GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

purpose

.

GRADE: 10
ANNUAL TEACHING PLAN (ATP)
MATHEMATICAL LITERACY
YEAR: 2020

PLEASE NOTE:
This ATP must be used together with CAPS document-
Daily Lesson plans should be based on ATP
Learners should be given at least four activities per week (e.g. class/homework)
Educators should give learners fortnightly informal tests for consolidation

TOPIC	Date	CONTENT/SKILLS TO BE DEVELOPED IN APPROPRIATE CONTEXTS		Date completed	%	Cumulative %
		SECTION / CONTENT	CONTEXT			
TERM 1 09/01 – 15/03						
NUMBERS & CALCULATIONSWITH NUMBERS Basic Skills	**15/01 – 17/01 (3 days)**	**1.Number formats and conventions:** 1.1Decimal comma and decimal point e.g. 1,2 and 1.2 Also use of comma to indicate 1.2Positive and negative numbers as directional indicators 1.3Number expressed in word format, including ✓ 1 hundred thousand-100 000 ✓ 1 million – 1 000 000 ✓ 1 billion – 1000 000 000 1.4 Interpret, understand and use different numbering conventions in contexts and recognize that although these representations looks like numbers, they cannot be manipulated in the same way (that is an "over" in a cricket is completed when 6 balls have passed and 1214 in a building refers to unit 14 on the 12th floor)	e.g. " space" 1000 000 e.g. "comma" 1,000,000 e.g. –10° indicates 10° degrees below freezing point and R300,00 indicates credit while –R300,00 indicates debit		2	2
	20/01 –24/01	**2.1 Perform the following calculations for numbers expressed as whole numbers, fractions, decimals and percentages** 2.1.1 Estimation 2.1.2 add, subtract, multiply and divide whole numbers and decimals both with and without using a calculator. 2.1.3 multiply and divide by 10, 100 and 1000 without a calculator 2.1.4 apply operations in the correct order (BODMAS) 2.1.5 Addition and multiplication facts (distributive /associative) 2.1.6 find the square and the cube of a number with the use of a Calculator And find the square root (√)of a number with the use of a calculator 2.2 **Specific operations on fractions** 2.2.1 add, subtract, multiply and divide with and without the use of a calculator 2.2.2 convert between equivalent forms of fractions 2.2.3 find the decimal equivalent of any fraction using a calculator. 2.3 **Calculator Skills (see CAPS)** 2.4 **Rounding**: Round numbers in the following ways 2.4.1 To a specific number of decimal places or a specific whole number 2.4.2 To nearest **10** in supermarkets 2.4.3 Up or Down 2.4.4 In Context (up or Down)	2.3The following functions can be used on a basic calculator • addition; subtraction; multiplication and division • percentage • "memory" (M+, M-, MRC), " clear" (C) and "clear all" (CE) keys		2	4

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NUMBERS & CALCULATIONSWITH NUMBERS Basic Skills	**27/01– 31/01**	**3. Ratios:** 3.1Perform the following calculations involving ratios: 3.1.1convert between different forms of a ratio 3.1.2determine missing numbers in a ratio 3.1.3divide or share an amount in a given ratio • **with an understanding of:** ✓ *different formats for expressing ratios* ✓ *why no units are included in a ratio* ✓ *equivalent ratios* 3.1.4 how to write a ratio in unit format	e.g. if the scale of a plan is 1:100, e.g. if cement, sand and stone is to be mixed in the ratio 1:2:2 e.g. how many milliliters of tint and peroxide will a hairdresser need to make a 50ml mixture if the tint and peroxide is mixed in the ratio 1:2 e.g. 1:50 and/or $\frac{1}{50}$ e.g. 1:50 = 2:100 e.g.(3:8 can be written as 1:2,667)		2	6
	03/02 – 07/02	**4 Proportion:** **4.1 Perform <u>calculations</u> involving:** 4.1.1 direct proportion 4.1.2 indirect (inverse) proportion 4.2 **<u>Interpret graphs representing</u> situations** involving direct and inverse proportion and illustrating the difference between the two types of proportion	e.g. if the cost of a trip is R5,00 per km, then an 85km trip will cost R5,00/km × 85km = R425,00; if 50m² of carpeting costs R1 750,00;then 1m² of carpeting will cost R1 750,00 ÷50=R35,00 e.g. A soccer season ticket costs R800,00.If you watch only game during the season, the cost per game is R800,00; for two games the effective cost per game is R400,00;and so on		2	8
	10/02 – 14/02	**5. Rates:** 5.1 **Calculate** the following types of rates: 5.1.1 cost rates 5.1.2 consumption rates-- time recording formats 5.1.3 distance, time and speed rates and 5.1.4 more complex rates (fuel consumptions) • **with an awareness of** ✓ *the meaning of "/" as **per** and the relevance of this term in relation to the values in the rate* ✓ *the difference between <u>constant and average</u> rates* ✓ how to write **rates in unit form**, ✓ to simplify and compare rates	e.g. price of chicken in Rand/kg e.g. petrol consumption rate of a car in litres/km e.g. average speed of a car in km/h e.g. petrol consumption of a car expressed in litres/100km e. g. the running speed of a marathon runner measured in min/km e.g. the price of chicken in Rand/kg is a constant rate while the speed of a car in km/h is an average rate		2	10
	17/02 – 21/02	**6. Percentage:** 6.1 Perform the following **percentage <u>calculations</u>**: 6.1.1 calculate percentage of a value 6.1.2 increase a value by a percentage 6.1.3 decrease a value by a percentage 6.1.4 express a part of a whole as a percentage 6.2 **Determine the percentage increase and/or decrease** 6.3 **Determine the original value** when given a value to which a percentage has been added or subtracted 6.4 <u>Understand and work with</u> 6.4.1 the equivalence of the different formats 50%, $\frac{50}{100}$ and 0,5 6.4.2 how to move interchangeably from fractions to Percentage 6.4.3 how to consvert from percentage to decimals with the use of a calculator	e.g. if 14% discount is offered on a R200,00 pair of shoes, how much discount will you receive e.g. if a bottle of milk that costs R8,20 increases in price by 5%,what will the new price of the milk be? e.g. if a learner scores a mark of 42/60 for a test, what percentage was scored for the test? e.g. if a price of a bag of meal increases from R48,99 to R52,49 by what percentage has the price increased? e.g. if the price of a pair of shoes after discount is R325,00 what was the original price of the shoes?		2	12

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PATTERNS AND RELATIONSHIPS Basic Skills	**24/02 – 28/02**	**7. Making sense of graphs that tell a story:** 7.1 Work with variety of graphs found in newspapers, magazines, and other resources for which there are no obvious or available equations and/or patterns between the variables represented in the graphs Recognize that : ✓ graphs tell a story and be able to explain the story /message /impression represented in a graph ✓ graphs represent a relationship between two or more items/ quantities and be able to identify those items and describe the relationship Recognize and describe ✓ how the shape and direction of a graph and changes to the shape/ direction affect the story/message represented in the graph ✓ the meaning of different points on the graph	• in order to ✓ recognize that graphs tell a story and be able to explain the story/message/impression		2	14
	02/03 – 06/03	**8. Patterns and relationships:** 8.1 **Fixed/constant** Relationships 8.2 Relationships where there is a **constant difference** between the terms in the relationship (that is, direct proportion relationships and other linear relationships). 8.3 Relationships where there is an **inverse proportion** between the terms in the relationship 8.4 **Determine formulae and/or equations** to describe relationships represented in tables and/or graphs 8.4.1 constant(fixed) relationships 8.4.2 linear relationships 8.4.3 inverse proportion relationship 8.5 **Know, understand and use terminology**: ✓ dependent and independent variables ✓ discrete and continuous variables ✓ increasing and decreasing relationships ✓ Critical values: minimum, maximum and zero values	8.4.2. The cost of petrol increases at a constant rate of R7,50 for every litre of petrol bought., design a table. 8.4.3. The table showing how much each teacher who is part of a taxi hire scheme will have to pay per month for the hire of the taxi as dependent on the number of people who are part of the scheme		2	16
	09/03 – 13/03	**9.Representations of relationships in tables, equations and graphs** Working with relationships represented in tables, equations and graphs 9.1 **completing a table of values** by reading values **from a graph** 9.2 **plotting a graph** from the values in a table 9.3 using a **given formula and/or description** of a relationship to **construct a table of values** 9.4 **matching formulae/equations to graphs and/or tables of values** of the relationship based on features and/or trends			2	18
	16/03 – 20/03	**10. Conversions :** 10.1 Convert units of measurement from memory for **the metric system:** mm - cm - m - km ml - ℓ g - kg – ton 10.2 **time conversions:** sec - min - hours – days-weeks - months 10.3 Convert units of measurement using given conversion **factors and/or tables:** spoons – mℓ and cups – ml	e.g. for cooking conversions spoons - ml cups – ml e.g. household baking/cooking /catering projects		2	20
POA		**INVESTIGATION or ASSIGNMENT AND CONTROLLED TEST**				

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TERM 2 02/04 – 14/06						
FINANCES	**31/03 – 03/04 (4 days)**	**11.Financial documents:** **Work with the following financial documents:** **documents relating to personal and/or household finance**, including: 11.1 household bills (electricity 11.2 shopping documents 11.3 banking documents* 11.4 household budgets	*See CAPS for terminology* -electricity, water, telephone, cell phone - till slips - bank statements and fee structures and account statements - household budgets		3	23
	06/04-09/04 (4 days)	**12 Tariff system :** 12.1 Calculate costs using given tariffs and/or formulae. 12.1.1 Electricity, water sewage 12.1.2 Telephone 12.1.3 Banking fees 12.1.4Transport 12.2 Draw and interpret graphs of various tariffs systems.	• Work with the following tariff systems: ✓ municipal tariffs (e.g. electricity; water; sewage) ✓ telephone tariffs (e.g. cell phone and fixed line) ✓ transport tariffs (e.g. bus, taxi and train tariffs) ✓ bank fees.		5	28
MEASUREMENT	**14/04-17/04 (4 days)**	**13 Time:** Read, record and perform calculations involving time values, including: 13.1 time values expressed and/or recorded on watches, clocks and stopwatches 13.2 time values expressed in the following formats: time of day formats 13.3 calculating elapsed time involving the different time formats (13.4 calendars showing days, weeks and months 13.5 timetables, including: study timetables and television timetable	e.g. 8 o'clock, 8:00 am, 8:00 pm, 20:00 e.g. *the amount of time that has passed from 8:45 am to 9:17 am;*		2	30
	20/04-24/04	**14 Measuring length and distance:** Determine length and/or distance **using appropriate measuring instruments**, including: 14.1"rule or thumb" methods (e.g. One metre is approximately the length from the shoulder to the fingertips when arms are outstretched) 14.2 rulers; measuring tapes; trundle wheels 14.3 odometers 14.4 scales (maps) **15 Measuring mass(weight)** Determine mass (weight) **using appropriate measuring instruments**, including: 15.1 bathroom scales 15.2 kitchen scales 15.3 electronic scales for weighing large objects	• Calculate ✓ the cost associated with travelling a certain distance ✓ the time taken to complete a journey ✓ speed(distance travelled in terms of time) e.g. household baking/cooking/catering projects e.g. calculate the cost of 2,3kg of bananas at R8,20/kg e.g. ingredients in cooking and baking; quantities of drinks needed for a function; volume of concrete needed for a foundation trench		3	33

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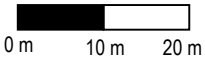
MEASUREMENT	**28/04 – 30/04 (3 days)**	**16 Measuring volume :** Determine volume using **appropriate measuring instruments**, including: 16.1 measuring spoons and cups 16.2 jugs, bottles and/or canisters 16.3 buckets and wheelbarrows **17 Measuring temperature:** Measure, monitor and interpret values **using appropriate instruments** and/or resources, including: 17.1 thermometer 17.2 temperature dials and indicators 17.3 weather reports	Calculate the cost of a certain volume of a product e.g. calculate the cost of 2,5 litres of milk at 7,99/litre e.g. on a stove or a refrigerator		3	36
	04/05 –08/05	**18 Calculating perimeter, area (including surface area)** Calculate the perimeter, area (including surface area) and **measure volume** of objects: **(VOLUMES NOT TO BE CALCULATED IN GR 10** 18.1 Direct measurement (perimeter using rulers, etc.; area using grids, etc.; and volume using measuring jugs, etc.) 18.2 Calculation of perimeter and area of 2-dimensional shapes Calculation for **each of the following**: (a)rectangles, (b) triangles and (c) circles (quarter, semi and three-quarters) using known formulae	e. g. tiles are bought in whole tiles and not in m^2; spreading rates for paint are estimates only; certain products, such as wood and carpet, are sold in running metres of a given width and not according to area. e.g. When working out paint quantities estimation is appropriate; but when working with medicine dosages, accuracy is essential		4	40
MAPS, PLANS AND OTHER REPRESENTATIONS	**11/05 – 15/05**	**19 Scale :** **Work with both the following types of scales** on maps, plans and in the construction of models:+ 19.1 number scales expressed in the form 1:500 19.2 bar scales expressed in the form  19.3 Calculate actual length and distance when map and/or plan measurements are known **20 Maps :** 20.1 Map showing the seating plan and/or layout of a classroom 20.2 Map showing the layout of the buildings and/or sports fields at a school 20.3 Map showing the layout of the stores in a shopping centre 20.4 Seating plans for cinemas and a sports stadium	Describe the position of an object (e.g. buildings, furniture, seats) in relation to surrounding objects. Describe the position of a building in relation to surrounding buildings (e.g. the building is directly across the road from the double-storey brick building). Find locations, follow directions and develop directions for travelling between two or more locations using the following mapping reference systems and/or techniques: directional indicators "left", "right", "along", "straight", "up" and "down" house and/or building numbering systems		8	48

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PROBABILITY	**18/05 – 22/05**	**21 Expressions of probability and prediction :** Work with situations involving probability, including: 21.1 games that make use of coins and dice 21.2 weather predictions 21.3 Recognize the difference between the following terms: 21.3.1 event 21.3.2 outcome/result 21.4 Recognize that probability is expressed using a scale that ranges between: • 0 (events that cannot take place - impossible events) • 1 or 100% (events that are certain to take place) 21.5 Recognize that the probability of an event is expressed using fractions, percentages and decimal notation.	e.g. Although there is always a chance that someone may win a lottery, this does not mean that there will always be a winner every time the lottery is played. e.g. The theoretical probability of a tossed coin landing on head is ½ (50%)		8	56
	25/05 -29/05	**REVISION**				
	01/06 – 12/06	**HALF YEARLY EXAMINATION**				
	POA	**INVESTIGATION or ASSIGNMENT AND HALF YEARLY EXAMINATION**				

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		TERM 3 09/07 – 20/09				
FINANCE	**07/07 – 10/07** **4 days** **13/07 – 17/07**	**22 Income, expenditure, profit/loss, income-and expenditure statements and budgets :** 22.1 Identify and perform calculations involving income, expenditure, profit and loss values, including: Fixed, variable and occasional income values and fixed, variable, occasional, high-priority and low-priority expenditure values from the <u>following sources</u>: **A Personal income** ✓ salaries, wages and commission ✓ gifts and pocket money ✓ bursaries and loans ✓ savings ✓ interest ✓ inheritance **B Personal expenditure** ✓ living expenses (e.g. food, clothing) ✓ accounts (e.g. electricity and water) ✓ telephone ✓ fees (e.g. school fees and bank fees) ✓ insurance (e.g. car ,household) ✓ loan repayments (e.g. store accounts) ✓ personal taxes ✓ savings	• Analyzing and preparing income-and-expenditure statements and budgets. ✓ an individual and/or household ✓ a trip (e.g. holiday) ✓ personal projects (e.g. dinner party; significant purchases such as a cell phone, television or furniture)		7	63
	20/07 – 24/07	**23 Interest:** 23.1 Perform calculations involving simple and compound interest through <u>manual calculations</u> and without the use of formulae 23.2 Represent simple interest growth scenarios using linear graphs and compound interest growth scenarios using graphs showing compound change	• Work with various banking and other financial documents (e.g. bank statement; account statements showing interest rates on a debit balance) • Distinguish between “interest rate” and “interest” values		4	67
	27/07 – 31/07 **03/08 – 07/08**	**24 Banking** 24.1 Investigate the <u>following types of bank accounts</u>: ✓ savings account ✓ cheque/current account ✓ fixed deposit account ✓ credit account (with a credit card) and a debit account (with a debit card) 24.2 Interpret banking documents (e.g. *bank statements and fees brochures*) and understand the terminology in the documents 24.3 Determine bank charges for different types of accounts using given fee tables and formulae. 24.4 Draw graphs from given bank charge formulae to represent bank charges for different transaction amounts on different types of accounts.	• <u>Terminology in the documents</u> ✓ opening and closing balance ✓ debit, credit and interest ✓ stop order and debit order ✓ ATM and bank charge or transaction fee ✓ electronic transfer and payment ✓ credit rates and debit rates ✓ payment, interest, deposit and withdrawal		**4**	71

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FINANCE	**11/08 – 14/08 (4 days)** **17/08 – 21/08**	**25 Taxation (VAT) :** 25.1 Work with VAT in the context of shop purchases, till slips and bills (e.g .electricity, water, telephone) 25.2 Develop an understanding of the difference between a VAT inclusive" value and a value "excluding VAT".- 25.3 Investigate through calculation how a final price has been determined by adding relevant % VAT to a price excluding VAT. 25.4 Investigate through calculation the amount of VAT that has been added to a "VAT inclusive" price.			2	73
MAPS, PLANS AND OTHER REPS	**24/08 – 28/08**	**26 Models :** 26.1Investigate packaging arrangements using actual cans and a range of actual boxes. 26.2 Determine the most appropriate way to package cans and/or boxes for optimal use of space. 26.3 Determine the most cost-effective way to package a number of cans and/or boxes.			2	75
	31/08 – 04/09	**27 Plans(instruction/assembly diagrams)** Use instruction/assembly diagrams, containing words and/or pictures, found in manuals for: ✓ plugs ✓ plastic models ✓ unassembled wooden furniture units ✓ cell-phones(e.g. installing a battery and sim card; or operating instructions) ✓ electrical appliance that require individual components to be connected (e.g. connecting speakers to a hi-fi; or connecting an aerial to a television) ✓ Children's toys including Lego-type kits.			3	78
MAPS, PLANS AND OTHER REPS	**07/09 – 11/09**	**28 Plans (floor and design plan/) :** Use the following plans: rough and scaled floor/layout plans showing a top view (perspective 28.1 Understand the symbols and notation used on plans 28.2 Describe what is being represented on the plans. 28.3 Analyze the layout of the structure shown on the plan and suggest alternative layout options. 28.4 Determine actual lengths of objects shown on plans using measurement and a given scale (number or bar scale). 28.5 Determine quantities of materials needed by using the plans and perimeter, area and volume calculations	• a familiar structure (e.g. classroom, room in a house—bedroom or lounge) e.g. the symbol for a window is a double line; the symbol for a door is a vertical line attached to a quarter circle indicating the swing direction of the door.		4	82
14/09 – 18/09		**REVISION**				
POA	**INVESTIGATION OR ASSIGNMENT AND CONTROLLED TEST**					

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	TERM 4 01/10 – 04/12					
DATA HANDLING	**01/10 – 04/10 (4 days)**	**29.1Developing Questions :** • Develop a question or set of questions that requires the collection of single sets • Recognize that the way in which questions are phrased can impact on the data collected and, therefore, on the findings of the investigation.	investigate problems relating to the personal lives of learners		3	85
		29.2 Collecting Data : • Develop and use an appropriate form/instrument for collecting **single set** including: ✓ observation ✓ interview ✓ questionnaire or survey with an awareness of the following: ○ the situations for which the different types of data collection instruments are most appropriate and the advantages and disadvantages of each type ○ the difference between a "population" and a "sample" ○ how to select an appropriate sample from a population ○ the impact that the choice of sample will have on the reliability of the data collected	Collect data on problems being investigated relating to the personal lives of learners		3	88
	07/10 – 11/10	**29.3 Classifying and Organizing Data :** 29.3.1 Classify collected data as: ✓ categorical data (e.g. male/female; type of car) ✓ numerical data, further classified as discrete data (e.g. number of people; number of cars) and continuous data (e.g. weights; rainfall) 29.3.2 Sort collected numerical data according to **one.** (e.g. Sort data relating to the heights of the learners in a class according to height only; or according to both gender and height; or according to gender, height and class. 29.3.3 Group collected data using intervals (where appropriate) (e.g. It is often appropriate to group test scores in the mark intervals "0-29"; "30-39"; etc.). 29.3.4 Organise collected data using: ✓ tallies ✓ frequency tables	Transform the data into a form that can be analysed, or into a form that can be more easily summarised and/or represented, to find answers to the question(s) posed on issues relating to the personal lives of learners		4	92

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DATA HANDLING		**29.4 Summarizing Data :** Summarise single sets of collected data; using following measures of central tendency and spread (for ungrouped data only): 29.4.1 mean 29.4.2 median 29.4.3 mode 29.4.4 range with an understanding of the following: ✓ the **function/purpose of the measures of central tendency and spread** ✓ the measure of central tendency referred to when the term "average" is used ✓ Analyse calculated and/or given measures of central tendency and/or spread.	Recognise trends at different places in the data to facilitate finding answers to the questions posed on issues relating to the personal lives of learners.		4	96
	14/10 – 18/10	**29.5 Representing Data :** Represent single set of collected data using: 29.5.1 pie charts* 29.5.2 histograms 29.5.3 single bar graphs 29.5.4 line and broken line graphs with an understanding of the following: ✓ that each type of representation offers a different picture of the data and that certain types of representations are more appropriate for particular types of data ✓ the effect that the scale of a set of axes and the point at which the axes cross can have on the impression created by a graph. Read information from graphs and, if necessary, use estimation to determine values on the graphs.¨ **29.6 Analyse data presented in graphs.**	e.g. Although it would be possible to use a pie chart to show the monthly rainfall in a town, it would be difficult to identify trends in the rainfall pattern from this chart. A bar graph and especially a line graph would allow for a much more in-depth analysis of the trends in the rainfall data. Identify trends in data to answer the questions on the personal lives of learners.		4	100
19/10 – 23/10		REVISION				
26/10 – 30/11		FINAL EXAMINATION				
POA		INVESTIGATION OR ASSIGNMENT AND FINAL EXAMINATION				