Republic of the Philippines
Department of Education
REGION VII – CENTRAL VISAYAS
Division of Cebu Province

Office of the Schools Division Superintendent

March 11, 2020

DIVISION MEMORANDUM
No. 124, s. 2020

LIST OF SCHOOL SUPPLIES AND OTHER CONSUMABLES BY SUBJECT AREA

To: Assistant Superintendents
Chiefs, CID and SGOD
Education Program Supervisors/Coordinators
District Supervisors/OICs
Elementary and Secondary School Heads

1. Pursuant to DepEd Order No. 8, s. 2019, entitled "Revised Implementing Guidelines on the Direct Release, Use, Monitoring and Reporting of Maintenance and Other Operating Expenses (MOOE) Allocation of Schools, Including Other Funds Managed by Schools", this Office is hereby disseminating the **List of School Supplies and Other Consumables By Subject Area** which may be procured for the teachers and students deemed necessary in the conduct of classes.

2. Procurement of school supplies and other consumables to be used in class shall be based on this list. The materials in the list shall be made available and accessible to teachers and learners in performing tasks for the achievement of the desired learning outcomes.

3. Immediate and wide dissemination of this Memorandum is directed.

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Republic of the Philippines
Department of Education
REGION VII – CENTRAL VISAYAS
SCHOOLS DIVISION OF CEBU PROVINCE

List of Tools and Equipment

I. Edukasyon sa Pagpapakatao (EsP)

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
1. Napahahalagahan ang magaling at matagumpay na mga Pilipino sa pamamagitan ng; 1.1.Kuwento ng kanilang pagsasakripisyo at pagbibigay ng sarili para sa bayan	projector, larawan ng mga bayani, meta strips/cards, Filipino Values charts
2. Naisasakilos ang pagtupad sa mga batas pambansa para sa kaligtasan sa; 2.2. daan 2.3. pag-abuso sa paggamit ng ipinagbabawal na gamut	Road Safety Education Modules Drug Education Manuals
3. Nakapagninilay ng katotohanan mula sa mga; 3.1. balitang napakinggan 3.2. patalastas na nabasa/narinig 3.3. napanood na programang pantelebisyon 3.4. nababasa sa internet at mga social media	cassette recorder lapel, microphone television set computer

II. Filipino

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
1. Naisasakilos ang napakinggang awit	casette with tapes
2. Napagyayaman ang talasalitaan	Filipino dictionary
3. Nakasasagot sa mga tanong tungkol sa nabasang kuwento	story books
4. Nasasagot ang mga tanong tungkol sa usapan	lapel, microphones
5. Nabibigyang kahulugan ang patalastas	computer, projector, video clips
6. Nasasagot ang mga tanong sa binasang tekstong pang impormasyon	Newspapers
7. Nabibigyang-kahulugan ang mapa	Maps
8. Naiuugnay amg mga argumentong nakuha sa mga artikulo sa pahayagan, magasin, at iba pa sa nakasulat na akda	newspapers, magazines

III. Edukasyong Pantahanan at Pangkabuhayan (EPP)

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
INFORMATION AND COMMUNICATIONS TECHNOLOGY	
1. Naipapaliwanag ang mga panuntunan sa paggamit ng computer, internet, at email 2. Nagagamit ang computer, internet, at email sa batas at responsableng pamamaraan 3. Nagagamit ang computer file system, web browser, at basic features ng isang switch engine at iba't – ibang uri ng formolasyon	1 set computer desktop, TV set, projector

AGRICULTURAL ARTS	
4. Naipapakita ang wastong pamamaraan sa pagpapatubo at pagtatanim 5. Naipapaliwanag ang ilang paraan sa pagtatanim tulad ng layering and marcotting 6. Naisasagawa ang masistemang pagbubungkal ng lupa, pag-aabono organiko 7. Naisasagawa ang wastong pag-aari	rake, shovel, wheelbarrow, soil knife, hard towel, crowbar, spade, garden scissors, garden hoe, hard trowel, watering can (sprinkler), grasscut saw, axe, digging shovel/spade
INDUSTRIAL ARTS BASIC MEASUREMENT	
8. Nakikilala ang mga kagamitan sa pagsusukat 9. Natatalakay ang kahalagahan ng kaalaman at kasanayan sa basic sketching, shading, at outlining	rulers, drawing compass, protractors, T-square, divider, set square, drawing calipers, and French curve
INDUSTRIAL ARTS/ELECTRICAL GADGETS	
10. Identifies materials and tools needed in making simple electrical gadgets and simple repairs 11. Repairs broken furniture chairs, cabinets, and tables, door knobs	electrical pliers, wire strippers, power drills, screw drivers (flat head & Philip), power saw, multi-tester

IV. Math

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
GRADE ONE (FIRST QUARTER)	
1. Visualizes and represents numbers from 0 to 100 using a variety of materials. 2. Counts the number of objects in a given set by ones and tens. 3. Identifies the number that is one more or one less from a given number. 4. Visualizes, represents, and compares two sets using the expressions "less than," "more than," and "as many as." 5. Visualizes and count by2s, 5s and10s through 100 6. Visualizes, represents, and compares numbers up to 100 using relation symbols. 7. Visualizes, represents, and orders numbers up to 100 in increasing or decreasing order. 8. Identifies the 1st, 2nd, 3rd, up to 10th object in a given set from a given point of reference.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
9. Composes and decomposes a given number. e.g. 5 is 5 and 0, 4 and 1, 3 and 2, 2 and 3, 1 and 4, 0 and 5.	number bonds charts, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
10. Regroups sets of ones into sets of tens and sets of tens into hundreds using objects. 11. Visualizes, represents, and orders sets from least to greatest and vice versa.	cuisenaire, rods/number, sticks (250 pcs/set), place value charts/mats, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.), beads (Ø16mm)
12. Reads and writes numbers up to 100 in symbols and in words.	number cards, number charts, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
13. Visualizes and gives the place value and value of a digit in one- and two-digit numbers 14. Renames numbers into tens and ones.	place value pocket, chart, place value mats, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
15. Reads and writes ordinal numbers: 1st, 2nd, 3rd up to 10th.	number cards
16. Recognizes and compares coins and bills up to PhP100 and their notations.	play money

GRADE ONE (SECOND QUARTER)	
1. Illustrates addition as "putting together or combining or joining sets"	plastic chips (60 pcs/set)
2. Visualizes and adds two one-digit numbers with sums up to 18 using the order and zero properties of addition. 3. Visualizes and adds three one-digit numbers using the grouping property of addition. 4. Visualizes and adds two to three one digit numbers horizontally and vertically. 5. Uses expanded form to explain the meaning of addition with regrouping. 6. Visualizes and adds numbers with sums through 99 without or with regrouping. 7. Adds mentally two to three one- digit numbers with sums up to 18 using appropriate strategies. 8. Adds mentally two-digit numbers and one-digit numbers with regrouping using appropriate strategies. 9. Visualizes and solves one-step routine and non-routine problems involving addition of whole numbers including money with sums up to 99 using appropriate problem solving strategies. 10. Creates situations involving addition of whole numbers including money. 11. Illustrates subtraction as "taking away" or "comparing" elements of sets. 12. Illustrates that addition and subtraction are inverse operations. 13. Visualizes, represents, and subtracts one-digit numbers with minuends through 18 (basic facts) 14. Visualizes, represents, and subtracts one- to two-digit numbers with minuends up to 99 without regrouping. 15. Visualizes, represents, and subtracts one- to two-digit numbers with minuends up to 99 with regrouping. 16. Visualizes, represents, and solves routine and non-routine problems involving subtraction of whole numbers including money with minuends up to 99 with and without regrouping using appropriate problem solving strategies and tools. 17. Creates situations involving subtraction of whole number including money.	playdoh/clay, popsicle sticks, two-color counters, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
18. Adds two one-digit numbers using appropriate mental techniques e.g. adding doubles and/or near-doubles.	popsicle sticks , two-color counters, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
19. Uses the expanded form to explain subtraction with regrouping.	place value charts
20. Subtracts mentally one-digit numbers from two-digit minuends without regrouping using appropriate strategies.	decomposition cards, popsicle sticks, two-color counters, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
GRADE ONE (THIRD QUARTER)	
1. Counts groups of equal quantity using concrete objects up to 50 and writes an equivalent expression. E.g. 2 groups of 5 2. Visualizes, represents, and separates objects into groups of equal quantity using concrete objects up to 50. E.g. 10 grouped by 5s	plastic chips (60 pcs/set), square, units/tiles (2.54 x 2.54cm, plastic), bead (ø16mm), manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, popsicle sticks, etc.) lego bricks

3. Visualizes and identifies ½ and ¼ of a whole object. 4. Visualizes, represents, and divides a whole into halves and fourths. 5. Visualizes and draws the whole region or set given its ½ and/or ¼	fraction set
6. Visualizes, and divides the elements of sets into two groups of equal quantities to show halves. 7. Visualizes, represents, and divides the elements of sets into four groups of equal quantities to show fourths	plastic chips (60 pcs/set), square units/tiles (10cm x 10cm,plastic), manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, popsicle sticks, etc.)
8. Draws the four basic shapes. 9. Identifies, names, and describes the four basic shapes (square, rectangle, triangle and circle) in 2-dimensional (flat/plane) and 3-dimensional (solid) objects. 10. Constructs three dimensional objects (solid) using manipulative materials. 11. Compares and classifies 2dimensional (flat/plane) and 3dimensional (solid) figures according to common attributes.	cutouts of shapes basic 3-dimensional models, pattern blocks (250 pcs/set)
12. Determines the **missing term/s** in a given **continuous pattern** using **one attribute** (letters/ numbers/events). E.g. A,B,C,D,__ 2,3,__5,6,7 __,Wed, Thur, Fri Aa, Bb, Cb, __,___ 13. Determines the missing term/s in a given repeating pattern using one attribute (letters, numbers, colors, figures, sizes, etc.). e.g. A,B,C,A,B,C,A,__ 14. Identifies and creates patterns to compose and decompose using addition. E.g. 7 = 0 + 7, 1 + 6, 2 + 5, 3 + 4, 4 + 3, 5 + 2, 6 + 1, 7 + 0	worksheets
15. Constructs equivalent number expression using addition and subtraction. E.g. 6 + 5 = 12 – 1	number blocks
16. Visualizes and finds the missing number in an addition or subtraction sentence using a variety of ways e.g. n + 2 = 5 5 – n = 3	decomposition cards/number bonds
GRADE ONE (FOURTH QUARTER)	
1. Tells the days in a week; months in a year in the right order. 2. Determines the day or the month using a calendar.	calendar
3. Tells and writes time by hour, half-hour and quarter-hour using analog clock.	manipulative clock, blackboard
4. Solves problems involving time (days in a week, months in a year, hour, half hour, and quarter-hour)	calendar, manipulative clock
5. Compares objects using comparative words: short, shorter, shortest; long, longer, longest; heavy, heavier, heaviest; light, lighter, lightest.	manipulatives
6. Estimates and measures length using non-standard units of linear measures	rulers
7. Estimates and measures mass using non-standard units of mass measure. 8. Estimates and measures capacity using non-	double-pan, balance (500g)

standard unit.	
9. Collects data on one variable through simple interview 10. Sorts, classifies, and organizes data in tabular form and presents this into a pictograph without scales.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
11. Infers and interprets data presented in a **pictograph without scales**. e.g. finding out from the title what the pictograph is all about, comparing which has the least or greatest ...	show me boards, worksheets, cutouts
12. Solves routine and non-routine problems using data presented in pictograph without scales. 13. Tells whether an event is likely or unlikely to happen.	worksheets
14. describe events in real-life situations using the phrases " likely" or "unlikely to happen". e.g. Tomorrow it will rain.	roulette, colored papers, sets of pictures, colored rubber bands, colored marbles
GRADE TWO (FIRST QUARTER)	
1. Visualizes and represents numbers from 0-1000 with emphasis on numbers 101 – 1 000 using a variety of materials.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.), number discs, representations using number discs, blocks and grids
2. Groups objects in ones, tens, and hundreds.	cuisenaire, rods/number, sticks (250 pcs/set)
3. Gives the place value and finds the value of a digit in three-digit numbers.	place value pocket, chart
4. Visualizes and counts numbers by 10s, 50s, and 100s.	number discs, blocks, flats, longs & squares, representations using number discs, blocks and grids, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
5. Reads and writes numbers up to 1 000 in symbols and in words.	number words, number cards
6. Visualizes and writes three-digit numbers in expanded form.	number discs, blocks, flats, longs and squares
7. Visualizes and compares numbers up to 1 000 using relation symbols. 8. Visualizes and orders numbers up to 1 000 in increasing or decreasing order.	worksheets, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
9. Identifies the 1st through the 20th with the emphasis on 11th to 20th object in a given set from a given point of reference. 10. Reads and writes ordinal numbers from 1st through the 20th. 11. Identifies and uses the pattern of naming ordinal numbers from 1st to the 20th.	cutouts, number cards
12. Reads and writes money in symbols and in words through PhP100. 13. Counts the value of a set of bills or a set of coins through PhP100 (peso coins only; centavo-coins only; peso-bills only and combined peso-coins and peso-bills). 14. Compares values of different denominations of coins and paper bills through PhP100 using relation symbols.	play money

15. Illustrates the properties of addition (commutative, associative, identity) and applies each in appropriate and relevant situations.	plastic chips (60 pcs/set)
16. Visualizes, represents, and adds 2-digit by 3-digit numbers with sums up to 1000 without and with regrouping. 17. Visualizes, represents, and adds 3-digit by 3-digit numbers with sums up to 1000 without and with regrouping. 18. Adds mentally 1- to 2-digit numbers with sums up to 50 using appropriate strategies. 19. Adds mentally 3-digit numbers and 1-digit numbers using appropriate strategies. 20. Adds mentally three -digit numbers and tens (multiples of 10 up to 90) using appropriate strategies. 21. Adds mentally 3-digit numbers and hundreds (multiples of 100 up to 900) using appropriate strategies.	flashcards, mini boards, number bonds, number discs
22. Solves routine and nonroutine problems involving addition of whole numbers including money with sums up to 1000 using appropriate problem-solving strategies and tools. 23. Creates problems involving addition of whole numbers including money.	worksheets
GRADE TWO (SECOND QUARTER)	
1. Visualizes, represents, and subtracts 2- to 3-digit numbers with minuends up to 999 without and with regrouping.	playdoh/clay, popsicle sticks, two-color counters manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
2. Subtracts mentally 1-digit numbers from 1- to 3-digit numbers without regrouping using appropriate strategies. 3. Subtracts mentally 3-digit numbers by tens and by hundreds without regrouping using appropriate strategies.	worksheets, flashcards on rings, decomposition cards, number lines, hundred board/chart, snap cubes, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
4. Solves routine and nonroutine problems involving subtraction of whole numbers including money with minuends up to 1000 using appropriate problem-solving strategies and tools.	worksheets, place value mat, unifix cubes, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
5. Creates problems involving subtraction of whole numbers including money.	worksheets, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.), cut-outs, number bonds
6. Performs orders of operations involving addition and subtractions of small numbers.	worksheets
7. Solves multi-step routine and non-routine problems involving addition and subtraction of 2- to 3-digit numbers including money using appropriate problem-solving strategies and tools.	play money, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
8. Creates word problems involving addition and subtraction of whole numbers including money.	number bonds, manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
9. Illustrates multiplication as repeated addition using - groups of equal quantities - arrays - counting by multiples - equal jumps on the number line 10. Writes a related equation for each type of multiplication: repeated addition, array, counting by multiples, and equal jumps on the number line.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.), cut-outs, number lines, playdoh, worksheets

11. Illustrates the property of multiplication that any number multiplied by one (1) is the same number. 12. Illustrates the property of multiplication that zero multiplied by any number is zero. 13. Illustrates the commutative property of multiplication. 14. Visualizes multiplication of numbers 1 to 10 by 2,3,4,5 and10. 15. Multiplies mentally 2,3,4,5 and 10 using appropriate strategies. 16. Solves routine and nonroutine problems involving multiplication of whole numbers including money using appropriate problem-solving strategies and tools. 17. Solves routine and nonroutine problems involving multiplication and addition or subtraction of whole numbers including money using appropriate problem-solving strategies and tools. 18. Creates problems involving multiplication only and multiplication with addition or subtraction of whole numbers including money with reasonable answers.	
GRADE TWO (THIRD QUARTER)	
1. Visualizes and represents division as equal sharing, repeated subtraction, equal jumps on the number line and using formation of equal groups of objects	beads (ø16mm), manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, popsicle sticks, etc.), lego bricks
2. Creates and writes a related equation for each type of situation: equal sharing, repeated subtraction, equal jumps on the number line, and formation of equal groups of objects. 3. Visualizes division of numbers up to 100 by 2,3,4,5, and 10 (multiplication table of 2, 3, 4, 5 and 10). 4. Divides mentally numbers by 2,3,4,5 and 10 using appropriate strategies (multiplication table of 2, 3, 4, 5 and 10). 5. Illustrates that multiplication and division are inverse operations. 6. Solves routine and nonroutine problems involving division of numbers by 2,3,4,5 and 10 and with any of the other operations of whole numbers including money using appropriate problem-solving strategies and tools. 7. Creates word problems involving division of whole numbers including money.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, popsicle sticks, etc.), lego bricks, number line, cut-outs, play money
8. Visualizes, represents and identifies unit fractions with denominators of 10 and below. 9. Reads and writes unit fractions. 10. Compares unit fractions using relation symbols. 11. Arranges unit fractions in increasing or decreasing order. 12. Identifies other fractions less than one with denominators 10 and below. 14. Reads and writes similar fractions. 15. Compares similar fractions using relation symbols. 16. Arranges similar fractions in increasing or decreasing order.	fraction tiles, cubes & circles, fraction bars/charts, fraction models/cut-outs
17. Visualizes similar fractions (using group of objects and number line).	square units/tiles (10cm x 10cm, plastic)

18. Visualizes, identifies, classifies and describes half circles and quarter circles.	cut-outs, round objects
19. Constructs squares, rectangles, triangles, circles, half-circles, and quarter circles using cutouts and square grids.	compass, blackboard, geoboard (11 x 11), cutouts
20. Identifies shapes/figures that show symmetry in a line. 21. Identifies and draws the line of symmetry in a given symmetrical figure.	compass, blackboard
22. Creates figures that show symmetry in a line. 23. Recognizes shapes that can tessellate.	cutouts, worksheets, lego bricks
24. Tessellates a surface using triangles and squares.	pattern blocks (250 pcs/set)
25. Identifies straight lines and curves, flat and curved surfaces in a 3-dimensional object. This is not reflected in the performance standards.	empty boxes
26. Explains the differences between straight lines and curved lines, flat surfaces and curved surfaces. This is not reflected in the performance standards.	basic 3-dimensional models
27. Determines the missing term/s in a given continuous pattern using two attributes (any two of the following: figures, numbers, colors, sizes, and orientations, etc.) e.g. 1, A, 2, B,3, C, __, __ 1, 2, 3, 4 __ 28. Visualizes and finds the missing value in a number sentence involving multiplication or division of whole numbers using 2, 3, 4, 5 and 10 only. e.g. 5 x __ = 30 30 ÷ __ = 6	worksheets, cutouts, lacing beads, paper clips
GRADE TWO (FOURTH QUARTER)	
1. Tells and writes time in minutes including a.m. and p.m. using analog and digital clocks. 2. Visualizes and finds the elapsed time in days. 3. Visualizes, represents, and solves problems involving time (minutes including a.m. and p.m. and elapsed time in days).	digital clock, tabletop, demonstration clock (manipulative clock, blackboard)
4. Shows and uses the appropriate unit of length and their abbreviation cm and m to measure a particular object. 5. Compares length in meters or centimeters.	plastic ruler (12 inches or 30cm), tape measure, meterstick
6. Measures objects using appropriate measuring tools in m or cm. 7. Estimates and measures length using meter or centimeter. 8. Solves routine and nonroutine problems involving length.	real objects ruler, tape measure, meter stick
9. Shows and uses the appropriate unit of weight and their abbreviations g and kg to measure a particular object. 10. Compares mass in grams or kilograms.	weighing scales
11. Measures objects using appropriate measuring units in g or kg.	weighing scale (analog, max. 5 kg cap.), weighing scale (analog, 1 kg. cap.), double-pan balance (500g)
12. Estimates and measures mass using gram or kilogram.	weighing scale, worksheets

13. Solves routine and nonroutine problems involving mass.	
14. Measures objects using appropriate measuring tools in mL or L.	liter volume set (liter cases), measuring cup (250ml), plastic, set of measuring cups and spoons
15. Creates problems involving length, mass and capacity.	real objects, linear measuring tools, measuring cups and spoons
16. Illustrates area as a measure of how much surface is covered or occupied by a plane figure.	Geoboard (11 x 11), graphing paper
17. Finds the area of a given figure using square-tile units i.e. number of square tiles needed. 18. Estimates the area of a given figure using any shape. 19. Solves routine and nonroutine problems involving any figure using square tiles.	square units/tiles (2.54 x 2.54 cm, plastic)
20. Collects data on one variable using a questionnaire. 21. Sorts, classifies, and organizes data in tabular form and presents this into a pictograph without and with scales. 22. Infers and interprets data presented in a pictograph without and with scales. 23. Solves routine and nonroutine problems using data presented in a pictograph without and with scales.	graph charts, manipulatives
24. Tells whether an event is likely, equally likely, unlikely to happen. 25. Describe events in real-life situations using the phrases " likely to happen" or "unlikely to happen" or "equally likely to happen".	manipulatives
GRADE THREE (FIRST QUARTER)	
1. Visualizes numbers up to 10 000 with emphasis on numbers 1001 - 10000.	place value charts/mats, base ten blocks, number discs
2. Gives the place value and value of a digit in 4- to 5-digit numbers.	cuisenaire rods/number sticks (250 pcs/set)
3. Reads and writes numbers up to 10 000 in symbols and in words.	place value charts/mats, snap cubes
4. Rounds numbers to the nearest ten, hundred and thousand 5. Compares numbers up to 10 000 using relation symbols.	number lines, number discs
6. Orders 4- to 5-digit numbers in increasing or decreasing order. 7. Identifies ordinal numbers from 1st to 100th with emphasis on the 21st to 100th object in a given set from a given point of reference.	place value chart
8. Recognizes coins and bills up to PhP1 000. 9. Reads and writes money in symbols and in words through PhP1 000 in pesos and centavos. 10. Compares values of the different denominations of coins and bills through PhP1 000 using relation symbols.	play money

11. Adds 3- to 4-digit numbers up to three addends with sums up to 10 000 without and with regrouping.	place value mats, snap cubes, base ten blocks
12. Estimates the sum of 3- to 4-digit addends with reasonable results.	number line
13. Adds mentally 2-digit and 1-digit numbers without or with regrouping using appropriate strategies. 14. Adds mentally 2- to 3-digit numbers with multiples of hundreds using appropriate strategies.	number cards
15. Solves routine and non-routine problems involving addition of whole numbers with sums up to 10 000 including money using appropriate problem solving strategies and tools.	bar models
16. Creates problems involving addition of whole numbers including money.	worksheets
17. Subtracts 3-to 4-digit numbers from 3- to 4-digit numbers without and with regrouping.	place value mats, snap cubes, base ten blocks
18. Estimates the difference of two numbers with three to four digits with reasonable results.	number line
19. Subtracts mentally 1- to 2 – digits numbers without and with regrouping using appropriate strategies. 20. Subtracts mentally 2- to 3 – digits numbers with multiples of hundreds without and with regrouping using appropriate strategies.	number cards
21. Solves routine and non-routine problems involving subtraction without or with addition of whole numbers including money using appropriate problem-solving strategies and tools. 22. Creates problems involving addition and/or subtraction of whole numbers including money.	work sheets
GRADE THREE (SECOND QUARTER)	
1. Visualizes multiplication of numbers 1 to 10 by 6,7,8 and 9.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
2. Visualizes and states basic multiplication facts for numbers up to 10.	flash cards, window cards
3. Applies the commutative property of multiplication. 4. Multiplies 2-digit by 1-digit numbers using the distributive property of multiplication. 5. Multiplies three 1-digit numbers using the associative property of multiplication. 6. Multiplies 2-to 3-digit numbers by 1-digit numbers with or without regrouping. 7. Multiplies 2-digit number by 2-digit numbers without regrouping. 8. Multiplies 2 -digit number by 2-digit numbers with regrouping 9. Creates problems involving multiplication or with addition or subtraction of whole numbers including money. 10. Estimates the quotient of 2- to 3- digit numbers by 1- to 2- digit numbers. 11. Creates problems involving division or with any of the other operations of whole numbers including money.	worksheets

12. Multiplies 2- to 3-digit numbers by multiples of 10 and 100. 13. Multiplies 1- to 2-digit numbers by 1 000. 14. Estimates the product of 2- to 3-digit numbers and 1- to 2-digit numbers with reasonable results.	worksheets, number cards, number lines
15. Multiplies mentally 2-digit by 1-digit numbers without regrouping with products of up to 100.	number cards
16. Solves routine and non-routine problems involving multiplication without or with addition and subtraction of whole numbers including money using appropriate problem solving strategies and tools. 17. Solves routine and non-routine problems involving division of 2- to 4-digit numbers by 1- to 2-digit numbers without or with any of the other operations of whole numbers including money using appropriate problem solving strategies and tools.	bar models
18. Visualizes and states the multiples of 1- to 2-digit numbers. 19. Visualizes division of numbers up to 100 by 6,7,8,and 9 (multiplication table of 6, 7, 8, and 9). 20. Visualizes and states basic division facts of numbers up to 10.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
21. Divides 2- to 3-digit numbers by 1- to 2- digit numbers without and with remainder. 22. Divides 2-3 digit numbers by 10 and 100 without or with remainder. 23. Divides mentally 2-digit numbers by 1-digit numbers without remainder using appropriate strategies.	number cards
GRADE THREE (THIRD QUARTER)	
1. Identifies odd and even numbers.	manipulatives (beads, lego, cubes, paper clips, tiles, blocks, buttons, etc.)
2. Visualizes and represents fractions that are equal to one and greater than one.	fraction tiles, fraction circles, fraction bars
3. Reads and writes fractions that are equal to one and greater than one in symbols and in words.	fraction cards
4. Represents fractions using regions, sets, and the number line.	beads (ø16mm)
5. Visualizes and represents dissimilar fractions. 6. Visualizes, represents, and compares dissimilar fractions. 7. Visualizes, represents, and arranges dissimilar fractions in increasing or decreasing order. 8. Visualizes and generates equivalent fractions.	fraction bars/charts, fraction models
9. Recognizes and draws a point, line, line segment and ray.	geoboards
10. Recognizes and draws parallel, intersecting and perpendicular lines. 11. Visualizes, identifies and draws congruent line segments.	rulers

12. Identifies and visualizes symmetry in the environment and in design. 13. Identifies and draws the line of symmetry in a given symmetrical figure. 14. Completes a symmetric figure with respect to a given line of symmetry.	worksheets, paper dots
15. Tessellates the plane using triangles, squares and other shapes that can tessellate.	pattern blocks (250 pcs/set)
16. Determines the **missing term/s** in a given combination of **continuous and repeating pattern.** e.g. 4A,5B, 6A,7B,__ 1 2 3 4 ___ 17. Finds the missing value in a number sentence involving multiplication or division of whole numbers. e.g. n x 7 = 56 56 ÷ n = 8	worksheets
GRADE THREE (FOURTH QUARTER)	
1. Visualizes, and represents, and converts time measure from seconds to minutes, minutes to hours, and hours to a day and vice versa.	digital clock, tabletop, demonstration clock (manipulative clock, blackboard)
2. Visualizes, and represents, and converts time measure 2.1 days to week, month and year and vice versa 2.2 weeks to months and year and vice versa 2.3 months to year and vice versa. 3. Visualizes, and represents, and solves problems involving conversion of time measure.	calendar
4. Visualizes, and represents, and converts common units of measure from larger to smaller unit and vice versa: meter and centimeter, kilogram and gram, liter and milliliter 5. Visualizes, and represents, and solves routine and non-routine problems involving conversions of common units of measure.	plastic ruler (12 inches or 30cm), double-pan balance (500g)
6. Visualizes, and represents, and finds the capacity of a container using milliliter and liter. 7. Visualizes, and represents, and solves routine and non-routine problems involving capacity measure. 8. Visualizes, and represents, and measures area using appropriate unit.	set of measuring cups and spoons, measuring cup (250ml), plastic liter volume set (liter cases)
9. Derives the formula for the area of a rectangle and a square. 10. Visualizes, and represents, and finds the area of a rectangle and square in sq.cm and sq. m. 11. Solves routine and non-routine problems involving areas of squares and rectangles. 12. Creates problems involving area of rectangle and square.	square units/tiles (10cm x 10cm, plastic), square units/tiles (2.54 x 2.54cm, plastic)

13. Collects data on one **variable** using existing records. 14. Sorts, classifies, and organizes data in tabular form and presents this into a **vertical or horizontal bar graph.**	worksheets, manipulatives
15. Infers and interprets data presented in different kinds of bar graphs (vertical/ horizontal).	graphs and tables
16. Solves routine and non-routine problems using data presented in a single-bar graph. 17. Tells whether an event is sure, likely, equally likely, unlikely, and impossible to happen. 18. Describes events in real-life situations using the phrases "sure to happen," likely to happen", "equally likely to happen", "unlikely to happen", and "impossible to happen".	worksheets
GRADE FOUR (FIRST QUARTER)	
1. Visualizes numbers up to 100 000 with emphasis on numbers 10 001 – 100 000.	number discs, beads
2. Gives the place value and value of a digit in numbers up to 100 000.	place value chart w/ decimal pockets, pocket chart, number discs
3. Reads and writes numbers up to hundred thousand in symbols and in words.	show me boards, flash cards
4. Rounds numbers to the nearest thousand and ten thousand.	show-me cards, number lines
6. Orders numbers up to 100 000 in increasing or decreasing order.	pocket chart
7. Divides 3- to 4-digit numbers by 1-to 2-digit numbers without and with remainder 8. Estimates the quotient of 3- to 4-digit dividends by 1- to 2digit divisors with reasonable results. 9. Divides mentally 2- to 3-digit numbers by 1-digit numbers without remainder using appropriate strategies.	window cards drill boards/show-me boards
GRADE FOUR (SECOND QUARTER)	
1. Differentiates prime from composite numbers.	multiplication star, 100 - chart
2. Writes a given number as a product of its prime factors. 3. Finds the common factors and the greatest common factor (GCF) of two numbers using the following methods: listing, prime factorization, and continuous division.	number cards
4. Creates problems with reasonable answers involving GCF and LCM of 2 given numbers.	dart board, flash card
5. Identifies proper fractions, improper fractions, and mixed numbers.	fraction pie model
6. Changes improper fraction to mixed numbers and vice versa.	ball
7. Visualizes addition and subtraction of similar fractions. 8. Visualizes subtraction of a fraction from a whole number. 9. Visualizes addition and subtraction of dissimilar fractions. 10. Performs addition and subtraction of similar and dissimilar fractions.	fraction pie model, square tiles
11. Creates problems (with reasonable answers) involving addition and/or subtraction of fractions.	place value chart

12. Visualizes decimal numbers using models like blocks, grids, number lines and money to show the relationship to fractions. 13. Renames decimal numbers to fractions, and fractions whose denominators are factors of 10 and 100 to decimals.	grid paper, blocks, grids, number lines, bill and coins toy money
14. Gives the place and the value of a digit of a given decimal number through hundredths. 15. Reads and writes decimal numbers through hundredths. 16. Compares and arranges decimal numbers.	place – value chart with decimal pocket
17. Rounds decimal numbers to the nearest whole number and tenth.	number line
GRADE FOUR (THIRD QUARTER)	
1. Describes and illustrates parallel, intersecting, and perpendicular lines. 2. Draws perpendicular and parallel lines using a ruler and a set square.	set square, ruler, meter stick plastic, linear pair/angle demonstrator
3. Describes and illustrates different angles (right, acute, and obtuse) using models.	ruler, clock, protractor
4. Describes the attributes/properties of triangles and quadrilaterals using concrete objects or models.	model of triangles and quadrilaterals, geoboard
5. Identifies and describes triangles according to sides and angles.	models of different triangular objects, triangle set
6. Identifies and describes the different kinds of quadrilaterals: square, rectangle, parallelogram, trapezoid, and rhombus. 7. Relates triangles to quadrilaterals 8. Relates one quadrilateral to another quadrilateral (e.g. square to rhombus).	models of triangles and quadrilateral objects
9. Determines the missing term/s in a sequence of numbers (e.g. odd numbers, even numbers, multiples of a number, factors of a number, etc.) e.g. 3,6,9,__ 4,8,12,16,__ (e.g. odd numbers, even numbers, multiples of a number, factors of a number, etc.) 10. Finds the missing number in an equation involving properties of operations. (e.g. (4+__) + 8 = 4 + (5 + __)	pocket chart
11. Finds the elapsed time in minutes and seconds. 12. Estimates the duration of time in minutes. 13. Solves problems involving elapsed time.	demonstration clock, number line
14. Visualizes the perimeter of any given plane figure in different situations. 15. Measures the perimeter of any given figure using appropriate tools.	ruler, meter stick, tape measure, real objects
16. Derives the formula for perimeter of any given figure.	models of plane figure
17. Differentiates perimeter from area. 18. Converts sq. cm to sq. m and vice versa.	meter sticks
19. Solves routine and nonroutine problems in real-life situations involving perimeter of squares and rectangles, triangles, parallelograms, and trapezoids.	model of plane figures

GRADE FOUR (FOURTH QUARTER)	
1. Finds the area of irregular figures made up of squares and rectangles using sq. cm and sq. m. 2. Estimates the area of irregular plane figures made up of squares and rectangles.	square tiles, rectangle set
3. Derives the formulas for the area of triangles, parallelograms, and trapezoids.	marker, square tiles, area demonstration set
4. Finds the area of triangles, parallelograms and trapezoids using sq. cm and sq. m. 5. Estimates the area of triangles, parallelograms, and trapezoids.	square tiles, ruler, marker
6. Solves routine and non-routine problems involving squares, rectangles, triangles, parallelograms, and trapezoids.	meter stick, ruler
7. Creates problems (with reasonable answers) involving perimeter and area involving squares, rectangles, triangles, parallelograms, and trapezoids.	geoboard, rubber bands, meter stick, ruler
8. Visualizes the volume of solid figures in different situations using non-standard (e.g. marbles, etc.) and standard units.	rectangular boxes, marbles, pebbles, beans, balls, volume demonstrator set
9. Derives the formula for the volume of rectangular prisms.	ruler, regular boxes, volume demonstrator set
10. Finds the volume of a rectangular prism using cu. cm and cu. m. 11. Creates problems (with reasonable answers) involving volume of rectangular prism.	ruler, volume demonstrator set
12. Solves routine and non-routine problems involving the volume of a rectangular prism.	ruler, meter stick, volume demonstrator set
13. Collects data on two variables using any source. 14. Interprets data presented in different kinds of bar graphs (vertical/horizontal, single/double bars).	meter stick
15. Organizes data in tabular form and presents them in a single/double horizontal or vertical bar graph.	grids
16. Draws inferences based on data presented in a double bar graph.	graphing paper
17. Records favorable outcomes in a simple experiment (e.g. tossing a coin, spinning a wheel, etc.)	coin, die, spinner, playing cards
18. Expresses the outcome in a simple experiment in words, symbols, tables, or graphs.	coins, spinner, die
19. Solves routine and nonroutine problems involving a simple experiment.	balls, spinner, chips, coin
20. Creates problems involving a simple experiment.	pens of different colors, balls
GRADE FIVE (FIRST QUARTER)	
1. Visualizes numbers up to 10 000 000 with emphasis on numbers 100 001 – 10 000 000.	number sticks, unifix cubes, beads
2. Reads and writes numbers up to 10 000 000 in symbols and in words.	place value chart
3. Rounds numbers to the nearest hundred thousand and million.	number line (plastic material)
4. Solves real-life problems involving GCF and LCM of 2-3 given numbers.	pens, counters

5. Creates problems (with reasonable answers) involving GCF and LCM of 2-3 given numbers.	marbles, sticks
6. Adds fractions and mixed fractions without and with regrouping. 7. Subtracts fractions and mixed fractions without and with regrouping. 8. Creates problems (with reasonable answers) involving addition and/or subtraction of fractions using appropriate problem-solving strategies. 9. Visualizes multiplication of fractions using models. 10. Multiplies a fraction and a whole number and another fraction. 11. Multiplies mentally proper fractions with denominators up to 10. 12. Solves routine or non-routine problems involving multiplication without or with addition or subtraction of fractions and whole numbers using appropriate problem-solving strategies and tools. 13. Creates problems (with reasonable answers) involving multiplication of fractions. 14. Shows that multiplying a fraction by its reciprocal is equal to 1. 15. Visualizes division of fractions. 16. Divides - simple fractions - whole numbers by a fraction and vice versa 17. Solves routine or non-routine problems involving division without or with any of the other operations of fractions and whole numbers using appropriate problem solving strategies and tools.	fraction wheel model, bar models
GRADE FIVE (SECOND QUARTER)	
1. Gives the place value and the value of a digit of a given decimal number through ten thousandths. 2. Reads and writes decimal numbers through ten thousandths. 3. Rounds decimal numbers to the nearest hundredth and thousandth. 4. Compares and arranges decimal numbers.	place value chart, cuisenaire rods, fraction bars, snap cubes, place value flip chart model
5. Visualizes addition and subtraction of decimals. 6. Adds and subtracts decimal numbers through thousandths without and with regrouping. 7. Estimates the sum or difference of decimal numbers with reasonable results. 8. Visualizes multiplication of decimal numbers using pictorial models. 9. Multiplies decimals up to 2 decimal places by 1- to 2-digit whole numbers. 10. Multiplies decimals with factors up to 2 decimal places. 11. Estimates the products of decimal numbers with reasonable results. 12. Visualizes division of decimal numbers using pictorial models. 13. Divides decimals with up to 2 decimal places. 14. Divides whole numbers with quotients in decimal form. 15. Estimates the quotients of decimal numbers with reasonable results.	decimal grid model

16. Finds the missing term in a pair of equivalent ratios. 17. Defines and describes a proportion. 18. Recognizes when two quantities are in direct proportion.	bar models
19. Visualizes the ratio of 2 given numbers.	linking cubes
GRADE FIVE (THIRD QUARTER)	
1. Visualizes percent and its relationship to fractions, ratios, and decimal numbers using models.	fraction pie model
2. Visualizes, names, and describes polygons with 5 or more sides. 3. Describes and compares properties of polygons (regular and irregular polygons).	models of 7-sided to 12-sided, regular polygons and irregular polygons
4. Draws polygons with 5 or more sides.	geoboard (5 x 5), geoboard (11 x 11)
5. Visualizes congruent polygons. 6. Visualizes and describes solid figures.	blocks, basic 3-dimensional models
7. Visualizes and describes a circle. 8. Identifies the terms related to a circle.	real objects (circle)
9. Draws circles with different radii using a compass.	compass
10. Measures time using a 12-hour and a 24-hour clock.	digital clock
11. Solves problems involving time. 12. Visualizes circumference of a circle. 13. Measures circumference of a circle using appropriate tools. 14. Finds the circumference of a circle.	circle area demonstrator set
GRADE FIVE (FOURTH QUARTER)	
1. Visualizes area of a circle. 2. Derives a formula in finding the area of a circle. 3. Finds the area of a given circle.	circle area demonstrator set, real objects
4. Visualizes the volume of a cube and rectangular prism. 5. Names the appropriate unit of measure used for measuring the volume of a cube and a rectangle prism. 6. Derives the formula in finding the volume of a cube and a rectangular prism using cubic cm and cubic m. 7. Finds the volume of a given cube and rectangular prism using cu. cm and cu. m.	volume demonstrator set
8. Reads and measures temperature using thermometer (alcohol and/or digital) in degree Celsius. 9. Estimates the temperature (e.g. inside the classroom). 10. Solves routine and non-routine problems involving temperature in real- life situations. 11. Creates problems involving temperature, with reasonable answers.	thermometer, -20 c to 110 c
12. Interprets data presented in different kinds of line graphs (single to double- line graph).	plastic ruler, 12 inches or 30cm
GRADE SIX (FIRST QUARTER)	
1. Adds and subtracts simple fractions and mixed numbers without or with regrouping. 2. Solves routine and non-routine problems involving addition and subtraction of fractions using appropriate problem-solving strategies and tools. 3. Create problems (with reasonable answers) involving addition and subtraction of fractions.	

4. Multiplies simple fractions and mixed fractions. 5. Solve routine and non-routine problems involving multiplication without or with addition or subtraction of fraction and mixed numbers using appropriate problem-solving strategies and tools. 6. Divide simple fractions and mixed numbers 7. Solves 1 or more steps routine and non-routine problems involving addition and/or subtraction of decimals using appropriate problem-solving strategies and tools. 8. Solves routine and non-routine problems involving multiplication of decimals and mixed decimals including money using appropriate problem-solving strategies. 9. Solves routine and non-routine problems involving division of decimals, mixed decimals, and whole numbers including money using appropriate problem-solving strategies and tools. 10. Solves multi-step routine and non-routine problems involving division and any of the other operations of decimals, mixed decimals, and whole numbers including money using appropriate problem-solving strategies and tools.	fraction models bar models
11. Adds and subtracts decimals and mixed decimals through ten thousandths without or with regrouping. 12. Multiplies decimals and mixed decimals with factors up to 2 decimal places. 13. Multiplies mentally decimals up to 2 decimal places by 0.1, 0.01, 10 and 100 14. Divides whole numbers by decimals up to 2 decimal places and vice-versa. 15. Divides decimals/mixed decimals up to 2 decimal places. 16. Divides decimals up to 4 decimal places by 0.1, 0.01, and 0.001. 17. Divides decimals up to 2 decimal places by 10, 100, and 1 000 mentally.	decimal grid model place value chart
18. Differentiates terminating from repeating, non-terminating decimal quotients.	calculator
GRADE SIX (SECOND QUARTER)	
1. Defines and illustrates the meaning of ratio and proportion using concrete or pictorial models.	pictorial models
2. Sets up proportions for groups of objects or numbers and for given situations.	linking cubes
3. Finds a missing term in a proportion (direct, inverse, and partitive). 4. Solves problems involving direct proportion, partitive proportion, and inverse proportion in different contexts such as distance, rate, and time using appropriate strategies and tools. 5. Finds the percentage or rate or percent in a given problem. 6. Solves routine and non-routine problems involving finding the percentage, rate and base using appropriate strategies and tools. 7. Solves percent problems such as percent of increase/decrease (discounts, original price, rate of discount, sale price, marked up price),	bar model

commission, sales tax, and simple interest. 8. Solves routine and non-routine problems involving basic operations of integers using appropriate strategies and tools.	
9. Compares integers with other numbers such as whole numbers, fractions, and decimals. 10. Represents integers on the number line.	number line
11. Describes and interprets the basic operations on integers using materials such as algebra tiles, counters, chips, and cards. 12. Performs the basic operations on integers. 13. Describes the set of integers.	manipulatives like tiles, chips, counters, and cards
GRADE SIX (THIRD QUARTER)	
1. Visualizes and describes the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere. 2. Differentiates solid figures from plane figures. 3. Illustrates the different solid figures using various concrete and pictorial models. 4. Identifies the faces of a solid figure. 5. Visualizes and describes the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere. 6. Identifies the nets of the following space figures: cube, prism, pyramid, cylinder, cone, and sphere using plane figures.	isometric dot paper plane figure model solid figure models
7. Finds the area of composite figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle. 8. Solves routine and non-routine problems involving area of composite figures formed by any two or more of the following: triangle, square, rectangle, circle, and semicircle. 9. Visualizes and describes surface area and names the unit of measure used for measuring the surface area of solid/space figures. 10. Derives a formula for finding the surface area of cubes, prisms, pyramids, cylinders, cones, and spheres.	ruler meter stick
11. Finds the surface area of cubes, prisms, pyramids, cylinders, cones, and spheres. 12. Solves word problems involving measurement of surface area.	blocks basic 3-dimensional models
GRADE SIX (FOURTH QUARTER)	
1. Determines the relationship of the volume between 1.1 a rectangular prism and a pyramid; 1.2 a cylinder and a cone; 70.3 and a cylinder and sphere. 2. Derives the formula for finding the volume of cylinders, pyramids, cones, and spheres.	solid figures model
3. Finds the volume of cylinders, pyramids, cones, and spheres. 4. Solves routine and non-routine problems involving volumes of solids. 5. Creates problems involving surface area and volume of solid/space figures, with reasonable answers.	models of solid figures

6. Reads and interprets electric and water meter readings. 7. Solves routine and non-routine problems involving electric and water consumption. 8. Creates problems involving electric and water consumption, with reasonable answers.	electric & water meter reader model
9. Collects data on one or two variables using any source.	graph
10. Constructs a pie graph based on a given set of data. 11. Interprets data presented in a pie graph. 12. Solves routine and non-routine problems using data presented in a pie graph.	compass, protractor
14. Describes the meaning of probability such as 50% chance of rain and one in a million chance of winning.	spinner, die
15. Performs experiments and records outcomes. 16. Makes listings and diagrams of outcomes and tells the number of favorable outcomes and chances using these listings and diagrams. 17. Makes simple predictions of events based on the results of experiments. 18. Solves routine and non-routine problems involving experimental and theoretical probability. 19. Creates problems involving experimental and theoretical probability.	die deck of cards beads spinner
GRADE SEVEN (FIRST QUARTER)	
1. Describes well-defined sets, subsets, universal sets, and the null set and cardinality of sets	construction paper, glue/scissor, illustration board, worksheets – bond paper, printer
2. Illustrates the union and intersection of sets and the difference of two sets	felt paper, construction paper, marker, glue, scissor, laptop/smart TV, interactive activity "Who Wants to be a Millionaire?"
3. Uses Venn Diagrams to represent sets, subsets, and set operations	meter stick, marker, laptop & smart tv for ppt presentation with video clip, worksheets – bond paper, printer
4. Solves problems involving sets 5. Represents the absolute value of a number on a number line as the distance of a number from 0	smart TV/laptop , worksheets-bond paper,printer
6. Performs fundamental operations on integers	worksheets, board work using magnetic board
7. Illustrates the different properties of operations on the set of integers	worksheets for exercises/activities
8. Expresses rational numbers from fraction form to decimal form and vice versa	whiteboard marker with different color worksheets
9. Performs operations on rational numbers	worksheets, board work using magnetic board
10. Describes principal roots and tells whether they are rational or irrational	meter stick, magnetic board
11. Plots irrational numbers (up to square roots) on a number line	ruler, calculator, more reference books
12. Illustrates the different subsets of real numbers	more reference books, ruler, circular objects
13. Represents real-life situations which involve real numbers	countable local materials, materials that can represent fractions(e.g. paper, scores of students) pictures of real life objects not available in the locality but will represent real numbers
GRADE SEVEN (SECOND QUARTER)	
1. Illustrates what it means to measure	ruler, thermometer, weighing scale, watch
2. Describes the development of measurement from the primitive to the present international system of	more book references, pictures of primitive and modern measuring tools

units	
3. Approximates the measures of quantities particularly length , weight/mass, volume, time, angle and temperature and rate	ruler, thermometer, weighing scale, watch, protractor
4. Converts measurements from one unit to another in both Metric and English systems. 5. Solves problems involving conversion of units of measurement.	conversion table metric to metric, english to english, metric to english, english to metric
6. Translates English phrases to mathematical phrases and vice versa	more reference books, flash cards of mathematical phrases and english phrases
7. Interprets the meaning of a^n where n is a positive integer.	calculator, flash cards of exponents
8. Evaluates algebraic expressions for given values of the variables	more reference books, calculator, worksheets
9. Adds and subtracts polynomials 10. Solves problems involving algebraic expressions	polynomial/algebra tiles, more reference books, worksheets
11. Differentiates between algebraic expressions and equations	more reference books, bowls and strips
12. Translates English sentences to mathematical sentences and vice versa	more reference books, flash cards of mathematical sentences and english sentences, worksheets
13. Differentiates between equations and inequalities	more reference books, balance beam, flash cards
14. Illustrates linear equation and inequality in one variable	ruler, more reference books
15. Finds the solution of linear equation or inequality in one variable	worksheets, board work using magnetic board
16. Solves linear equation or inequality in one variable involving absolute value by: (a) graphing; and (b) algebraic methods 17. Solves problems involving equations and inequalities in one variable	worksheets, graphing paper, calculator
GRADE SEVEN (THIRD QUARTER)	
1. Represents point, line and plane using concrete and pictorial models 2. Illustrates subsets of a line	more geometry reference books, pictures and video presentation
3. Classifies the different kinds of angles 4. Derives relationships of geometric figures using measurements and by inductive reasoning; supplementary angles, complementary angles, congruent angles, vertical angles, adjacent angles, linear pairs, perpendicular lines, and parallel lines. 5. Derives relationships among angles formed by parallel line cut by a transversal using measurement and by inductive reasoning	protractor, more geometry reference book
6. Uses a compass and straightedge to bisect line segments and angles and construct perpendiculars and parallels 7. Illustrates polygons: (a) convexity; (b) angles; and (c) sides 8. Derives inductively the relationship of exterior and interior angles of a convex polygon 9. Illustrates a circle and the terms related to it: radius, diameter chord, center, arc, chord, central angle, and inscribed angle 10. Constructs triangles, squares, rectangles, regular pentagons, and regular hexagons	compass, protractor, more geometry reference book
11. Solves problems involving sides and angles of a polygon	worksheets, more reference books

GRADE SEVEN (FOURTH QUARTER)	
1. Explains the importance of Statistics	A/V material, research papers, raw data
2. Poses problems that can be solved using Statistics	raw data, reference books, calculator
3. Formulates simple statistical instruments	reference books, calculator, statistics software (MiniTab)
4. Gathers statistical data	raw data, research papers, reference books
5. Organizes data in a frequency distribution table	ruler, bondpaper, calculator, reference materials
6. Uses appropriate graphs to represent organized data: pie chart, bar graph, line graph, histogram, and ogive	compass, ruler, reference books, A/V material
7. Illustrates the measures of central tendency (mean, median, and mode) of a statistical data 8. Calculates the measures of central tendency of ungrouped and grouped data 9. Illustrates the measures of variability (range, average deviation, variance, standard deviation) of a statistical data 10. Calculates the measures of variability of grouped and ungrouped data 11. Uses appropriate statistical measures in analyzing and interpreting statistical data	raw data, calculator, worksheets, reference books, statistics software (MiniTab)
12. Draws conclusions from graphic and tabular data and measures of central tendency and variability	statistical data, calculator, worksheets, reference books, statistics software (MiniTab)
GRADE EIGHT (FIRST QUARTER)	
1. Factors completely different types of polynomials (polynomials with common monomial factor, difference of two squares, sum and difference of two cubes, perfect square trinomials, and general trinomials).	white board marker , Pictures of Filipino celebrities ,Curriculum Guide, Teacher's Guide, Learner's Material, Suggested Localization and Contextualization
2. Simplifies rational algebraic expressions	video presentation about the topic, laptop, more book references
3. Performs operations on rational algebraic expressions	teacher's guide, learner's module, activity sheets for dependent learning, worksheets for independent learning, reference books
4. Illustrates the rectangular coordinate system and its uses 5. Illustrates the slope of a line finds the slope of a line given two points, equation, and graph 6. Graphs a linear equation given (a) any two points; (b) the x – and y–intercepts; (c) the slope and a point on the line.	ruler, graphing board, graphing paper, more book references
7. Describes the graph of a linear in terms of its intercepts and slope 8. Finds the equation of a line given (a) two points; (b) the slope and a point; (c) the slope and its intercepts 9. Solves problems involving linear equations in two variables	compass, board compass, protractor, more book references, compass, boards compass, protractor, graphing board, graphing paper, calculator
10. Graphs a system of linear equations in two variables	calculator, more book references, compass, board compass, protractor, graphing board, graphing paper, more book references
11. Categorizes when a given system of linear equations in two variables has graphs that are parallel, intersecting, and coinciding	compass, board compass, protractor, graphing board, graphing paper, more book references
12. Solves a system of linear equations in two variables by (a) graphing; (b) substitution; (c) elimination	graphing board, graphing paper, colored pen and chalk

GRADE EIGHT (SECOND QUARTER)	
1. Illustrates linear inequalities in two variables	cartolina, colored chalk
2. Graphs linear inequalities in two variables 3. Solves problems involving linear inequalities in two variables 4. Solves a system of linear inequalities in two variables 5. Solves problems involving systems of linear inequalities in two variables	graphing paper, graphing board , colored chalk and pen
6. Verifies if a given relation is a function	magnetic board
7. Illustrates a linear function 8. Graphs a linear function's (a) domain; (b) range; (c) table of values; (d) intercepts; and (e) slope	graphing paper, graphing board , colored chalk and pen
9. Solves problems involving linear functions	more book references, graphing paper
10. Determines the relationship between the hypothesis and the conclusion of an if-then statement	construction papers
11. Uses inductive or deductive reasoning in an argument 12. Writes a proof (both direct and indirect).	more book references, construction papers
GRADE EIGHT (THIRD QUARTER)	
1. Describes a mathematical system	colored paper, marker, colored chalk
2. Illustrates the need for an axiomatic structure of a mathematical system in general, and in Geometry in particular: (a) defined terms; (b) undefined terms; (c) postulates; and (d) theorems	ruler, colored chalk, construction papers, colored pen, meter stick
3. Illustrates triangle congruence 4. Illustrates the SAS, ASA and SSS congruence postulates 5. Solves corresponding parts of congruent triangles 6. Proves two triangles are congruent 7. Proves statements on triangle congruence	protractor, ruler, colored papers
8. Applies triangle congruence to construct perpendicular lines and angle bisectors	compass, ruler, protractor, sketch pad or bond paper, ppt. presentation
GRADE EIGHT (FOURTH QUARTER)	
1. Illustrates theorems on triangle inequalities (Exterior Angle Inequality Theorem, Triangle Inequality Theorem, Hinge Theorem).	different pictures of triangles
2. Applies theorems on triangle inequalities 3. Proves properties of parallel lines cut by a transversal.	protractor, ruler, colored pen/chalk
4. Determines the conditions under which lines and segments are parallel or perpendicular	different pictures of parallel or perpendicular lines
5. Illustrates an experiment, outcome, sample space and event 6. Counts the number of occurrences of an outcome in an experiment: (a) table; (b) tree diagram; (c) systematic listing; and (d) fundamental counting principle	coin, deck of cards, a die
7. Finds the probability of a simple event	more book references
8. Illustrates an experimental probability and a theoretical probability	a spiner
9. Solves problems involving probabilities of simple events	more book references, worksheets
GRADE NINE (FIRST QUARTER)	
1. Solves quadratic equations by (a) extracting square roots; (b) factoring; (c) completing the square; and (d) using the quadratic formula	scientific calculator, reference books (algebra)

2. Characterizes the roots of a quadratic equation using the discriminant 3. Describes the relationship between the coefficients and the roots of a quadratic equation 4. Solves equations transformable to quadratic equations (including rational algebraic equations) 5. Solves problems involving quadratic equations and rational algebraic equations	
6. Illustrates quadratic inequalities	number line/cartesian coordinate plane, reference books (algebra)
7. Solves quadratic inequalities	graphing paper, scientific calculator, reference books (algebra)
8. Solves problems involving quadratic inequalities	scientific calculator, more reference books
9. Models real-life situations using quadratic functions 10. Represents a quadratic function using: (a) table of values; (b) graph; and (c) equation	graphing paper, more reference books
11. Transforms the quadratic function defined by $y = ax^2 + bx + c$ into the form $y = a(x - h)^2 + k$ 12. Graphs a quadratic function: (a) domain; (b) range; (c) intercepts; (d) axis of symmetry; (e) vertex; (f) direction of the opening of the parabola 13. Analyzes the effects of changing the values of a, h and k in the equation $y = a(x - h)^2 + k$ of a quadratic function on its graph 13. Determines the equation of a quadratic function given: (a) a table of values; (b) graph; (c) zeros 14. Solves problems involving quadratic functions	graphing paper, scientific calculator, reference books (algebra)
GRADE NINE (SECOND QUARTER)	
1. Solves problems involving variation 2. Derives the laws of radicals 3. Simplifies radical expressions using the laws of radicals 4. Performs operations on radical expressions 5. Solves equations involving radical expressions 6. Solves problems involving radicals	scientific calculator, reference books (algebra)
GRADE NINE (THIRD QUARTER)	
1. Identifies quadrilaterals that are parallelograms	ruler, illustrations that show quadrilaterals, reference books (geometry)
2. Determines the conditions that make a quadrilateral a parallelogram	graphing paper, pencil, compass, ruler, reference books (geometry)
3. Uses properties to find measures of angles, sides and other quantities involving parallelograms	straightedge, compass, protractor, pencil, reference books (geometry)
4. Proves theorems on the different kinds of parallelogram (rectangle, rhombus, square)	protractor, ruler, pencil, bondpaper, compass, reference books (geometry)
5. Proves the Midline Theorem	short bondpaper, pencil, ruler, adhesive tape, protractor, pair of scissors, reference books (geometry)
6. Proves theorems on trapezoids and kites	bondpaper, pencil, ruler, protractor, compass, reference books (geometry)
7. Applies the fundamental theorems of proportionality to solve problems involving proportions	scientific calculator, reference books (geometry)
8. Solves problems that involve triangle similarity and right triangles	illustrations that show ratios or rates that are proportional, more reference books
GRADE NINE (FOURTH QUARTER)	
1. Illustrates angles of elevation and angles of depression	protractor, ruler, more reference books

2. Uses trigonometric ratios to solve real-life problems involving right triangles 3. Illustrates laws of sines and cosines 4. Solves problems involving oblique triangles 5. Finds the trigonometric ratios of special angles	scientific calculator, more reference books
GRADE TEN (FIRST QUARTER)	
1. Generate patterns	sticks, possible countable objects available at the locality, scientific calculator
2. Illustrates an arithmetic sequence 3. Determines arithmetic means and nth term of an arithmetic sequence 4. Finds the sum of the terms of a given arithmetic sequence 5. Illustrates a geometric sequence	scientific calculator, more book references
6. Differentiates a geometric sequence from an arithmetic sequence 7. Differentiates a finite geometric sequence from an infinite geometric sequence 8. Determines geometric means and nth term of a geometric sequence 9. Finds the sum of the terms of a given finite or infinite geometric sequence 10. Illustrates other types of sequences (e.g., harmonic, Fibonacci) 11. Solves problems involving sequences	scientific calculator, video presentation about sequences
12. Factors polynomials	graphing calculator, more book references
13. Illustrates polynomial equations	ruler, more book references
14. Solves polynomial equations 15. Solves problems involving polynomials and polynomial equations	calculator, more book references
GRADE TEN (SECOND QUARTER)	
1. Illustrates polynomial functions graphs polynomial functions	ruler, graphing board, graphing paper, more book references
2. Derives inductively the relations among chords, arcs, central angles, and inscribed angles 3. Proves theorems related to chords, arcs, central angles, and inscribed angles. 4. Illustrates secants, tangents, segments, and sectors of a circle. 5. Solves problems on circles	compass, board compass, protractor, more book references
6. Derives the distance formula	graphing board, calculator
7. Applies the distance formula to prove some geometric properties 8. Illustrates the center-radius form of the equation of a circle	graphing board, graphing paper, calculator
9. Graphs a circle and other geometric figures on the coordinate plane. 10. Solves problems involving geometric figures on the coordinate plane.	compass, board compass, protractor, graphing board, graphing paper, more book references

GRADE TEN (THIRD QUARTER)	
1. Illustrates the permutation of objects 2. Derives the formula for finding the number of permutations of n objects taken r at a time 3. Solves problems involving permutations 4. Illustrates the combination of objects 5. Differentiates permutation from combination of n objects taken r at a time 6. Derives the formula for finding the number of combinations of n objects taken r at a time	calculator, more book references, playing cards, dice, marbles, coins
7. Illustrates events, and union and intersection of events 8. Illustrates the probability of a union of two events. 9. Finds the probability of (A ∪ B) 10. Illustrates mutually exclusive events	circular objects, more book references, calculator
GRADE TEN (FOURTH QUARTER)	
1. Illustrates the following measures of position: quartiles, deciles and percentiles 2. Calculates a specified measure of position (e.g. 90th percentile) of a set of data 3. Interprets measures of position 4. Solves problems involving measures of position 5. Uses appropriate measures of position and other statistical methods in analyzing and interpreting research data	calculator, more Statistics book references, test scores
6. Formulates statistical mini-research.	research papers for reference, research subject and environment

V. Science

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
GRADE THREE (FIRST QUARTER)	
1. Describe different objects based on their characteristics (e.g. shape, weight, volume, ease of flow); 2. Classify objects and materials as solid, liquid, and gas based on some observable characteristics; 3. Describe ways on the proper use and handling solid, liquid, and gas found at home and in school.	5-newton spring balance, beral pipette dropper, double-pan balance (500g)
4. Describe changes in materials based on the effect of temperature: 4.1. Solid to liquid 4.2. Liquid to solid 4.3. Liquid to gas 4.4. Solid to gas	plastic thermometer (non-mercury)
GRADE THREE (SECOND QUARTER)	
1. Describe the parts and functions of the sense organs of the human body;	human ear model, human nose model, human torso model (miniature-type)
2. Describe animals in their immediate surroundings; 3. Identify the parts and functions of animals; 4. Classify animals according to body parts and use;	model of invertebrates, model of vertebrates, hand magnifying lens (5x), model of invertebrates, model of vertebrates
5. Describe the parts of different kinds of plants;	hand magnifying lens
GRADE THREE (THIRD QUARTER)	
1. Describe the position of a person or an object in relation to a reference point such as chair, door, another person;	pair of bar magnets, plastic rule (12 inches or 30 cm)
2. Identify things that can make objects move such as people, water, wind, magnets;	pair of bar magnets, toy car (non-friction, and non-battery)

3. Describe the movements of objects such as fast/slow, forward/backward, stretching/compressing;	toy car (non-friction, non-battery)
4. Describe sources of light and sound, heat and electricity; and 5. Enumerate uses of light, sound, heat and electricity.	connecting wires and bulb-socket assembly a. 250 mm long with crocodile clips-red b. bulb and socket assembly) dry cell holder, 1 chamber, for size d dry cell flashlight with incandescent bulb
GRADE FOUR (FIRST QUARTER)	
1. Describe changes in solid materials when they are bent, press, hammered, or cut	long nose pliers (6") mortar and pestle (150ml capacity, porcelain)
2. Describe changes in properties of materials when exposed to certain conditions such as temperature or when mixed with other materials	1. beakers, 250 ml 2. beral pipette, 5ml 3. double pan balance 4. erlenmeyer flask, 2250 ml 5. graduated cylinder, plastic, 250ml 6. stirring rod 7. test tubes 8. thermometer, alcohol
GRADE FOUR (SECOND QUARTER)	
1. Describe the main function of the major organs 2. Communicate that the major organs work together to make the body function properly 3. Identify the causes and treatment of diseases of the major organs 4. Practice habits to maintain a healthy body	human torso model, skeleton model
5. Identify the specialized structures of terrestrial and aquatic plants	hand magnifying lens
6. Conduct investigation on the specialized structures of plants given varying environmental conditions: light, water, temperature, and soil type	hand magnifying lens (5x), thermometer (alcohol, 20°c to 100°c)
7. Describe some types of beneficial interactions among living things	fresh water aquarium with stand
GRADE FOUR (FOURTH QUARTER)	
1. Compare and contrast the characteristics of different types of soil	hand magnifying lens, 5x
2. Use weather instruments to measure the different weather components 3. Record in a chart the weather conditions 4. Make simple interpretations about the weather as recorded in the weather chart 5. Identify safety precautions during different weather conditions 6. Describe the changes in the position and length of shadows in the surroundings as the position of the sun changes 7. Describe the role of the sun in the water cycle 8. Describe the effects of the sun	1. simple anemometer 2. aneroid barometer (wall-type) 3. hydrometer/ psychometer 4. magnetic compass 5. rain gauge 6. thermometers 7. wind vane 8. classroom thermometer
GRADE FIVE (FIRST QUARTER)	
1. Investigate changes that happen in materials under the following conditions: 1.1. Presence or lack of oxygen; and 1.2. Application of heat	alcohol lamp glass (150 ml capacity) stirring rod
GRADE FIVE (SECOND QUARTER)	
2. Describe the parts of the reproductive system and their functions	human torso model
GRADE FIVE (THIRD QUARTER)	
1. Describe the motion of an object by tracing and measuring its change in position (distance	meter stick plastic ruler (12 inches or 30 cm)

travelled) over a period of time	stopwatch
2. Use appropriate measuring tools and correct standard units	double-pan balance (500g)
3. Discuss why some materials are good conductors of heat and electricity	1. aluminum rod 2. beaker 3. copper rod 4. heat conduction apparatus (with 5 different metals) 5. plastic rod 6. steel rod 7. stirring rod 8. test tube holder 9. test tube rack 10. tripod 11. wire gauze 12. wood rod
4. Infer the conditions necessary to make a bulb light up	1. bulb and bulb socket 2. connecting wires 3. dry cell holders
5. Determine the effects of changing the number or type of components in a circuit	electricity and magnetism kit: a. 2 pcs – size d dry cell holder b. 2 pcs – dry cell, size d c. 6 pcs blue connecting wires with alligator clip and banana plug d. 1 pc – knife switch e. 3 assembles – socket with bulb, terminal binding f. 100 g – magnet wire #20 g. 1 pc – iron core rod (1012 mm ø x 100mm)
6. Infer that electricity can be used to produce magnets	1. #22 single wire (solid)/magnet wire 2. connecting wires 3. dry cell holder 4. iron rod/nail core 5. knife switch
GRADE FIVE (FOURTH QUARTER)	
1. Observe the changes in the weather before, during, and after a typhoon	simple anemometer, aneroid barometer, wall-type
2. Infer the pattern in the changes in the appearance of the Moon	1. sun-earth-moon model 2. flashlight 3. ordinary globe 4. small ball (e.g. styrofoam)
GRADE SIX (FIRST QUARTER)	
1. Enumerate techniques in separating mixtures such decantation, evaporation, filtering, sieving, and using magnets	1. beaker (250 ml), borosilicate 2. evaporation setup (stand setup, evaporating dish, ring with stem, wire gauze, alcohol lamp/Bunsen burner, 2 universal clamp, stirring rod) 3. funnel, plastic 4. test tube (Ø 16mm x 150mm long), borosilicate 5. watch glass
GRADE SIX (SECOND QUARTER)	
1. Explain how the organs of each organ system work together	human torso model
2. Discuss the interactions among living things and non-living things	fresh water aquarium with stand
GRADE SIX (THIRD QUARTER)	
1. Infer how friction and gravity affect movements of different objects	nstic scikit mechanics: friction apparatus, hooked masses, spring balances
2. Demonstrate how sound, heat, light, and electricity can be transformed	1. alcohol lamp, glass (150 ml.) capacity 2. electricity and magnetism kit: a. 2 pcs – size d dry cell holder

	b. 2 pcs – dry cell, size d c. 6 pcs blue connecting wires with alligator clip and banana plug d. 1 pc – knife switch e. 3 assembles – socket with bulb, terminal binding f. 100 g – magnet wire #20 g. 1 pc – iron core rod (10-12 mm ø x 100mm)
3. Demonstrate the practical and safe uses of simple machines	pulley set: a. 1 pc – double pulley, b. 1 pc – single pulley
GRADE SIX (FOURTH QUARTER)	
1. Demonstrate rotation and revolution of the Earth using a globe to explain day and night and the sequence of seasons	1. flashlight 2. relief globe 3. small ball (e.g. styorofoam) 4. sun-earthmoon model
2. Compare the planets of the solar system	solar system model
GRADE SEVEN (FIRST QUARTER)	
1. Investigate properties of unsaturated or saturated solutions 2. Express concentrations of solutions quantitatively by preparing different concentrations of mixtures according to uses and availability of materials	1. osmosis apparatus 2. volumetric flask (250 ml) 3. graduated cylinder (100 ml) 4. triple beam balance 5. beaker 6. erlenmeyer flask
3. Distinguish mixtures from substances based on a set of properties	penlight, thermometer, alcohol
4. Recognize that substances classified into elements and compounds	electrolysis apparatus, periodic table of elements
5. Investigate properties of acidic and basic mixtures using natural indicators	1. beaker (250 ml) 2. erlenmeyer flask 3. medicine droppers 4. ph meter 5. ph paper 6. test tubes 7. vials 8. volumetric flask (250 ml)
6. Describe some properties of metals and non-metals such as luster, malleability, ductility, and conductivity	electrical conductivity apparatus, improvised thermal conductivity apparatus
GRADE SEVEN (SECOND QUARTER)	
1. Identify the parts of the microscope and their functions	compound microscope
GRADE SEVEN (THIRD QUARTER)	
1. Describe the motion of an object in terms of distance, or displacement, speed, or velocity, and acceleration	nstic scikit basic and mechanics: stand base; stand support; stand support; stand rods; multi-clamps; stopwatch (digital); cartrail system; motorized cart; free-fall apparatus; meter stick; magnetic compass; ticker timer set
2. Infer the conditions, necessary for heat transfer to occur	heat conduction metals (different metals)
GRADE SEVEN (FOURTH QUARTER)	
1. Demonstrate how places on Earth maybe located using a coordinate system	ordinary globe/terrestrial globe
2. Explain how solar and lunar eclipses occur	1. flashlight 2. ordinary globe 3. sun-earthmoon model 4. small ball (e.g. styrofoam)
GRADE EIGHT (FIRST QUARTER)	
1. Investigate the relationship between the amount of force applied and the mass of the object to the amount of change in the object's motion	nstic scikit basic and mechanics: stand base; stopwatch (digital); cart-rail system; spring balances; ring and cylindrical masses; meter stick

2. Infer that when a body exerts a fore on another, an equal amount of forces is exerted back on it	spring balances
3. Infer how the movement of particles of an object affects the speed of sound through it	diffraction slits & diffraction grating
4. Demonstrate the existence of the color components of visible light using a prism or diffraction grating	prism
5. Differentiate between heat and temperature at the molecular level	thermometer
6. Differentiate between heat and temperature at the molecular level	1. dry cell holders 2. multi-meter resistor 3. switch 4. wire connectors
7. Explain the advantages and disadvantages of series and parallel connections in homes	1. dc ammeter 2. dc voltmeter 3. dry cell size d, 1.5 volts, dry cell, 9 volts 4. dry cell holder size d (1set= 4 pcs) 5. miniature light bulb (1 set = 3 pcs) 6. miniature light bulb base (1set = 3 pcs) 7. set of connectors (1 set = 3- red, 3- black, 2- white, 2- blue) 8. switches, knife type
8. Differentiate electrical power and electrical energy and	1. dc ammeter 2. dc voltmeter 3. dry cell size d, 1.5 volts 4. dry cell, 9 volts
9. Explain the functions of circuit breakers, fuses, earthing, double insulation, and other safety devices in the home	Galvanometer, fuse holder with fuse
GRADE EIGHT (SECOND QUARTER)	
1. Differentiate the epicentre of an earthquake form its focus 2. Differentiate the intensity of an earthquake from its magnitude 3. Differentiate active and inactive faults	seismograph model
GRADE EIGHT (THIRD QUARTER)	
1. Determine the number of protons, neutrons, and electrons in a particular atom	1. improvised bohrsommerfield atomic model 2. improvised energy levels model 3. improvised isotopes of carbon 4. improvised subshells model
2. Use the periodic table to predict the chemical behavior of an element	periodic table of elements, improvised periodic table blocks
GRADE EIGHT (FOURTH QUARTER)	
1. Explain ingestion, absorption, assimilation, and excretion	human torso model
2. Compare mitosis and meiosis, and their role in the cell division cycle	1. meiosis model 2. mitosis model
3. Explain the significance of meiosis in maintaining the chromosome number	meiosis model
GRADE NINE (FIRST QUARTER)	
1. Explain how the respiratory and circulatory systems work together to transport nutrients, gases, and others molecules to and fro the different parts of the body 2. Infer how one's lifestyle can affect the functioning of respiratory and circulatory systems	human torso model
3. Differentiate basic features and importance of photosynthesis and respiration	1. beaker 2. funnel 3. test tube 4. thermometer

	5. tripod 6. alcohol lamp 7. wire gauze 8. test tube rack 9. ph paper
GRADE NINE (SECOND QUARTER)	
1. Explain the formation of ionic and covalent bonds	1. improvised covalent bonding model (h2, o2, n2) 2. improvised ionic bonding model (nacl) 3. molecular models (inorganic/ organic) 4. vsepr kit
2. Explain how the structure of the carbon atom affects the type of bonds it forms 3. Recognize the general classes and uses of organic compounds	improvised hydrocarbons model
4. Use the mole concept to express mass of substances 5. Determine the percentage composition of a compound given its chemical formula and vice versa	triple beam balance
GRADE NINE (THIRD QUARTER)	
1. Explain how different factors affect the climate of an area	thermocline
2. Infer the characteristics of stars based on the characteristics of the Sun 3. Show which constellations may be observed at different times of the year using models	celestial globe
GRADE NINE (FOURTH QUARTER)	
1. Infer that the total momentum before and after collision is equal	nstic scikit basic and mechanics: cart-rail system; cylindrical masses; meter stick
2. Perform activities to demonstrate conservation of mechanical energy	nstic scikit: basic and mechanics: stand base, stand support, stand rods, lever beam; pulleys; cart-rail system; hooked masses; meter stick; spring balances
3. Explain how electrical energy is generated, transmitted, and distributed.	1. dc ammeter 2. dc voltmeter 3. dry cell holder size d (1set= 4 pcs) 4. dry cell size d (1.5 volts) 5. dry cell, 9 volts 6. galvanometer 7. miniature light bulb (1 set = 3 pcs) 8. miniature light bulb base (1set = 3 pcs) 9. motorgenerator model 10. set of coils 11. set of connectors (1 set = 3- red, 3- black, 2- white, 2- blue) 12. switches, knife type 13. variable power supply (acdc)
GRADE TEN (SECOND QUARTER)	
1. Predict the qualitative characteristics orientation, type, and magnification) of images formed by plane and curved mirrors and lenses	1. basics lens set 2. mirror set 3. student optical bench set
2. Demonstrate the generation of electricity by movement of a magnet though a coil	1. dc ammeter 2. dc voltmeter 3. dry cell size d (1.5 volts) 4. dry cell (9 volts) 5. dry cell holder size d (1 set= 4 pcs) 6. galvanometer 7. miniature light bulb (1 set = 3 pcs) 8. miniature light bulb base (1set = 3 pcs) 9. motor generator model

	10. set of coils 11. set of connectors (1 set = 3- red, 3- black, 2- white, 2- blue) 12. switches, knife type 13. variable power supply (acdc)
3. Explain the operation of a simple electric motor and generator	advanced electromagnetism kit
GRADE TEN (THIRD QUARTER)	
1. Describe the parts of the reproductive system and their functions	human torso model
2. Explain how fossil records, comparative anatomy, and genetic information provide evidence for evolution	compound microscope
GRADE TEN (FOURTH QUARTER)	
1. Investigate the relationship between: 2. Volume and pressure at constant temperature of a gas 3. Volume and temperature at constant pressure of a gas 4. Explains these relationships using the kinetic molecular theory	1. charles law setup 2. (stand setup assembly, ring with stem, wire gauze, alcohol burner) 3. erlenmeyer flask, balloon
5. Apply the principles of conservation of mass to chemical reactions	spatula , triple beam balance
6. Explain how the factors affecting rates of chemical reactions are applied in food preservation and materials production, control of fire, pollution, and corrosion	thermometer, alchohol

VI. MAPEH

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
HEALTH	
1. Describes a healthy person	weighing scale, bathroom-type height chart
2. Demonstrates the basic first aid	first aid kit
MUSIC	
3. Provides accompaniment to selected music of Luzon, Visayas, and Mindanao	Selected musical instrument: gong cymbals drums ukulele acoustic rondalla instruments keyboards flute portable sound system
PE	
4. Engages in active recreation 5. Participates in active recreation	Indoor: chessboards Outdoor: discus throw javelin throw volleyballs and nets basketballs and whistle baseball bats and softball bats baseball and softball balls body gear for arnis, taekwondo, wushu football and footsal balls and nets

	badminton rackets and shuttlecock tennis rackets and balls table tennis rackets and balls
ARTS	
6. Explores new print-making techniques	linoleum sheet of tin rubber coloring materials (crayons, oils pastels, poster paints) canvas oslo paper drawings pencils rulers erasers watercolors
7. Utilizes arts skills using new technologies (hardware and software in digital painting)	laptop
8. Creates a print for a shirt, bag, or a poster using stencils with abstract designs	stencils silkscreen
9. Creates a clay human figure that is balanced and can stand on its own	modelling clay
General: projector and white screen, portable sound system, meter stick, ruler, metronome, steel tape, L-square	

VII. English

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
1. Make inferences about thoughts and feelings based from text viewed/listened to 2. Note details in selection listened to	voice recorder, USB, microphone, lapel
3. Participate generating ideas through prewriting activities	bond paper, ruler, manila paper, cartolina
4. Make a card for various occasions (birthday, Christmas, New year, etc.)	manila paper, crayons, pair of scissors, ruler, pencils, bond paper
5. Read words, phrases, poems, or stories with long vowel **a** sound	practice worksheets
6. Identify the genre of material viewed (such as movie clip, trailer, news flash, internet-based program, documentary, video, etc.)	video player, voice recorder, tv set, camera
7. Use appropriate mechanisms/tools in the library for locating resources 8. Use the card catalog, the online public access catalog or electronic search engine to locate specific information	opac (online public access catalog), card catalog
9. Gather current information from newspapers and other print and non-print media 10. Get information from various print media like brochures, pamphlets, periodicals, and audio-visual recordings	newspaper, magazines, brochures
11. Provide critical feedback to the idea presented to a material viewed 12. Assess the effectiveness of the ideas presented in a material viewed taking into account its purpose	projector, tv set

VIII. Araling Panlipunan

LEARNING COMPETENCY	TOOLS AND EQUIPMENT
GRADE ONE	
1. Nasasabi ang mga batayang impormasyon tungkol sa sariling paaralan: pangalan nito (at bakit ipinangalan ang paaralan sa taong ito), lokasyon, mga bahagi nito, taon ng pagkakatatag at ilang taon na ito, at mga pangalan ng gusali o silid (at bakit ipinangalan sa mga taong ito)	mga larawan
2. Nakagagawa ng payak na mapa ng silidaralan/paaralan	globe philippine map asian map compass atlas
GRADE TWO	
1. Natutukoy ang mga bumubuo ng komunidad: 1.1 Mga tao: mga iba't ibang naninirahan sa komunidad, mga pamilya o mag-anak 1.2 Mga institusyon: paaralan, mga sentrong pamahalaan o nagbibigay serbisyo, sentrong pangkalusugan, pamilihan, simbahan o mosque at iba pang pinagtitipunan ng mga kasapi ng ibang relihiyon	mga larawan
2. Lokasyon (malapit sa tubig o bundok, malapit sa bayan), mga namumuno dito, populasyon, mga wikang sinasalita, atbp	globe philippine map asian map compass atlas
GRADE FOUR	
1. Nakapagbibigay ng halimbawa ng bansa 2. Natutukoy ang relatibong lokasyon (relative location) ng Pilipinas batay sa mga nakapaligid dito gamit ang pangunahin at pangalawang direksyon 3. Natutukoy sa mapa ang kinalalagyan ng bansa sa rehiyong Asya at mundo 4. Nakapagsasagawa ng interpretasyon tungkol sa kinalalagyan ng bansa gamit ang mga batayang heograpiya tulad ng iskala, distansya at direksyon 5. Natatalunton ang mga hangganan at lawak ng teritoryo ng Pilipinas gamit ang mapa 6. Naipaliliwanag ang katangian ng Pilipinas bilang bansang maritime o insular 7. Nailalarawan ang bansa ayon sa mga katangiang pisikal at pagkakakilanlang heograpikal nito 8. Nailalarawan ang kalagayan ng Pilipinas na nasa "Pacific Ring of Fire" at ang implikasyon nito	globe philippine map asian map compass atlas
9. Naiuugnay ang klima at panahon sa lokasyon ng bansa sa mundo. 10. Nailalarawan ang klima sa iba't ibang bahagi ng bansa sa tulong ng mapang pangklima	mapang pangklima
11. Natutukoy ang iba pang salik (temperatura, dami ng ulan) na may kinalaman sa klima ng bansa	references; statistical data
12. Naiisa-isa ang mga magagandang tanawin at lugar pasyalan bilang yamang likas ng bansa 10.4 Naihahambing ang topograpiya ng iba't ibang rehiyon ng bansa gamit ang mapang topograprapiya	mga larawan

GRADE FIVE	
1. Nailalarawan ang lokasyon ng Pilipinas sa mapa 2. Natutukoy ang kinalalagyan ng Pilipinas sa mundo gamit ang mapa batay sa "absolute location" nito (longitude at latitude) 1.2 Natutukoy ang relatibong lokasyon (relative location) ng Pilipinas batay sa karatig bansa na nakapaligid dito gamit ang pangunahin at pangalawang direksyon 3. Naipaliliwanag ang katangian ng Pilipinas bilang bansang archipelago 4. Naipaliliwanag ang teorya sa pagkakabuo ng kapuluan at pinagmulan ng Pilipinas batay sa teoryang Bulkanismo at "Continental Shelf"	globe philippine map asian map compass atlas
5. Nailalarawan ang klima ng Pilipinas bilang isang bansang tropikal ayon salokasyon nito sa mundo 5.1. Natutukoy ang mga salik na may kinalaman sa klima ng bansa tulad ng temperatura, dami ng ulan, humidity 5.2. Naipaliliwanag ang pagkakaiba ng panahon at klima sa iba't ibang bahagi ng mundo 2.3 Naiugnay ang uri ng klima at panahon ng bansa ayon sa lokasyon nito sa mundo	mapang pangklima planetarium
GRADE SIX	
1. Natutukoy ang kinalalagyan ng Pilipinas sa mundo sa globo at mapa batay sa "absolute location" nito (longitude at latitude) 2. Nagagamit ang grid sa globo at mapang politikal sa pagpapaliwanag ng pagbabago ng hangganan at lawak ng teritoryo ng Pilipinas batay sa kasaysayan 3. Naipapaliwanag ang kahalagahan ng lokasyon ng Pilipinas sa ekonomiya at politika ng Asya at mundo	globe philippine map asian map compass atlas
GRADE SEVEN	
1. Naipapaliwanag ang konsepto ng Asya tungo sa paghahating-heograpiko: Silangang Asya, Timog-Silangang Asya, Timog- Asya, Kanlurang Asya, Hilagang Asya at Hilaga/ Gitnang Asya 2. Nailalarawan ang mga katangian ng kapaligirang pisikal sa mga rehiyon ng Asya katulad ng kinaroroonan, hugis, sukat, anyo, klima at "vegetation cover" (tundra, taiga, grasslands, desert, tropical forest, mountain lands) 3. Nakapaghahambing ng kalagayan ng kapaligiran sa iba't ibang bahagi ng Asya 4. Nakakagawa ng pangkalahatang profile ng heograpiya ng Asya 5. Natataya ang mga implikasyon ng kapaligirang pisikal at yamang likas ng mga rehiyon sa pamumuhay ng mga Asyano noon at ngayon sa larangan ng:	globe philippine map asian map compass atlas
6. Nailalarawan ang mga yamang likas ng Asya	miniral map
7. Nasusuri ang kaugnayan ng yamang-tao ng mga bansa ng Asya sa pagpapaunlad ng kabuhayan at lipunan sa kasalukuyang panahon batay sa:	statistical data references
GRADE 8	
1. Nasusuri ang katangiang pisikal ng daigdig 2. Nasusuri ang kondisyong heograpiko sa panahon ng mga unang tao sa daigdig	globe philippine map

3. Naiuugnay ang heograpiya sa pagbuo at pag-unlad ng mga sinaunang kabihasnan sa daigdig 4. Nasusuri ang mga sinaunang kabihasnan sa daigdig batay sa politika, ekonomiya, kultura, relihiyon, paniniwala, at lipunan	asian map compass atlas
GRADE 9	
1. Nailalapat ang kahulugan ng demand sa pang-araw-araw na pamumuhay ng bawat pamilya 2. Naiuugnay ang elastisidad ng demand sa presyo ng kalakal at paglilingkod 3. Naiuugnay ang elastisidad ng demand at suplay sa presyo ng kalakal at paglilingkod 4. Naipapaliwanag ang interaksyon ng demand at suplay sa kalagayan ng presyo at ng pamilihan 5. Nasusuri ang mga epekto ng shortage at surplus sa presyo at dami ng kalakal at paglilingkod sa pamilihan	scientific calculator graphing board
GRADE 10	
1. Nauunawaan ang mga konsepto na may kaugnayan sa pagsasagawa ng CBDRRM Plan 2. Naipaliliwanag ang mga hakbang sa pagsasagawa ng CBDRRM 3. Naisasagawa ang mga hakbang ng CBDRRM Plan	DRRM KIT
General: historical tapes/videos , projector, pictures, refrences: historical books, coloring materials	