stay healthy at school. Critical to this is preparing and maintaining handwashing stations with soap and water at the toilet and in each classroom.



Teachers and learners should always wash their hands after:

- eating
- entering the classroom
- using the toilet
- blowing your nose or coughing
- touching tears, mucous, saliva, blood or sweat.

2. Premises and Classroom setting

When schools open, classroom settings should be altered in order to promote hygiene, safety and social distancing.

Changed classroom settings may include:

- Cleaning and disinfecting school buildings, classrooms and especially sanitation of facilities at least once a day, particularly surfaces that are touched by many people (railings, lunch tables, sports equipment, door and window handles, toys, teaching and learning tools etc.).
- Ensure the proper ventilation and fresh flow of air through classrooms.
- Providing learners with vital information about how to protect themselves by incorporating the importance of hygiene, handwashing and other measures of protecting themselves, into the lessons.
- Promoting best handwashing and hygiene practices and providing hygiene supplies.

- Prepare and maintain handwashing stations with soap and water, and if possible, place alcohol-based hand sanitisers in each classroom, at entrances and exits, and near lunchrooms and toilets.



- Ensure teachers and learners wear a mask at all times.



Social distancing

- Space the learners out in the classroom (or outdoors) – try to keep learners separated by a minimum of 1,5m.



- Create space for learner's desks to be at least 1,5m apart

- Learners are not to exceed 30 per class or 50% of original class size



- Learners should not share cups, eating utensils, or food

- Do not let learners eat items that fall on the floor or chew on pencils or other objects

- Avoid close contact, like shaking hands, hugging or kissing



3. Social behaviour

It is extremely vital during a pandemic that focus is not only directed towards optimal physical health and hygiene but finding ways to facilitate mental health support.

- Treat everybody with respect and empathy – no teasing about COVID-19.
 - Encourage kindness towards each other and avoid any stereotyping when talking about the virus.
 - Stay home if you have a temperature or are ill.
 - Do not touch people who are ill, but be empathetic.
- Wear a mask at all times.



Dear Teacher

The National State of Disaster due to the COVID-19 pandemic has resulted in the disruption of Education in South African and the loss of valuable teaching time and disruption of the school calendar.

As a result of this the DBE has created a Recovery Framework including revised ATPs to assist schools and teachers in ensuring the 2020 school year is completed.

This plan addresses curriculum trimming and reorganisation to ensure core skills and knowledge are taught so that learners may progress to the next grade.

The following DBE website <https://www.education.gov.za/Home/RecoveryPlan2020.aspx> has the following useful documents available for you to use:

- Circular S2 of 2020 Revised ATPs for Gr 12 and Gr 7
- ATP Mediation documents by grade and subject
- National Phase Content Plans by phase and subject
- National Revised ATPs by grade and subject

At Pearson South Africa, we believe that education is the key to every individuals' success.

To ensure that despite the shortened teaching year, teachers and learners can meet all the necessary learning outcomes for the year, we have created this resource to support teachers and learners during this difficult time.

This Survival Guide aims to identify areas where teacher-facing time is reduced and various strategies such as trimming the curriculum, grouping or reorganising content and creating opportunities for learner-centered work and blended learning can take place.

HOW TO USE THIS SURVIVAL GUIDE

CAPS curriculum:
comprehensive
summary of the
CAPS topics and
sub-topics and time
allocation

1. CAPS time allocation
2. Revised CAPS time allocation according to the Revised ATPs

Survival guide strategy: proposed strategies that can be used to save teaching time. Two approaches to reducing teaching time are suggested:

1. **trimming** the curriculum and therefore teaching time
2. Curriculum **reorganisation/ clustering/grouping** topics across the year where it makes sense and therefore reducing teaching time

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
4. Floods	Unit 1 Causes of floods	4 hours	1.5 hours	Retain	Group with Unit 2 Effects of floods
	Unit 2 Effects of floods		1.5 hours	Retain	
	Unit 3 Why some communities are at higher risk than others			Retain but reduce	Flipped concept, learners prepare before lesson in preparation and then class discussion *4
Revision and assessment	Revision and assessment formal and informal including feedback should be done on an ongoing basis Revision and end-of-year examination: Formal assessment Task: Source - based & paragraph writing 50 Marks November examination: 50 marks	3 hours		Reduced	
 TOTAL HOURS = 15					

ASSESSMENT						
	TERM 1	TERM 2	TERM 3	TERM 4	NOVEMBER EXAM	
POA	Project, assessed as part of formal assessment for Term 1	June exam cancelled	Test: 2nd week of September, based on content & concepts taught from reopening of schools 1 June – up to this point	Formal assessment based on concepts and content taught from September to November		
SBA	Map skills project	Test: Earthquakes and volcanoes and population growth and change		Test: Natural resources and conservation in South Africa TOTAL MARKS: 50	QUESTION 1: 25 marks TYPES OF QUESTIONS Source-based, data handling and definitions of concepts QUESTION 2: 25 marks TYPES OF QUESTIONS Case study, definitions of concepts, data handling and paragraph writing	CONTENT Natural resources and conservation in South Africa CONTENT Management of resources

*1 Learners bring summaries to class for class discussions. Flipped concept, learners prepare before lesson and then class discussion around content. Teacher chooses 1 resource. Natural resources on Earth and use and abuse of them have been omitted according to the Recovery national teaching plans.

*2 Learners prepare at home by reading content choose either community or eco tourism. Flipped concept, learners prepare before lesson and then class discussion around content.

*3 Remove due to time constraints and addressed in Gr 10

Explain the rationale behind the trimming or grouping suggested

Assessment and revision for POA and SBA as per Revised ATPs.

Notes

- Grade 12 subjects' content will not be trimmed/cut, but time can be saved through grouping and reorganising content.
- Teachers should follow the amended guidelines for assessment as set out by the DBE. Revised ATPs per subject and grade.
- No curriculum condensing strategies have been suggested for Term 1, as it is assumed that Term 1 content was taught.

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Grade 9 Mathematics

CAPS Content Overview Mathematics

National Revised Annual Teaching Recovery Plan 2020

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Grade 7

Mathematics

The instructional time in Grade 7 – 9

SUBJECT	HOURS
Home language	5
First Additional Language	4
Mathematics	4,5
Natural Sciences	3
Social Sciences	3
Technology	2
Economic Management Sciences	2
Life Orientation	2
Creative Arts	2
TOTAL	27,5

Abbreviations:

Annual teaching plan – ATP

Curriculum and Assessment Policy – CAPS

Further Education and Training Phase (grades 10 – 12) – FET

Senior Phase (grades 7 – 9) – SP

Summary: Content Overview

Mathematics Senior Phase

TERM	GRADE 7	GRADE 8	GRADE 9
1	Whole numbers; Exponents; Construction of Geometric figures; Geometry of 2D shapes; Geometry of straight lines	Whole numbers; Integers; Exponents; Numeric and geometric patterns; Functions and relationships; Algebraic expressions; Algebraic equations	Whole numbers; Integers; Common fractions; Decimal fractions; Exponents; Numeric and geometric pattern patterns; Functions and relationships; Algebraic expressions; Algebraic equations
2	Common fractions; Decimal fractions; Functions and relationships; Area and perimeter of 2D shapes; Surface area and Volume of 3D objects	Algebraic expressions; Algebraic equations; Construction of Geometric figures; Geometry of 2D shapes; Geometry of straight lines	Construction of geometric figures; Geometry of 2D shapes; Geometry of straight lines; Theorem of Pythagoras; Area and Perimeter of 2D shapes
3	Numeric and geometric patterns; Functions and relationships; Algebraic equations; Graphs; Transformation geometry; Geometry of 3D objects	Common fractions; Decimal fractions; Theorem of Pythagoras; Area and perimeter of 2D shapes; Surface area and volume of 3D objects; Collect, organise and summarise data; Represent data; Interpret, analyse and report data	Functions and relationships; Algebraic expressions; Algebraic equations; Graphs; Surface Area and volume of 3D objects
4	Integers; Numeric and geometric patterns; Functions and relationships; Algebraic expressions; Algebraic equations; Collect, organise and summarise data; Represent data; Probability	Functions and relationships; Algebraic equations; Graphs; Transformation geometry; Probability	Transformation geometry; Geometry of 3D objects; Collect, organise and summarise data; Represent data; Interpret, analyse and report data; Probability

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
1: Whole numbers	Unit 1: Order and compare whole numbers	Order, compare and represent numbers to at least 9-digit numbers	9 hours	Self-assessment or revision notes and feedback*1	Combine Unit 1, 2, 3 and 5 revision notes/assessments	7 hours
		Recognise and represent prime numbers to at least 100				
		Round off numbers to the nearest 5, 10, 100 or 1 000				
	Unit 2: Properties of whole numbers	Order, compare and represent numbers to at least 9-digit numbers		Self-assessment or revision notes and feedback*1		
		Recognise and represent prime numbers to at least 100				
		Round off numbers to the nearest 5, 10, 100 or 1 000				
	Unit 3: Calculations with whole numbers	Addition and subtraction of whole numbers to at least 6-digit numbers		Self-assessment or revision notes and feedback*1		
		Multiplication of at least whole 4-digit by 2-digit numbers				
		Division of at least whole 4-digit by 2-digit numbers				
	Unit 4: Calculation techniques	Calculations using all four operations on whole numbers, estimating and using calculators where appropriate		Retain		
		Use a range of strategies to perform and check written and mental calculations of whole numbers including long division; adding, subtracting and multiplying in columns; estimation; rounding off and compensating; using a calculator				

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
	Unit 5: Multiples and factors	Multiples of 2-digit and 3-digit whole numbers		Self-assessment or revision notes and feedback*1		
		Factors of 2-digit and 3-digit whole numbers				
		Prime factors of numbers to at least 100				
		List prime factors of numbers to at least 3-digit whole numbers		Retain		
		LCM and HCF of numbers to at least 3-digit whole numbers, by inspection or factorisation				
	Unit 6: Solve problems	Whole numbers, including comparing two or more quantities of the same kind (ratio); comparing two quantities of different kinds (rate); sharing a given ratio where the whole is given		Retain		
		Whole numbers, percentages and decimal fractions in financial contexts such as profit, loss and discount; budgets; accounts; loans; simple interest				
				TOTAL HOURS SAVED = 2		

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
2: Exponents	Unit 1: Compare and represent numbers in exponential form	Compare and represent whole numbers in exponential form: $ab = a \times a \times a \times \dots$ for b number of factors	9 hours	Retain *2		9 hours
	Unit 2: Calculations using numbers in exponential form	Appropriate laws of operations with numbers involving exponents, square and cube roots Calculations involving all four operations using numbers in exponential form, limited to exponents up to 5, square and cube roots		Retain *2		
	Unit 3: Solve problems	Solve problems in contexts involving numbers in exponential form		Retain *2		
TOTAL HOURS = 9				TOTAL HOURS SAVED = 0		

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
3: Construction of Geometry figures	Unit 1: Measure angles	Accurately use a protractor to measure and classify angles: acute, obtuse and straight angles	10 hours	Retain		10 hours
	Unit 2: Constructions	Construct geometric figures appropriately using a compass, ruler and protractor, including angles, to one degree of accuracy; circles; parallel lines and perpendicular lines		Retain		
 TOTAL HOURS = 10				 TOTAL HOURS SAVED = 0		

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
4: Geometry of 2D shapes	Unit 1: Classify 2D shapes	Describe, sort and compare 2-D shapes in terms of number of sides; lengths of sides and size of angles	10 hours	Self-assessment or revision notes and feedback*1		9 hours
		Describe, sort, name and compare triangles according to their sides and angles, focusing on equilateral triangles; isosceles triangles; right-angled triangles		Retain *2		
		Describe, sort, name and compare quadrilaterals in terms of length of sides; parallel and perpendicular sides; size of angles (right-angles or not)				
		parts of a circle				
	Unit 2: Similar and congruent 2D shapes	Similar and congruent figures by comparing shape and size		Retain *2		
	Unit 3: Solve problems	Problems involving unknown sides and angles in triangles and quadrilaterals, using known properties		Retain. *2		
TOTAL HOURS = 10				TOTAL HOURS SAVED = 1		

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
5: Geometry of straight lines	Unit 1: Definitions	Line segment; Ray; Straight line; Parallel lines; Perpendicular lines	2 hours	Retain		2 hours
 TOTAL HOURS = 2				 TOTAL HOURS SAVED = 0		

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
6: Common fractions	Unit 1: Order, compare and simplify fractions	Compare and order common fractions, including specifically tenths and hundredths	9 hours	9 hours	Self-assessment or revision notes and feedback*1	Combine Unit 1, 2 and 5 revision notes/assessments
		Compare and order common fractions to thousandths			Focus on compare and order common fractions to thousandths	
	Unit 2: Calculations with fractions	Add and subtract mixed numbers, limited to fractions with the same denominator or where one denominator is a multiple of another			Self-assessment or revision notes and feedback*1	
		Find fractions of whole numbers				
	Unit 3: Calculation techniques	Add and subtract fractions where one denominator is not a multiple of the other			New content	
		Multiplication of common fractions, including mixed numbers, not limited to fractions where one denominator is a multiple of another			New content	
		Convert mixed numbers to common fractions in order to perform calculations			New concepts	
		Use knowledge of multiples and factors to write fractions in the simplest form before or after calculations				
	Unit 4: Problem solving	Use knowledge of equivalent fractions to add and subtract common fractions				
		Solve problems in contexts involving common fractions and mixed numbers, including grouping, sharing and finding fractions of whole numbers			New concept	

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
	Unit 5: Percentages	Finding percentages of whole numbers			Self-assessment or revision notes and feedback*1	
		Calculate the percentage of whole numbers			Focus on percentage part of a whole; increase and decrease and problem solving	
		Calculate percentage increase or decrease of whole numbers				
		Solve problems in context involving percentages				
	Unit 6: Equivalent forms	Recognise equivalence between common fraction and decimal fraction forms of the same number			New content.	
		Recognise equivalence between common fraction, decimal fraction and percentage forms of the same number				
					 9 hours	 9 hours

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
7: Decimal Fractions	Unit 1: Order and compare decimal fractions	Count forwards and backwards in decimal fractions to at least two decimal places	9 hours	9 hours	Self-assessment or revision notes and feedback*1	Combine Unit 1, 2 and 6 revision notes/assessments
		Compare and order decimal fractions to at least two decimal places				
		Place value of digits to at least two decimal places				
		Rounding off decimal fractions to at least 1 decimal place				
		Extend to decimal fractions to at least three decimal places and rounding off to at least 2 decimal places				
	Unit 2: Calculations with decimal fractions	Addition and subtraction of decimal fractions of at least two decimal places			Self-assessment or revision notes and feedback*1	New content
		Multiplication of decimal fractions by 10 and 100				
		Extend addition and subtraction to decimal fractions of at least three decimal places				
		Multiply decimal fractions to at least 3 decimal places by whole number				
		Divide decimal fractions to at least 3 decimal places by whole numbers				
	Unit 3: Calculation techniques	Use knowledge of place value to estimate the number of decimal places in the result, before performing calculations			New concepts	
		Use rounding off and a calculator to check results where appropriate				
	Unit 5: Problem solving	Solve problems in context involving decimal fractions			New concept	

CAPS CURRICULUM						SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	
	Unit 6: Equivalent fractions	Recognise equivalence between common fraction and decimal fraction forms of the same number			Self-assessment or revision notes and feedback*1		
		Recognise equivalence between common fraction, decimal fraction and percentage forms of the same number					
			 9 hours	 9 hours			

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
18: Integers	Unit 1: Count, order and compare integers	Count forwards and backwards in integers for any interval	9 hours	9 hours	Retain. New content*2	
	Unit 2: Calculations with integers	Recognise, order and compare integers				
	Unit 3: Properties of integers	Add and subtract with integers				
	Unit 4: Solving problems	Recognise and use commutative and associative properties of addition and multiplication for integers				
					Retain. New content*2	
			 9 hours	 9 hours		
Assignment	Common Fractions Decimal Fractions Integers		1 week			

Term 2 Topic 8; 12 & 20: Functions and relationships

CAPS Suggested Time
3 hours

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
8: Functions and relationships	Unit 1: Input and output values	Determine input values, output values and rules for patterns and relationships using flow diagrams and tables	9 hours	3 hours	Self-assessment or revision notes and feedback*1	Topics 8, 12 and 20 Functions and relationships
		Determine input values, output values and rules for patterns and relationships using formulae			New content*2	
	Unit 2: Equivalent forms	Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented verbally; in flow diagrams; in tables and by number sentences			Self-assessment or revision notes and feedback*1	Combine Unit 1 and 2 revision notes/ assessments
		Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented by formulae			New content. Focus more on this section.	
					 9 hours	 3 hours

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY		
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	
9: Area and perimeter of 2D shapes	Unit 1: Area and perimeter	Calculate the perimeter of regular and irregular polygons	7 hours	7 hours	Retain		
		Use appropriate formulae to calculate perimeter and area of squares; rectangles and triangles					
	Unit 2: Calculations and solving problems	Solve problems involving perimeter and area of polygons				Retain	
Calculate to at least 1 decimal place							
		Use and convert between appropriate SI units, including mm² ↔ cm² and cm² ↔ m²					
					 7 hours	 7 hours	

Term 2 Topic 10: Surface area and Volume of 3D objects

CAPS Suggested Time
8 hours

CAPS CURRICULUM						SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION		CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
10: Surface area and volume of 3D objects	Unit 1: Surface area and volume	Use appropriate formulae to calculate the surface area, volume and capacity of cubes and rectangular prisms	8 hours	8 hours		Retain. New content	
		Describe the interrelationship between surface area and volume of cubes and rectangular prisms					
	Unit 2: Calculations and solving problems	Solve problems involving surface area, volume and capacity				Retain. New content	
		Use and convert between appropriate SI units, including $\text{mm}^2 \leftrightarrow \text{cm}^2$; $\text{cm}^2 \leftrightarrow \text{m}^2$; $\text{mm}^3 \leftrightarrow \text{cm}^3$ and $\text{cm}^3 \leftrightarrow \text{m}^3$					
		Use equivalence between units when solving problems: $1 \text{ cm}^3 \leftrightarrow 1 \text{ ml}$; $1 \text{ m}^3 \leftrightarrow 1 \text{ kl}$					
			 8 hours	 8 hours			

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
11: Numeric and Geometric patterns	Unit 1: Investigate and extend patterns	Investigate and extend numeric patterns looking for relationships or rules of patterns: Sequences not limited to a constant difference or ratio of learner's own creation; represented in tables Describe the general rules for the observed relationships between numbers in own words	9 hours	9 hours	Self-assessment or revision notes and feedback*1 New content*2	Topics 11 and 19 Numeric and Geometric patterns
					 9 hours	
					 9 hours	
					3 days	
Investigation	Area and Perimeter of 2D shapes or Surface Area and volume of 3D objects					

CAPS CURRICULUM						SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION		CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
13: Algebraic expressions	Unit 1: Algebraic language	Recognise and interpret rules or relationships represented in symbolic form Identify variables and constants in given formulae and/or equations	6 hours	3 hours		Retain. New content*2	Topic 13 and 21 Algebraic expressions
						 6 hours	 3 hours

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
14: Algebraic equations	Unit 1: Number sentences	Write number sentences to describe problem situations	7 hours	4,5 hours	Self-assessment or revision notes and feedback*1	Topic 14 and 22 Algebraic equations
		Solve and complete number sentences by inspection and trial and improvement				
		Check solution by substitution				
		Analyse and interpret number sentences that describe a given situation			New content*2	
		Determine the numerical value of an expression by substitution				
		Identify variables and constants in given formulae or equations				
					 7 hours	 4,5 hours

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
15: Graphs	Unit 1: Interpreting graphs	Analyse and interpret global graphs of problem situations, with special focus on linear or non-linear; constant; increasing or decreasing	6 hours	4,5 hours	Retain. New content.	
	Unit 2: Drawing graphs	Draw global graphs from given descriptions of a problem situation, identifying features listed above			Retain. New content.	
			 6 hours	 4,5 hours		

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
16: Transformation Geometry	Unit 1: Transformation	Recognise, describe and perform translations, reflections and rotations with geometric figures and shapes on squared paper	9 hours	9 hours	Self-assessment or revision notes and feedback*1	
		Identify and draw lines of symmetry in geometric figures				
	Unit 2: Enlargements and reductions	Draw geometric figures on squared paper and compare them in terms of shape and size			New content. Focus more on this section.	
				 9 hours	 9 hours	

Term 4 Topic 23: Collect, organise and summarise data

CAPS Suggested Time
7 hours

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
23: Collect, organise and summarise data	Unit 1: Collect data	Pose questions relating to social, economic, and own environmental issues	4 hours	7 hours Topic 23, 24 & 25	Retain. New content.	
		Select appropriate sources for the collection of data (including peers, family, newspapers, books, magazines)				
		Distinguish between samples and populations and suggest appropriate samples for investigation				
		Design and use simple questionnaires to answer questions with yes/no type responses and multiple choice				
	Unit 2: Organise and summarise data	Organise (including grouping where appropriate) and record data using tally marks; tables; stem-and-leaf displays			Retain: New content.	
		Group data into intervals				
		Summarize and distinguishing between ungrouped numerical data by determining mean; median; mode				
		Identify the largest and smallest scores in a data set and determine the difference between them in order to determine the spread of the data (range)				
				 4 hours	 7 hours	

CAPS CURRICULUM					SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
24: Represent data	Unit 1: Representing data	Draw a variety of graphs to display and interpret data including bar graphs and double bar graphs	3 hours		Self-assessment or revision notes and feedback*1	
		Draw a variety of graphs to display and interpret data including histograms with given intervals and pie charts			New content.	
				 3 hours	 7 hours	

Term 4 Topic 25: Interpret, analyse and report data

CAPS Suggested Time
7 hours

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
SUB-TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
25: Interpret, analyse and report data	Unit 1: Interpret data	Critically read and interpret data represented in words; bar graphs; double bar graphs and pie charts	3,5 hours		Self-assessment or revision notes and feedback*1	Combine Unit 1, 2 and 3 revision notes/assessments
		Critically read and interpret data represented in histograms			New content. Focus more on this section.	
	Unit 2: Analysing data	Analyse data by answering questions related to data categories, including data intervals; data sources and contexts; central tendencies – (mode and median)			Self-assessment or revision notes and feedback*1	
		Analyse data by answering questions related to scales used on graphs			Retain. New content.	
	Unit 3: Report data	Summarise data in short paragraphs that include drawing conclusions about the data; making predictions based on the data			Self-assessment or revision notes and feedback*1	
		Identifying sources of error and bias in the data choosing appropriate summary statistics for the data (mean, median, mode)			Retain. New content.	
				 3,5 hours	 7 hours	
Test and exams	Test on topics covered in Term 4; Revision and Exam on topics covered in Term 1 – 4		1 week			

*1 Content covered in Grade 6

*2 Suggested topics to focus on, preparing for Grade 8 Term 1 and 2

*3 Content on Geometry of 3D objects and Probability has been excluded in the revised teaching plan

Grade 8

Mathematics

Grade 8 Overview Mathematics

The table below represents the order of topics as stated in the Senior phase CAPS document.

Time allocation Per term: Grade 8							
Term 1		Term 2		Term 3		Term 4	
Topic	Time	Topic	Time	Topic	Time	Topic	Time
Whole numbers	6 hours	Algebraic expressions	9 hours	Common fractions	7 hours	Functions and relationships	6 hours
Integers	9 hours	Algebraic equations	3 hours	Decimal fractions	6 hours	Algebraic equations	3 hours
Exponents	9 hours	Construction of Geometric figures	8 hours	Theorem of Pythagoras	5 hours	Graphs	9 hours
Numeric and geometric patterns	4,5 hours	Geometry of 2D shapes	8 hours	Area and perimeter of 2D shapes	5 hours	Transformation geometry	6 hours
Functions and relationships	3 hours	Geometry of straight lines	9 hours	Surface area and volume of 3D objects	5 hours	Geometry of 3D objects	7 hours
Algebraic expressions	4,5 hours			Collect, organize and summarize data	4 hours	Probability	4,5 hours
Algebraic equations	3 hours			Represent data	3 hours		
				Interpret, analyse and report data	3,5 hours		
revision/assessment	6 hours	revision/assessment	8 hours	revision/assessment	6,5 hours	revision/assessment	9,5 hours
 Total: 45 hours		 Total: 45 hours		 Total: 45 hours		 Total: 45 hours	

Total of 33 weeks teaching time = 150 hours

Grade 8 National Revised Annual Teaching Recovery Plan 2020

Topic number(S) -As according to CAPS	Revised order For COVID-19 strategy	Topic name	Revised Time taken (Weeks)
TERM 3			
13	1	Common fractions	1
14	2	Decimal fractions	1
6 and 8	3	Algebraic expressions	1
7, 9 and 22	4	Algebraic equations	2
12	5	Geometry of straight lines	2
TERM 4			
11	6	Geometry of 2D shapes	2
15	7	Theorem of Pythagoras	2
16	8	Area and Perimeter of 2-D shapes	2
17	9	Surface area and volume of 3-D objects	1
23	10	Graphs	1
18,19 and 20	11	Data handling	1
TERM 1 REVISION			
1		Whole numbers	
2		Integers	
3		Exponents	
4		Numeric and Geometric patterns	
5		Functions and relationships	
		Total	16

This order has been considered in relation to the **National Revised Annual Teaching Recovery Plan** proposed by the DBE to accommodate the impact of COVID-19 and is therefore an interim deviation from the original curriculum.

- Topics that are repetitive have been merged and dealt with once, but in depth.
- The following have been left out:

Topics removed from syllabus and covered in grade 9 syllabus of 2021:

- Construction of geometric figures
- Geometry of 3 D objects
- Transformation Geometry
- Probability

Grade 8 Final Examination weightings

TOPICS	PAPER 1				MARKS
	CONCEPTS				
Whole numbers and integers	Properties of whole numbers	Calculations using whole numbers	Multiples and factors	Solving problems	7 ± 2
Integers	Calculations with integers	Properties of integers	Solving problems		4 ± 2
Common Fractions	Calculations using fractions	Solving problems	Percentages	Equivalent forms	5 ± 2
Decimal Fractions	Calculations with decimal fractions	Solving problems	Equivalent forms		4 ± 2
Exponents	Comparing and representing numbers in exponential form	Calculations using numbers in exponential form	Solving problems		7 ± 2
Functions and Relationships	Input and output values		Equivalent forms		6 ± 2
Numeric and geometric patterns	Investigate and extend patterns				3 ± 2
Algebraic expressions	Algebraic language		Expand and simplify algebraic expression		10 ± 2
Algebraic equations	Solving equations				7 ± 2
Graphs	Interpreting graphs		Drawing graphs		7 ± 2
TOTAL					60

Grade 8 Final Examination weightings

TOPICS	PAPER 2					MARKS
	CONCEPTS					
Geometry of 2D shapes	Classifying 2D shapes	Similar and congruent 2D shapes		Solving problems		12 ± 2
Geometry of straight line	Angle relationships		Solving problems			12 ± 2
Theorem of Pythagoras	Use the Theorem of Pythagoras					7 ± 2
Area and perimeter	Area and perimeter of regular and irregular polygons		Calculations and solving problems			7 ± 2
Surface area and volume of 3D objects	Surface area and volume		Calculations and solving problems			7 ± 2
Data Handling	Organise and summarise data	Represent data	Interpret data	Analyse data	Report data	15 ± 2
TOTAL						60

Grade 8 Final Examination Cognitive levels

DESCRIPTION AND EXAMPLES OF COGNITIVE LEVELS (P1 and P2)	
Cognitive levels	Description of skills to be demonstrated
Knowledge ($\approx 25\%$)	• Straight recall • Use of mathematical facts • Appropriate use of mathematical vocabulary • Read information directly from a table • Estimation and appropriate rounding off numbers • Identification and direct use of correct formula
Routine procedures ($\approx 45\%$)	• Perform well-known procedures • Simple applications and calculations which might involve many steps • Derivation from given information may be involved • Identification and use (after changing the subject) of correct formula • Generally similar to those encountered in class
Complex procedures ($\approx 20\%$)	• Problems involving complex calculations and/or higher order reasoning • Investigate elementary axioms to generalize them into proofs for straight line geometry, congruence and similarity • No obvious route to the solution • Problems not necessarily based on real world contexts • Making significant connections between different representations • Require conceptual understanding
Problem solving ($\approx 10\%$)	• Unseen, non-routine problems (which are not necessarily difficult) • Higher order understanding and processes are often involved • Might require the ability to break the problem down into its constituent parts

Term 3 Topics 13 and 14: Fractions (common and decimal)

CAPS Suggested Time
13 hours

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
13. Common Fractions	1. Calculations using fractions	Revise addition and subtraction of common fractions, including mixed numbers	7 hours	4.5 hours	This can be cut* ¹	
		Revise finding fractions of whole numbers				
		Revise multiplication of common fractions, including mixed numbers			1.5 hrs	
		Divide whole numbers and common fractions by common fractions				
		Calculate the squares, cubes, square roots and cube roots of common fractions				
	2. Calculation techniques	Revise: Convert mixed numbers to common fractions in order to perform calculations with them	This can be cut			
		Revise: Convert mixed numbers to common fractions in order to perform calculations with them				
		Revise: Use knowledge of equivalent fractions to add and subtract common fractions				
		Use knowledge of reciprocal relationships to divide common fractions	45 min			
		3. Solving problems	45 min			

*1 All revision work in units 1, 2, 4 and 5 of common fractions can be covered in the form of revision notes / Self assessment. This could save 3 hours of teaching time.

Term 3 Topics 13 and 14: Fractions (common and decimal)

CAPS Suggested Time
13 hours

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
14. Decimal fractions	4. Percentages	Revise: finding percentages of whole numbers			This can be cut	
		Revise: calculating the percentage of part of a whole				
		Revise: calculating percentage increase or decrease			45 min	
		Calculate amounts if given percentage increase or decrease				
		Solve problems in contexts involving percentages				
	5. Equivalent forms	Revise common fractions (fractions where one denominator is a multiple of the other)			This can be cut	
		Revise common fraction, decimal fraction and percentage forms of the same number				
	1. Ordering and comparing decimal fractions	Ordering, comparing and place value of decimal fractions to at least 3 decimal places	6 hours	4.5 hours	(45 min)	
		Rounding off decimal fractions to at least 2 decimal places				
		Revise addition, subtraction and multiplication of decimal fractions to at least 3 decimal places				
3. Calculations with decimal fractions	Revise division of decimal fractions by whole numbers			This can be cut*2		
	Extend multiplication to 'multiplication by decimal fractions' not limited to one decimal place					
	Extend division to 'division of decimal fractions by decimal fractions'					
	Calculate the squares, cubes, square roots and cube roots of decimal fractions			Start with familiar numbers that learners can calculate by inspection, so that learners get a sense of how decimal places are affected by division. (90 min)		

*2 All revision work in units 1 and 5 of decimal fractions can be covered in the form of revision notes / Self assessment.

Term 3 Topics 13 and 14: Fractions (common and decimal)

CAPS Suggested Time
13 hours

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
	Calculation techniques (Calculations should not be restricted to positive decimal fractions.)	Use knowledge of place value to estimate the number of decimal places in the result before performing calculations			(90 min)	
	Use rounding off and a calculator to check results where appropriate					
	9. Solving problems	Solve problems in context involving decimal fractions*3			Learners should continue to do context free calculations and solve problems in contexts. (45 min)	
	10. Equivalent forms	Revise common fraction, decimal fraction and percentage forms of the same number			This can be cut	
			 TOTAL HOURS = 13	 TOTAL REVISED HOURS = 9		

*3 See page CAPS 104 for clarification

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
6. Algebraic expressions	1. Algebraic language	Revise: recognize and interpret rules or relationships represented in symbolic form	4.5 hours	9 hours	This can be cut: *4	Grouping Topic 6 and 8 together (Topic 6 Term 1/ Topic 8 Term 2). This will save time on revision. Any content that was not completed in topic 6 (term 1) should be completed here.
		Revise: identify variables and constants in given formulae and equations				
		Recognize and identify conventions for writing algebraic expressions				
		Identify and classify like and unlike terms in algebraic expressions				
		Recognize and identify coefficients and exponents in algebraic expressions				
8. Algebraic expressions	2. Expand and simplify algebraic expressions	Add and subtract like terms in algebraic expressions	9 hours		New content This can be done in 4 lessons 3 hours Focus is on interpreting algebraic expressions and introducing conventions of algebraic language through adding and subtracting like terms.	
		Multiply integers and monomials by monomials, binomials, trinomials				
		Divide monomials, binomials and trinomials by integers or monomials.				
		Simplify algebraic expressions involving the above operations				
		Determine the squares, cubes, square roots and cube roots of single algebraic terms or like algebraic terms				
Determine the numerical value of algebraic expressions by substitution					New content This can be done in 10 lessons (7.5 hours) Focus is on expanding and simplifying algebraic expressions.	
TOTAL HOURS = 13.5					TOTAL REVISED HOURS = 9	

*4 All revision work in unit 1 can be covered in the form of revision notes / Self assessment. This could save 3 hours of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
9. Algebraic equations *5	1. Grade 7 revision	Set up equations to describe problem situations	3 hours	3 hours	Grade 7 Revision can be cut*6 Focus is on solving equations that involve multiplication and division of integers and numbers in exponential form, by inspection only.	Grouping Topic 7, 9 and 22 together (Topic 7 Term 1/ Topic 9 Term 2/ Topic 22 Term 4) will save time on revision.
		Analyse and interpret equations that describe a given situation				
		Solve equations by inspection				
		Determine the numerical value of an expression by substitution.				
		Identify variables and constants in given formulae and equations				
	2. Solve equations	Using additive and multiplicative inverses	3 hours		Focus is on solving equations using additive and multiplicative inverses as well as the laws of exponents.	
		Using laws of exponents				
	3. Use substitution in equations to generate tables of ordered pairs	Use substitution in equations to generate tables of ordered pairs	3 hours		This can be done in 2 lessons 1.5 hours Focus is on using substitution in equations to generate tables of ordered pairs.	
					TOTAL HOURS = 9 	
					TOTAL REVISED HOURS = 3 	

*5 Any content that has not been covered in term one can be covered here.

*6 All revision work in unit 1 can be covered in the form of revision notes / Self assessment.

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY		
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
12. Geometry of straight lines*7	1. Angle relationships	Recognise and describe pairs of angles formed by, <i>perpendicular lines, intersecting lines, parallel lines cut by a transversal</i>	9 hours	9 hours	Gr 7 revision can be cut*8	
	2. Solving problems	Solve geometric problems using the relationships between <i>perpendicular lines, intersecting lines, parallel lines cut by a transversal</i>			This can be done in 4 lessons (3hours) This can be done in 4 lessons (3 hours)	
				 TOTAL HOURS = 9	 TOTAL REVISED HOURS = 9	
Suggested formal assessment for term 3: Assignment: Common and decimal fractions, algebraic expressions and equations. Test: All topics covered in term 3						

*7 This entire topic is repeated in grade 09.

*8 All revision work in unit 1 (definitions) can be covered in the form of revision notes / Self assessment.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
11. Geometry of 2D shapes	1. Classifying 2D shapes	Identify and write clear definitions of triangles in terms of their sides and angles, distinguishing between <i>equilateral triangles</i> , <i>isosceles triangles</i> , <i>right-angled triangles</i>	8 hours	8 hours	Gr 7 Revision can be cut* ⁹ This can be done in 1 lesson (45min)	This Topic follows TOPICS 10: Construction of geometric figures.
		Identify and write clear definitions of quadrilaterals in terms of their sides and angles, distinguishing between: <i>parallelogram</i> , <i>rectangle</i> , <i>square</i> , <i>rhombus</i> , <i>trapezium</i> , <i>kite</i>			Gr 7 revision can be cut This can be done in 2 lessons (90 min)	Constructions serve as a useful context for exploring properties of triangles. (Constructions will be done in grade 9 in 2021)
	2. Similar and congruent 2-D shapes* ¹⁰	Identify and describe the properties of congruent shapes Identify and describe the properties of similar shapes			Gr 7 revision can be cut This can be done in 1 lesson (45 min)	
	3. Solving problems	Solve geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties and definitions.			This can be done in 3 lessons. (135 min)	
					TOTAL HOURS = 8	
					TOTAL REVISED HOURS = 8	

*⁹ All revision work in units 1 and 2 (definitions of triangles in terms of their sides and angles, distinguishing between types) can be covered in the form of revision notes /Self assessment.

*¹⁰ This is revised and expanded on in more detail in grade 9. To save time, rather do this in grade 9.

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING
15. Theorem of Pythagoras	1. Develop and use the Theorem of Pythagoras	Investigate the relationship between the lengths of the sides of a right angled triangle to develop the Theorem of Pythagoras Determine whether a triangle is a right-angled triangle or not if the length of the three sides of the triangle are known Use the Theorem of Pythagoras to calculate a missing length in a right angled triangle, leaving irrational answers in surd form	5 hours	5 hours	New content No trimming
TOTAL HOURS = 5				TOTAL REVISED HOURS = 5	
				CURRICULUM REORGANISATION/ GROUPING	
				This topic repeated in grade 09. More application is required in grade 9. To save time it would be best to cover this in grade 9 instead of grade 8.	

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
16. Area and perimeter of 2D shapes	1. Area and perimeter	Use appropriate formulae to calculate perimeter and area of <i>squares, rectangles, triangles, circles</i>	5 hours	5 hours	Revision can be cut*11 New to grade 8: Calculations with circles	
		Calculate the areas of polygons, to at least 2 decimal places, by decomposing them into rectangles and/or triangles				
		Use and describe the relationship between the radius, diameter and circumference of a circle in calculations				
		Use and describe the relationship between the radius and area of a circle in calculations				
		Solve problems, with or without a calculator, involving perimeter and area of polygons and circles				
	2. Solving problems	Calculate to at least 2 decimal places				
		Use and describe the meaning of the irrational number Pi (π) in calculations involving circles				
		Use and convert between appropriate SI units, including: mm² ↔ cm² ↔ m² ↔ km²				

*11 All revision work in units 1 and 5 of decimal fractions can be covered in the form of revision notes / Self assessment.

Term 4 Topic 17: Surface area and volume of 3D objects

CAPS Suggested Time
5 hours

CAPS CURRICULUM							PEARSON SURVIVAL GUIDE STRATEGY		
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING			
17. Surface area and volume of 3D objects	1. Use appropriate formulae to calculate the surface area, volume and capacity	Cubes	5 hours	5 hours	This can be cut*12				
		Rectangular prisms							
		Cubes							
		Triangular prisms			New content				
	4. Describe the interrelationship between surface area and volume	Cubes							
		Rectangular prisms							
		Triangular prisms							
	7. Solving problems	Solve problems, with or without a calculator, involving surface area, volume and capacity							
		Use and convert between appropriate SI units, including:							
		$\text{mm}^2 \leftrightarrow \text{cm}^2 \leftrightarrow \text{m}^2 \leftrightarrow \text{km}^2$ $\text{mm}^3 \leftrightarrow \text{cm}^3 \leftrightarrow \text{m}^3$ $\text{ml (cm}^3) \leftrightarrow \ell \leftrightarrow \text{kl}$							
			TOTAL HOURS = 5			TOTAL REVISED HOURS = 5			

*12 All revision work in unit 1 can be covered in the form of revision notes / Self assessment.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
23. Graphs	1. Interpreting graphs	Analyse and interpret global graphs of problem situations, with a special focus on the following trends and features: • linear or non-linear • constant, increasing or decreasing	9 hours	4.5 hours	Revision can be cut*13	
		Extend the focus on features of graphs to include: • maximum or minimum • discrete or continuous			New content	
	2. Drawing graphs	Draw global graphs from given descriptions of a problem situation, identifying features listed above			Revision can be cut	
		Use tables of ordered pairs to plot points and draw graphs on the Cartesian plane			New content	
					TOTAL REVISED HOURS = 4.5	

*13 All revision work in unit 1 and 2 of Graphs can be covered in the form of revision notes / Self assessment. This could save 4 hours of teaching time.

CAPS CURRICULUM						PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	
18. Collect, Organize and summarize data *14	1. Collect data	Pose questions relating to social, economic, and environmental issues	4 hours	4.5 hours	Time spent on this can be cut (was covered in Grade 7)*15	Grouped Topics 18, 19 and 20 together.*16	
		Select appropriate sources for the collection of data (including peers, family, newspapers, books, magazines)					
		Distinguish between samples and populations, and suggest appropriate samples for investigation					
		Design and use simple questionnaires to answer questions with multiple choice responses					
		Appropriate and record data using <i>tally marks, tables, stem-and-leaf displays</i> .					
	2. Organize data	Group data into intervals			Revision can be trimmed. No new content (45 min)		
		Summarize data using measures of central tendency, including <i>mean, median and mode</i>			Revision can be trimmed.		
	3. Summarize data	Summarize data using measures of dispersion, including <i>range, extremes</i>			New content (90 min)		
		bar graphs and double bar graphs		3 hours	Revision can be trimmed.		
		histograms with given and own intervals			Only new content: broken-line graphs.		
18. Represent data	1. Draw a variety of graphs by hand/technology to display and interpret data including:	pie charts					
		broken-line graphs					
						2 lessons (90 min)	

14. Provide learners with data
 *15 All revision work in Topics 18, 19 and 20 can be covered in the form of revision notes / Self assessment.
 *16 To not have a break between these topics, try and integrate them so that they are taught together

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
19. Interpret, analyse and report data	1. Interpret data	Critically read and interpret data represented in <i>words, bar graphs, double bar graphs, pie charts, histograms, broken-line graphs</i> .	3.5 hours		Revision can be trimmed.	
	2. Analyse data	Critically analyse data by answering questions ^{*17}			New in grade 8: • extremes • broken line graphs • dispersion of data • error and bias in data	
	3. Report data	Summarize data in short paragraphs ^{*18}				
					TOTAL HOURS = 10.5	TOTAL REVISED HOURS = 4.5
Suggested formal assessments for term 4: Investigation: Area and Perimeter or Surface Area and Volume Examination: see pages 30 and 31						

^{*17} See CAPS page 111 for clarification

^{*18} See CAPS page 111 for clarification

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
1. Whole numbers	1. Mental calculations	Revise multiplication of whole numbers to at least 12×12	6 hours	This can be cut ^{*19}	
	2. Ordering and comparing whole numbers	Revise Prime numbers to at least 100		This can be cut	
	3. Properties of whole numbers	Revise the commutative; associative; distributive properties of whole numbers		This can be cut	45 min
		Revise 0 in terms of its additive property (identity element for addition)			
		Revise 1 in terms of its multiplicative property (identity element for multiplication)			
		Revise recognise the division property of 0, whereby any number divided by 0 is undefined			
	7. Calculations using whole numbers	Revise calculations using all four operations on whole numbers, estimating and using calculators where appropriate		This can be cut	45 min
	8. Calculation techniques	Use a range of strategies to perform and check written and mental calculations with whole numbers including <i>estimation, adding, subtracting and multiplying in columns, long division, rounding off and compensating, using a calculator</i>			
	9. Multiples and factors	Revise prime factors of numbers to at least 3-digit whole numbers		This can be cut ^{*20}	45 min
		Revise LCM and HCF of numbers to at least 3-digit whole numbers, by inspection or factorisation			

*19 All revision work in units 1,2,3 and 4 can be covered in the form of revision notes / Self assessment

*20 All revision work in unit 6 can be covered in the form of revision notes / Self assessment

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
	11. Solve problems involving whole numbers	Comparing two or more quantities of the same kind (ratio)			
		Comparing two quantities of different kinds (rate)			
		Sharing in a given ratio where the whole is given			
		Increasing or decreasing of a number in a given ratio			
		Profit, loss, discount and VAT			
	15. Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts	Budgets			
		Accounts			
		Loans			
		Simple interest			
		Hire Purchase			
		Exchange rates			
				TOTAL HOURS SAVED = 2hrs 15 min	
				TOTAL HOURS = 6	

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
2 Integers	1. Counting, ordering and comparing integers	Revise counting forwards and backwards in integers for any interval	9 hours	This can be cut*21	45 min
		Revise recognising, ordering and comparing integers			
	2. Calculations with integers	Revise addition and subtraction with integers		This can be cut	45 min
		Multiply and divide with integers			
		Perform calculations involving all four operations with integers			
		Perform calculations involving all four operations with numbers that involve the squares, cubes, square roots and cube roots of integers			
	3. Properties of integers	Recognize and use commutative, associative and distributive properties of addition and multiplication for integers			
		Recognize and use additive and multiplicative inverses for integers			
	4. Solving problems	Solve problems in contexts involving multiple operations with integers			
TOTAL HOURS = 9				TOTAL HOURS SAVED = 1.5	

*21 All revision work in units 1 and 2 can be covered in the form of revision notes / Self assessment

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
3. Exponents	1. Mental calculations	Squares to at least 12^2 and their square roots Cubes to at least 6^3 and their cube roots	9 hours	This can be cut ^{*22}	45 min
	3. Comparing and representing numbers in exponential form	Revise compare and represent whole numbers in exponential form Compare and represent integers in exponential form Compare and represent numbers in scientific notation, limited to positive exponents		This can be cut	
	6. Calculations using numbers in exponential form	Establish general laws of exponents, limited to natural number exponents ^{*23} Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers Calculate the squares, cubes, square roots and cube roots of rational numbers			
	9. Solving problems	Solve problems in contexts involving numbers in exponential form			
			TOTAL HOURS = 9	TOTAL HOURS SAVED = 45 min	

*22 All revision work in unit 1 and 2 can be covered in the form of revision notes / Self assessment

*23 See CAPS pg 82 for specification of general laws

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED	
4. Numeric and geometric patterns	1. Investigate and extend patterns	Represented in physical or diagram form	4.5 hrs	Grade 7 revision can be trimmed* ²⁴ Only new content: Patterns represented algebraically.	2 hours	
		Not limited to sequences involving a constant difference or ratio				
		Of learner's own creation				
		Represented in tables				
	2. Describe and justify the general rules for observed relationships between numbers	Represented algebraically				
		in own words				
		in algebraic language				
TOTAL HOURS = 4.5					TOTAL HOURS SAVED = 2	

*24 All revision work in unit 1 and 2 can be covered in the form of revision notes / Self Assessment.

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
Functions and relationships	1. Input and output values	Determine input values, output values or rules for patterns and relationships using <i>flow diagrams, tables, formulae and equations</i>	3 hours	Topics 5 and 21 cover the same content.	5 hours
	2. Equivalent forms	Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented <i>verbally, in flow diagrams, in tables, by formulae and equations</i>	6 hours	If this content was already covered in topic 5, then this whole section (Topic21) can be cut. Include 1 hour to expand focus on using formulae to find output values from given input values, as well as equivalent forms of descriptions of the same relationship.	
				 TOTAL HOURS = 9	 TOTAL HOURS SAVED = 5
<u>Suggested formal assessments:</u> Assignment: Integers, Numeric and Geometric Patterns Test: All work covered in term 1.					

Grade 9

PEARSON SOUTH AFRICA

Mathematics

Grade 9 Overview Mathematics

The table below represents the order of topics as stated in the Senior phase CAPS document. *1

Time allocation Per term: Grade 9							
Term 1		Term 2		Term 3		Term 4	
Topic	Time	Topic	Time	Topic	Time	Topic	Time
Whole numbers	4,5 hours	Construction of geometric figures	9 hours	Functions and relationships	5 hours	Transformation geometry	9 hours
Integers	4,5 hours	Geometry of 2D shapes	9 hours	Algebraic expressions	9 hours	Geometry of 3D objects	9 hours
Common fractions	4,5 hours	Geometry of straight-lines	9 hours	Algebraic equations	9 hours	Collect, organize and summarize data	4 hours
Decimal fractions	4,5 hours	Theorem of Pythagoras	5 hours	Graphs	12 hours	Represent data	3 hours
Exponents	5 hours	Area and Perimeter of 2D shapes	5 hours	Surface Area and volume of 3D objects	5 hours	Interpret, analyse and report data	3,5 hours
Numeric and geometric patterns	4,5 hours					Probability	4,5 hours
Functions and relationships	4 hours						
Algebraic expressions	4,5 hours						
Algebraic equations	4 hours						
revision/ assessment	5 hours	revision/ assessment	8 hours	revision/ assessment	5 hours	revision/ assessment	12 hours
 Total: 45 hours		 Total: 45 hours		 Total: 45 hours		 Total: 45 hours	

Total of 33 weeks teaching time = 150 hours

*1 Highlighted topics indicate those that can be grouped together

Grade 9 National Revised Annual Teaching Recovery Plan 2020

Topic number(S) -As according to CAPS	Revised order For COVID-19 strategy	Topic name	Revised Time taken (Weeks)
TERM 2			
8 and 16	1	Algebraic expressions	1
TERM 3			
8 and 16	2	Algebraic expressions	1
9 and 17	3	Algebraic equations	1
7 and 15	4	Functions and relationships	1
18	5	Graphs	2
11	6	Geometry of straight lines	1
10	7	Geometry of 2D shapes	2
TERM 4			
20	8	Transformation geometry	2
12	9	Theorem of Pythagoras	1
13	10	Area and Perimeter of 2-D shapes	1
18	11	Surface area and volume of 3-D objects	2
22, 23 and 24	12	Data handling	2
25	13	Probability	1
TERM 1 REVISION			
1		Whole numbers	
2		Integers	
3		Common fractions	
4		Decimal fractions	
5		Exponents	
6		Numeric and Geometric patterns	
		Total	17

This order has been considered in relation to the **National Revised Annual Teaching Recovery Plan** proposed by the DBE to accommodate the impact of COVID-19 and is therefore an interim deviation from the original curriculum.

- Topics that are repetitive have been merged and dealt with once, but in depth.

Topics removed from syllabus and covered in grade 9 syllabus of 2021:

- Construction of geometric figures
- Geometry of 3 D objects

Grade 9 Final Examination weightings

TOPICS	PAPER 1		Marks
	CONCEPTS		
Functions and relationships	Input and output values	Equivalent forms	10 ± 2
Algebraic expressions	Expand and simplify algebraic expression	Factorise algebraic expressions	20 ± 2
Algebraic equations	Solve equations		20 ± 2
Graphs	Interpreting graphs	Drawing graphs	25 ± 2
TOTAL			75

TOPICS	PAPER 2					Marks
	CONCEPTS					
Transformation geometry	Transformations		Enlargements and reductions			21 ± 2
Data Handling	Organize and summarize data	Present data	Interpret data	Analyse data	Report data	24 ± 2
Probability	Probability					13 ± 2
Surface Area and Volume of 3D Objects	Surrface area and volume		Calculations and solving problems			17 ± 2
TOTAL						75

Grade 9 Final Examination Cognitive levels

DESCRIPTION AND EXAMPLES OF COGNITIVE LEVELS (P1 and P2)	
Cognitive levels	Description of skills to be demonstrated
Knowledge ($\approx 25\%$)	• Straight recall • Use of mathematical facts • Appropriate use of mathematical vocabulary • Read information directly from a table • Estimation and appropriate rounding off numbers • Identification and direct use of correct formula
Routine procedures ($\approx 45\%$)	• Perform well-known procedures • Simple applications and calculations which might involve many steps • Derivation from given information may be involved • Identification and use (after changing the subject) of correct formula • Generally similar to those encountered in class
Complex procedures ($\approx 20\%$)	• Problems involving complex calculations and/or higher order reasoning • Investigate elementary axioms to generalize them into proofs for straight line geometry, congruence and similarity • No obvious route to the solution • Problems not necessarily based on real world contexts • Making significant connections between different representations • Require conceptual understanding
Problem solving ($\approx 10\%$)	• Unseen, non-routine problems (which are not necessarily difficult) • Higher order understanding and processes are often involved • Might require the ability to break the problem down into its constituent parts

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Algebraic expressions	1. Algebraic language	Revise: Recognize and identify conventions for writing algebraic expressions	9 hours	4.5 hours	This can be cut: *2	According to CAPS, Topics 8 an 16 cover the same topics. Any work that was not covered in topic 8 should be completed in topic 16.
		Revise: Identify and classify like and unlike terms in algebraic expressions				
		Revise: Recognize and identify coefficients and exponents in algebraic expressions				
		Recognize and differentiate between monomials, binomials and trinomials				
	2. Expand and simplify algebraic expressions	Revise: Add and subtract like terms in algebraic expressions			This can be cut	
		Revise: Multiply integers and monomials by <i>monomials, binomials, trinomials</i>				
		Revise: Divide monomials, binomials and trinomials by integers or monomials.				
		Revise: Simplify algebraic expressions involving the above operations				
		Revise: Determine the squares, cubes, square roots and cube roots of single algebraic terms or like algebraic terms				
		Revise: Determine the numerical value of algebraic expressions by substitution				
		multiply integers and monomials by polynomials				
		divide polynomials by integers or monomials				
		the product of two binomials				
		the square of a binomial				

*2 All revision work in units 1 and 2 can be covered in the form of revision notes / Self assessment. This could save 3 hours of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
	3. Factorize algebraic expressions	Factorize algebraic expressions that involve, <i>common factors, difference of two squares, trinomials</i> *3	4.5 hours	4.5 hours	New content. No trimming.	
		Simplify algebraic expressions that involve the above factorisation processes				
		Simplify algebraic fractions using factorisation				
TOTAL HOURS = 13.5					TOTAL REVISED HOURS = 9	

*3 Trinomials to be of the form: $ax^2 + bx + c$ and $x^2 + bx + c$, where a is a common factor

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
17. Algebraic equations *4	1. Grade 8 revision	Set up equations to describe problem situations	9 hours	4.5 hours	This can be cut*5 Prior knowledge: Linear equations, multiplicative inverses, exponents, problem solving skills.	According to CAPS, Topics 9 an 17 cover the same topics. Any work that was not covered in topic 9 should be completed in topic 17.
		Analyse and interpret equations that describe a given situation				
		Solve equations by inspection, using additive and multiplicative inverses, using laws of exponents				
		Determine the numerical value of an expression by substitution.				
		Identify variables and constants in given formulae and equations				
		Use substitution in equations to generate tables of ordered pairs				
	7. Solve equations	using factorisation equations of the form: a product of factors = 0	4 hours	New content This can be done in one week		
TOTAL HOURS = 13					TOTAL REVISED HOURS = 4.5	

*4 Reduced from 9 hours to 4.5 hours and moved to Term 3. New concept is equations that involve factorisation

*5 All revision work in unit 1 can be covered in the form of revision notes / Self assessment. This could save 4.5 hours of teaching time.

Term 3 Topics 7 and 15: Functions and relationships

CAPS Suggested Time
9 hours

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING
Functions and relationships	1. Input and output values	Determine input values; output values or rules for patterns and relationships using flow diagrams; tables, formulae and equations	5 hours	3 hours	Topics 7 AND 15 cover the same content.
	2. Equivalent forms	Determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented verbally, in flow diagrams, in tables, by formulae and equations, by graphs on a Cartesian plane	4 hours		If this content was already covered in topic 7, then this whole section can be cut.
TOTAL HOURS = 9				TOTAL REVISED HOURS = 3	

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
18.Graphs	1. Interpreting graphs	Revise: Analyse and interpret global graphs of problem situations, with a special focus on the following trends and features:	12 hours	6 hours	Revision: This can be cut*6	Reduced from 12 hours to 6 hours.
		- linear or non-linear - constant, increasing or decreasing				
		Revise: features of graphs to include:				
		- maximum or minimum - discrete or continuous			New content	Focus on straight line graphs
		Extend the above with special focus on the following features of linear graphs:				
		- x-intercept and y-intercept - gradient				
2. Drawing graphs	Revise: Draw global graphs from given descriptions of a problem situation, identifying features listed above	12 hours	6 hours	Revision: This can be cut	New content	
	drawing linear graphs from given equations					
	determine equations from given linear graphs					
TOTAL HOURS = 12					TOTAL REVISED HOURS = 6	

*6 All revision work in units 1 and 2 can be covered in the form of revision notes / Self assessment. This could save 4 hours of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
12. Geometry of straight lines	1. Angle relationships	Revise and write clear descriptions of the relationship between angles formed by <i>perpendicular lines, intersecting lines, parallel lines cut by a transversal</i>	9 hours	4.5 hours	Grade 8 This can be cut*7	Reduced from 9 hours to 4.5 hours and moved from Term 2 to Term 3
	2. Solving problems	Solve geometric problems using the relationships between <i>perpendicular lines, intersecting lines, parallel lines cut by a transversal</i>			This is repeated content: No new content. This is repeated content: No new content. This can be done in one week (4.5 hrs)	
					TOTAL HOURS = 9	TOTAL REVISED HOURS = 4.5

*7 All revision work in unit 1 can be covered in the form of revision notes / Self assessment. This could save 4.5 hours of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
11. Geometry of 2D shapes *8	1. Classifying 2D shapes	Revise properties and definitions of triangles in terms of their sides and angles, distinguishing between equilateral triangles, isosceles triangles, right-angled triangles	9 hours	6.5 hours	Grade 8 This can be cut*9	Reduced from 9 hours to 4.5 hours and moved from Term 2 to Term 3
		Revise and write clear definitions of quadrilaterals in terms of their sides and angles, distinguishing between: parallelogram, rectangle, square, rhombus, trapezium, kite				
	2. Similar and congruent triangles	Through investigation, establish the minimum conditions for congruent triangles			New content	
	3. Solving problems	Through investigation, establish the minimum conditions for similar triangles				
		Solve geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties and definitions.				
			 TOTAL HOURS = 9		 TOTAL REVISED HOURS = 6.5	
Suggested formal assessments:						
Assignment: Algebraic expressions, algebraic equations, functions and graphs						
Investigation: Geometry of 2-D shapes						

*8 Provide learners with accurately constructed figures to investigate the properties

*9 All revision work in unit 1 can be covered in the form of revision notes / Self assessment. This could save 3 hours of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
20. Transformation Geometry	1. Transformations	Revise: reflecting a point in the x -axis or y -axis	9 hours	7 hours	This can be cut*10	Reduced from 9 hours to 7 hours. Exclude rotations
		Revise: translating a point within and across quadrants				
		reflection in the line $x = y$			New content	
		Identify what the transformation of a point is, if given the co-ordinates of its image				
		Use proportion to describe the effect of enlargement or reduction on area and perimeter of geometric figures			Revision: Spend less time revising	
	5. Enlargements and reductions	Investigate the co-ordinates of the vertices of figures that have been enlarged or reduced by a given scale factor			New content	
					TOTAL HOURS = 9	TOTAL REVISED HOURS = 7

*10 All revision work in unit 1 can be covered in the form of revision notes / Self assessment. This could save 2hours and 30 min of teaching time.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
13. Theorem of Pythagoras	1. Develop and use the Theorem of Pythagoras	Use the Theorem of Pythagoras to solve problems involving unknown lengths in geometric figures that contain right-angled triangles	5 hours	1.5 hours	This is repeated content: No new content. This can be done in three lessons (135 min)	Moved from Term 3 to Term 4. To be done with Area and Perimeter of 2D shapes for 6 hours
			 TOTAL HOURS = 4.5	 TOTAL REVISED HOURS = 2 hrs 45min		

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
14. Area and perimeter of 2D shapes	1. Area and perimeter	Use appropriate formulae to calculate perimeter and area of <i>Polygons*11 and circles</i>	5 hours	4.5 hours	This can be done in 4 lessons (3 hours)	Moved from Term 2 to Term 4 to be done with Theorem of Pythagoras for 6 hours
		Investigate how doubling any or all of the dimensions of a 2D figure affects its perimeter and its area				
17. Surface area and volume of 3D objects	1. Use appropriate formulae to calculate the surface area, volume and capacity	Cubes	5 hours	5 hours	This can be cut*12 Revision of Nets: cubes/prisms/ pyramids/ cylinders*13 New content	Moved from Term 3 to Term 4
		Rectangular prisms				
		Triangular prisms				
	Cylinders					
	2. Doubling any or all dimensions of right prisms	Investigate how doubling any or all the dimensions of right prisms and cylinders affects the volume				
TOTAL HOURS = 10					TOTAL REVISED HOURS = 9.5	

*11 Polygons can include trapeziums, parallelogram, rhombi & kites

*12 All revision work in unit 1 can be covered in the form of revision notes / Self assessment.

*13 Revision of Nets: cubes/prisms/ pyramids/cylinders can be done as a project.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
22. Collect, Organize and summarize data	1. Collect data	Pose questions relating to social, economic, and environmental issues	4 hours	4.5 hours	Revision can be cut*14	topics 22, 23 and 24 has been merged to reduce teaching time.
		Select appropriate sources for the collection of data (including peers, family, newspapers, books, magazines)			Revision	Provide learners with data to save time, i.e. learners must not collect data.
		Distinguish between samples and populations, and suggest appropriate samples for investigation			New: Select and justify appropriate methods for collecting data	
		Design and use simple questionnaires to answer questions with multiple choice responses			Revision	
	2. Organize data	measures of central tendency			New content only: - Organize data according to more than one criteria - outliers and scatter plots	
		measures of dispersion including extremes and outliers				
		Organize data according to more than one criteria				
	3. Summarize data	Summarize data using measures of central tendency, including <i>mean, median and mode</i>			Revision	
		Summarize data using measures of dispersion, including <i>range, extremes</i>				

*14 All revision work in units 1, 2 and 3 be covered in the form of revision notes / Self assessment

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
23. Represent data	1. Draw a variety of graphs by hand/technology to display and interpret data including:	bar graphs and double bar graphs	3 hours	4.5 hours	New content only: Scatter Plots	
		histograms with given and own intervals			Spend less time revising grade 08 content.	
		pie charts				
		broken-line graphs				
24. Interpret, analyse and report data	1. Interpret data	Scatter plots	3.5 hours		Revision	
		Critically read and interpret data represented in words, bar graphs, double bar graphs, pie charts, histograms, broken-line graph and scatter plots			Focus on: Critically comparing two sets of data related to the same issue	
		Critically compare two sets of data related to the same issue				
		Critically analyse data by answering questions*15				
	2. Analyse data					
	3. Report data	Summarize data in short paragraphs*16				
			TOTAL HOURS = 10.5		 TOTAL REVISED HOURS = 4.5	

*15 Questions to include: data collections methods, summary of data, sources of error and bias in the data.

*16 Include: choosing appropriate summary statistics for the data (mean, median, mode range) and the role of extremes and outliers in the data.

CAPS CURRICULUM					PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	CAPS TIME ALLOCATION	REVISED TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
26. Probability	1. Consider situations with equally probable outcomes	determine probabilities of compound events using two-way tables and tree diagrams	4.5 hours	4.5 hours	Revision can be cut*17	
		determine the probabilities of outcomes of events and predict their relative frequency in simple experiments				
		compare relative frequency with probability and explain possible differences				
					TOTAL REVISED HOURS = 4.5	
					TOTAL HOURS = 4.5	
Suggested formal assessments:						
Test: All topics covered for the term						
Final examination: See page 55						

*17 All revision work can be covered in the form of revision notes / Self assessment

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
1. Whole numbers	1. Properties of whole numbers	Describe the real number system by recognising, defining and distinguishing properties of, <i>natural numbers, whole numbers, integers, rational numbers, irrational numbers</i>	4.5 hours		
	2. Calculations using whole numbers	Revise calculations using all four operations on whole numbers, estimating and using calculators where appropriate		This can be cut*18	45 min
	3. Calculation techniques	Revise Use a range of strategies to perform and check written and mental calculations with whole numbers including <i>estimation, adding, subtracting and multiplying in columns, long division, rounding off and compensating, using a calculator</i>		This can be cut	45 min
	4. Multiples and factors	Use prime factorisation of numbers to find LCM and HCF			
	5. Solve problems involving whole numbers	Comparing two or more quantities of the same kind (ratio) Comparing two quantities of different kinds (rate) direct and indirect proportion			
	6. Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts	Profit, loss, discount and VAT Budgets Accounts and loans Compound interest Simple interest and hire purchase Rentals Exchange rates and commission		New content: • commission • rentals • compound interest	
			TOTAL HOURS = 4.5	TOTAL HOURS SAVED = 1.5	

*18 All revision work in units 2 and 3 can be covered in the form of revision notes / Self assessment

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
2. Integers	1. Counting, ordering and comparing integers	Revise counting forwards and backwards in integers for any interval Revise recognising, ordering and comparing integers	4.5 hours	This can be cut*19	2.5 hours
	2. Calculations with integers	Revise addition and subtraction with integers Multiply and divide with integers Perform calculations involving all four operations with integers Perform calculations involving all four operations with numbers that involve the squares, cubes, square roots and cube roots of integers		This can be cut No new content: Spend less time on this Topic	
	3. Properties of integers	Recognize and use commutative, associative and distributive properties of addition and multiplication for integers Recognize and use additive and multiplicative inverses for integers			
	4. Solving problems	Solve problems in contexts involving multiple operations with integers			
				 TOTAL HOURS = 4.5	 TOTAL HOURS SAVED = 2.5

*19 All revision work in units 1 and 2 can be covered in the form of revision notes / Self assessment

Term 1 Topics 3 and 4: Fractions (common and decimal)

CAPS Suggested Time
9 hours

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
3. Common Fractions	1. Calculations using fractions	All four operations with common fractions and mixed numbers	4.5 hours	This can be cut*20	45 min
		All four operations, with numbers that involve the squares, cubes, square roots and cube roots of common fractions			
	2. Calculation techniques	Revise: Convert mixed numbers to common fractions in order to perform calculations with them		This can be cut	45 min
		Revise: Convert mixed numbers to common fractions in order to perform calculations with them			
		Revise: Use knowledge of equivalent fractions to add and subtract common fractions			
		Revise: Use knowledge of reciprocal relationships to divide common fractions			
	3. Solving problems	Revise: Solve problems in contexts involving common fractions, percentages and mixed numbers, including grouping, sharing and finding fractions of whole numbers			
		Revise: finding percentages of whole numbers			
	4. Percentages	Revise: calculating the percentage of part of a whole		This can be cut	45 min
		Revise: calculating percentage increase or decrease			
		Revise: Calculate amounts if given percentage increase or decrease			
		Revise: Solve problems in contexts involving percentages			

*20 All revision work in units 1, 2, 4 and 5 of common fractions can be covered in the form of revision notes / Self assessment.

Term 1 Topics 3 and 4: Fractions (common and decimal)

CAPS Suggested Time
9 hours

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
4. Decimal fractions	5. Equivalent forms	Revise common fractions (fractions where one denominator is a multiple of the other) Revise common fraction, decimal fraction and percentage forms of the same number		This can be cut	45 min
	1. Calculations with decimal fractions	Multiple operations with decimal fractions, using a calculator where appropriate Multiple operations, with or without brackets, with numbers that involve the squares, cubes, square roots and cube roots of decimal fractions	4.5 hours		
	2. Calculation techniques	Use knowledge of place value to estimate the number of decimal places in the result before performing calculations Use rounding off and a calculator to check results where appropriate			
	3. Solving problems	Solve problems in context involving decimal fractions			
	4. Equivalent forms	Revise common fraction, decimal fraction and percentage forms of the same number		This can be cut*21	1.5 hours
TOTAL HOURS = 9				TOTAL HOURS SAVED = 4.5	

*21 All revision work in units 1 – 4 of decimal fractions can be covered in the form of revision notes / Self assessment.

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
5. Exponents	1. Comparing and representing numbers in exponential form	Revise: compare and represent whole numbers and integers in exponential form	5 hours	This can be cut*22	1.5 hours
		Revise: compare and represent numbers in scientific notation			
		Extend scientific notation to include negative exponents		New content	
	4. Calculations using numbers in exponential form	Revise the general laws of exponents, limited to natural number exponents*23		Revision: Spend less time revising Grade 08	
		Perform calculations involving all four operations with numbers in exponential form			
7. Solving problems	Extend the general laws of exponents to include: integer exponents $a^{-m} = \frac{1}{a^m}$				
	Solve problems in contexts involving numbers in exponential form including scientific notation				
TOTAL HOURS = 5				TOTAL HOURS SAVED = 1.5	

*22 All revision work in unit 1 and 2 can be covered in the form of revision notes / Self assessment

*23 See CAPS pg 124 for specification of general laws

CAPS CURRICULUM				PEARSON SURVIVAL GUIDE STRATEGY	
TOPIC	UNITS	CONTENT SPECIFICATION/CONTENT, CONCEPTS	TIME ALLOCATION	CURRICULUM TRIMMING	TIME SAVED
6. Numeric and geometric patterns	1. Investigate and extend patterns	Represented in physical or diagram form	4.5	No new content Revision Spend less time revising* 24	2.5 hours
		Not limited to sequences involving a constant difference or ratio			
		Of learner's own creation			
		Represented in tables			
		Represented algebraically			
	6. Describe and justify the general rules for observed relationships between numbers	in own words			
in algebraic language					
				 TOTAL HOURS = 4.5	 TOTAL HOURS SAVED = 2.5

Suggested formal assessments:

Assignment: Numeric and geometric patterns

Test: All work covered in term 1

*24 All revision work in unit can be covered in the form of revision notes / Self assessment

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