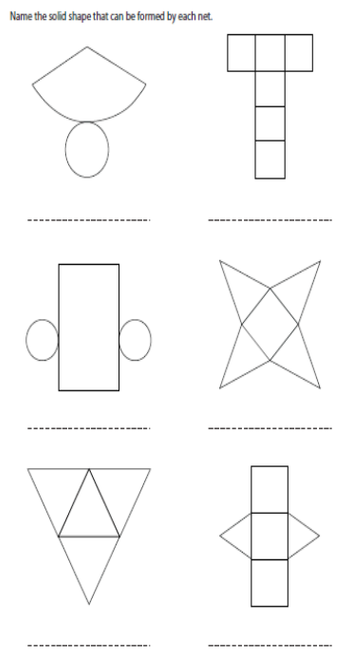
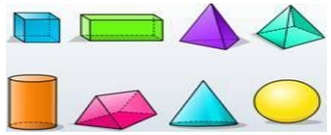
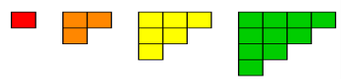
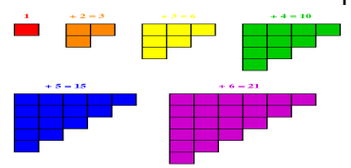
GRADES 1 to 12 DAILY LESSON LOG	School:	DepEdClub.com	Grade Level:	VI
	Teacher:	File created by Ma'am ANNALICE R. QUINAY	Learning Area:	MATHEMATICS
	Teaching Dates and Time:	FEBRUARY 19 – 23, 2024 (WEEK 4)	Quarter:	3RD QUARTER

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
I. OBJECTIVES	The learner…..				
A. Content Standard	demonstrates understanding of sequence in forming rules, expressions and equations.				
B. Performance Standard	is able to apply knowledge of sequence, expressions, and equations in mathematical problems and real-life situations.				
C. Learning Competencies / Objectives	55. formulates the rule in finding the nth term using different strategies (looking for a pattern, guessing and checking, working backwards) e.g. 4,7,13,16,…n (the nth term is 3n+1) **M6AL-IIId-7**		56. differentiates expression from equation. **M6AL-IIId-15**		Weekly Test
II. CONTENT	Patterns and Algebra	Patterns and Algebra	Patterns and Algebra	Patterns and Algebra	
III. LEARNING RESOURCES					
A. References					
1. Teacher's Guide pages	Lesson Guide in Elem. Math Gr. 6 p.85-87			Lesson Guide in Elem. Math Gr. 6 p. 1-6	
2. Learner's Materials pages	21st Century Mathletes 6, 200-209	21st Century Mathletes 6,	21st Century Mathletes 6	21st Century Mathletes 6,	
3. Textbook pages	21st Century Mathletes 6	21st Century Mathletes 6	21st Century Mathletes 6	21st Century Mathletes 6,	
4. Additional Materials from Learning Resource (LR) Portal					
B. Other Learning Resources	Mathletes 6 textbook, video clip, power point presentation	Mathletes 6 textbook, video clip, power point presentation, drawings of patterns, picture cards	Mathletes 6 textbook, video clip, power point presentation	Mathletes 6 textbook, video clip, power point presentation	
IV. PROCEDURES					
A. Reviewing previous lesson or presenting the new lesson	Drill: Have the pupils skip count by 5, by 8, by 10 and by 12 Present the ff. sequences and let the pupils give the 7th term in each. 3,6,9,12,…….. 0.6, 0.12, 0.18, ……. 7, 14, 21, 28, ……. 10,20,30,40, …… 9,14,19,24, ……	Drill: Game " Snow Ball " Have a drill on skip counting. Say, " Let us have skip counting by 3s from 3 to 30." Then, point at one pupil to start. The pupil who started will point to another pupil to continue and so on and so forth until you reach 30. Every pupil should listen to the previous answer to be able to give his/her own answer. The same procedure will be done to the following items.	Drill: Have the pupils skip count by 4, by 6, by 7 and by 9. Present the ff. sequences and let the pupils give the 7th term in each. 1.5,12,19,26, ……. 2.2,10,18,26, …… 3. 2,10,50,250,…… 4. 305,296,287,278, …… 5. 6,21,36,51, …….	Drill: **Drill on Giving Terms or Phrases that Refer to Addition, Subtraction, Multiplication, or Division** Game a) Divide the class into 2 groups. b) Teacher gives an operation, say "addition." c) Each member of the groups simultaneously goes to the board and writes a term or phrase that refers to the given operation.	Giving Directions.

	Review:  	See to it that every pupil in class will recite. a.Skip count by 4 from 4 to 40. b.Skip count by 5 from 5 to 50. c.Skip count by 6 from 6 to 60. Ask : Did you enjoy the activity? How were you able to follow the sequence of our skip counting? Emphasize the value of alertness. Do this exercise of patterns. Let the pupils fill in the missing shapes / numbers.  4.)12, 17, 22, ___, 32, ___, ___ 5.)1K, 2J, 3I, ___, ___, ___, 7E **Review** Guessing Game Divide the class into 4 groups. Show them the picture cards. Let them guess the name of the figure. 		Ex. more than, increased by, plus, added to, etc. d) Within 2 minutes, each group has to write as many terms or phrases as they can. Afterwards, the teacher checks and counts the correct answers. e) Repeat the same process with subtraction, multiplication, and division. f) The group with the most number of correct answers wins. Review:	
B. Establishing a purpose for the lesson	Have the pupils guess the next letter in the sequence. O, T,T, F,F,S,S,E,	Have a game on identifying whether a number is odd or even. Group the pupils into 2. As group 1 gives a number, Group 2 answers odd or even, then have them do it vice-versa. Ask: Have you tried answering a number pattern with missing terms? Let them know that odd or even numbers are used in number patterns.	Draw the next two patterns  Answer: 	Write an expression for each problem/situation on the blanks. 1.Helen is 13 years old, Helen's father is 4 years more than twice her age. ____ 2.Edna is 155 cm tall. Lilia's height is 10 cm less than twice Edna's height. __ 3.Roman weights 25 kilograms. His father weighs 5 kg less than 3 times Romans weight. _____	Test proper Original File Submitted and Formatted by DepEd Club Member - visit depedclub.com for more

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<td>4.Francis is ten years old. Ben is twice as old as Francis. _____
5.Aning is five years old. I am six years more than thrice her age. _</td>
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<td>C. Presenting Examples/Instances of new lesson</td>
<td>Present the Fibonacci Numbers in Pascal’s triangle and show the sum of numbers diagonally. (See TG p. 85 & Textbook p. 213)
Write the three numbers in the pattern.</td>
<td>Presentation
Mrs. Quinay presented these number patterns to his Math class.
1, 3, 7, 15, 31, 63

Ask : What do you think is the rule/pattern used to find the 2nd term? 3rd ? 4th? 5th? 6th?
1 x 2 + 1 = 3 15 x 2 + 1 = 31
3 x 2 + 1 = 7 31 x 2 + 1 = 63
7 x 2 + 1 = 15
Patterns : (x 2 + 1) or (+2, +4, +8, +16, +32)</td>
<td>Group Activity:
4, 10, 16, 22, 28
Write down the next two terms of the sequence.
b) Write down an expression for the nth term of this sequence.
c) Work out the 50th term of the sequence.
Solution
a) From looking at the sequence we can see that each term is 6 larger than the previous term. We say the term-to-term rule is "add 6". Therefore the next two terms are 34 and 40.
b) The nth term of a sequence is always written in the form "?n + ?".
The number in front of the "n" is always the difference to get from one term to the next. Since the difference is 6, the first part of our rule will be "6n". The rule follows the six times table: 6, 12, 18, 24... etc.
Now compare the 6 times table with our rule:
<table>
<tr><td>6 x table</td><td>6</td><td>12</td><td>18</td><td>24</td><td>3</td></tr>
<tr><td>Sequence</td><td>4</td><td>10</td><td>16</td><td>22</td><td>2</td></tr>
</table>
The numbers in the sequence are always 2 less than the 6 times table so we "adjust" our rule by subtracting 2. Now putting this together gives us: nth term = 6n - 2.
c) Now we know the nth term = 6n - 2 we just need to substitute</td>
<td>Present 5 + 3 and 5 + 3 = 8 on the board.
Have a pupil read aloud the expression 5 + 3 and the equation 5 + 3 = 8.
Ask: What is the difference between 5 + 3 and 5 + 3 = 8?
-Many students will quickly respond by stating that one has an equals sign and the other does not.
Say: 5 + 3 is called an expression. An expression consists of a number or a combination of numbers joined by operation symbols. An expression does not have an equal sign.
Erase 5 + 3. Point to 5 + 3 = 8.
Ask: What is on the left side of the equals sign? What is on the right side?
Elicit from students that an expression or value is on both sides of the equals sign in 5 + 3 = 8. Try to have students describe the numbers as well as the operation. The left side is an expression, 5 + 3, that is equal to the value of the right side, 8.
Say: 5 + 3 = 8 is called an equation. The left side of an equation equals the right side.
(Continue with additional examples, using different numbers. Try using two numbers on each side as well. Make sure both sides of these equations are equal.)</td>
<td>Checking</td>
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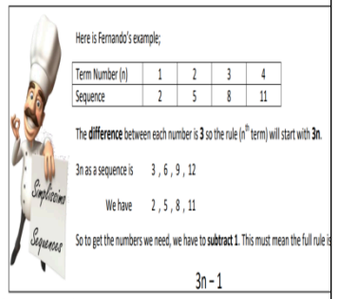
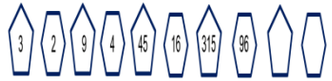
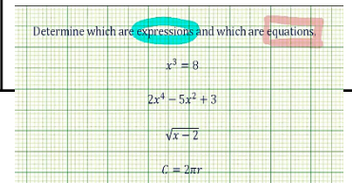
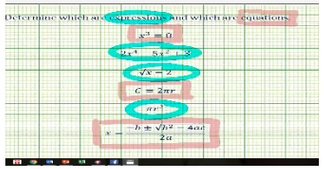
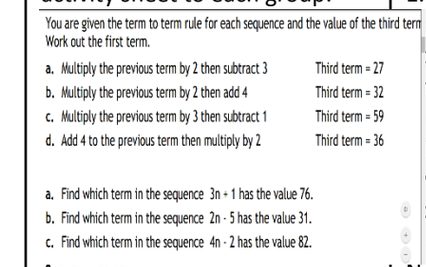
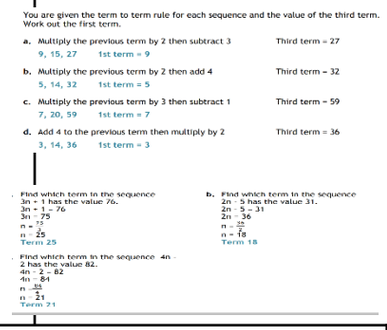
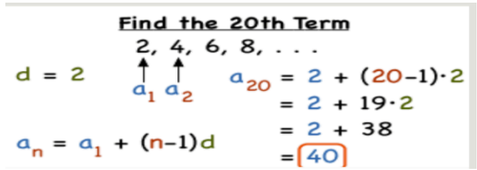
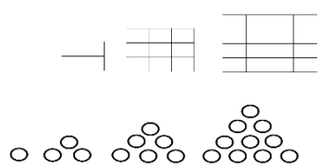
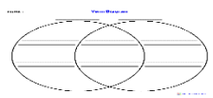
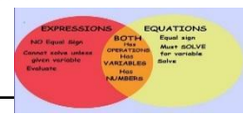
			n = 50 in order to find the 50th term of the sequence. So: The 50th term = 6 x 50 - 2 = 300 - 2 = 298		
D. Discussing new concepts and practicing new skills #1	The four basic operations (Addition, Subtraction, Multiplication and division) are commonly used in a sequence of numbers. In the Fibonacci numbers above, you start with the first two numbers. The succeeding numbers are the sum of the previous two. Therefore, following the pattern, the next three terms in the sequence are 13, 21 & 24. Try to find the next four patterns.	Group the pupils into 4. Let them answer items a to d by formulating/finding the rule in finding the next term in a sequence. Group 1 will answer a, Grp.2 for b, Grp. 3 for c, Grp. 4 for d. Let the pupils present their work on the board. 2, 5, 14, 41, 122 Ans.(x 3 – 1) 1, 5, 13, 29, 61 Ans(x 2 + 3) 1, 12, 34, 78, 166 Ans(+5 x 2) 6, 9, 15, 27, 51 Ans.(- 2 x 2 + 1)	Show a video on how to formulate the rule in finding the nth term using different strategies. "Writing a Formula from a Sequence"	Show a video of "Difference Between Expression and Equation" Discuss the difference between expressions and equations Expressions vs. Equations Expressions: $5x + 7$; $3x + 4y + 7$; $8 + 5$; $4(x + 6)$ Equations: $5x + 7 = 15$; $3x + 4y + 7 = 10$; $8 + 5 = 13x$; $4(x + 6) = 20x - 7$	Recording
E. Discussing new concepts and practicing new skills #2	Numbers, figures, objects or symbols arranged in a definite order or sequence is often encountered in mathematics. Discuss the content on page 214-218 of 21st Century Mathletes.	How did you find the activity ? How were you able to find the answer to the number pattern? Expected answers : Determine the order of numbers if it is ascending or descending. Find the difference between the consecutive terms. To find the rule of the next term, use the difference between terms. Explore and Discover A. 1, 3, 6, 10, 15, 21, 28, 36, 45 The encircled numbers form a number sequence. A number	 Here is Fernando's example; Term Number (n): 1 2 3 4 Sequence: 2 5 8 11 The **difference** between each number is **3** so the rule (n th term) will start with **3n**. 3n as a sequence is 3 , 6 , 9 , 12 We have 2 , 5 , 8 , 11 So to get the numbers we need, we have to **subtract 1**. This must mean the full rule is 3n - 1 For each of the following sequences; a) work out the next 3 terms, b) work out the n th term, c) use the n th term rule to work out the 20th term. 1) 3, 5, 7, 9 ... 2) 9, 12, 15, 18 ... 3) 7, 11, 15, 19 ... 4) 10, 16, 22, 28 ... 5) 1, 5, 9, 13 ... 6) 4, 11, 18, 25 ... 7) 2, 7, 12, 17 ... 8) 4, 9, 14, 19 ... 9) 7, 5, 2, 1 ... 10) 16, 13, 10, 7 ... Write down the first **five terms** of the sequence with the following n th terms: 11) 3n + 6 12) 2n - 3 13) -2n + 1 14) -5n + 12	Group Activity: Write the ff. sentences or phrases in proper column: 1.a phrase 2.a sentence 3.solves 4.simplifies 5.has a relation symbol 6. has no relation symbol 7. has no equal sign 8. Has an equal sign 9. Has a left and right sides 10. Doesn't have any sides Expression | Equation (6 empty rows)	

1	2	**3**	4	5	**6**	7	8	9	**10**
11	12	13	14	**15**	16	17	18	19	20
21	22	23	24	25	26	27	**28**	29	30
31	32	33	34	35	**36**	37	38	39	40
41	42	43	44	**45**	46	47	48	49	50

		sequence is a list of numbers in which successive terms follow a rule or pattern. Each number in s sequence is called a term. Looking at the pattern of the encircled number, to find the 2nd term add 2, for the 3rd term add 3, for the 4th term add 4, for the 5th term add 5, for the 6th term add 6, for the 7th term add 7, for the 8th term add 8, and for the 9th term add 9. Therefore. the rule in the sequence is (+2, +3, +4, +5, +6, +7, +8, +9). By studying the sequence of numbers, we can find the rule governing the terms. The rule can tell us what number will come next in the sequence. B. Find the missing terms in the following situations below:  Can you find the pattern or sequence used? The numbers inside the pentagon are multiplied by consecutive odd numbers 3, 5, 7. Starting with 3 x 3 = 9, then 9 x 5 = 45, then 45 x 7 = 315, so the missing number in the last pentagon is 2 835 (315 x 9 = 2 835). The series of numbers inside the hexagon uses even numbers as factors. So, the missing number inside the last hexagon is 768(96 x 8 =768).			
F. Developing mastery (Leads to Formative Assessment)	Find the rule, then, write the missing terms. 12, 17, 22, ____, 32, ____ ____, ____, 67, 70, 73 56, ____, 42, 35, 28, ____	Study the rule/pattern. Supply the missing terms. 9, 16, 25, 36, ____ 16, ____, 36, 49, ____, 81 10, 38, 150, ____, 2 390	Group Activity: Finding the nth term. In each question there are four terms of a sequence of numbers: a) Write down the	Group Activity: Encircle the expression and box the equation:  	

	3, ____, 27, 81, ____ 78, 70, 62, ____, ____	8, 16, 64, _____, _____ 6, 6, 18, _____, 630, _____	rule using n to represent the nth term. b) Find the 10th and 15th terms. Term | 1 | 2 | 3 | 4 | Nth | 10 | 15 Sequence | 1 | 4 | 7 | 10 Term | 1 | 2 | 3 | 4 | Nth | 10 | 15 Sequence | 1 | 3 | 5 | 7 Term | 1 | 2 | 3 | 4 | Nth | 10 | 15 Sequence | 1 | 4 | 7 | 10 Term | 1 | 2 | 3 | 4 | Nth | 10 | 15 Sequence | 8 | 13 | 18 | 23 Term | 1 | 2 | 3 | 4 | Nth | 10 | 15 Sequence | 9 | 13 | 17 | 21	ıswer: 	
G. Finding practical applications of concepts and skills in daily living	Group Activity: Find the nth term rule for each of the following linear sequences. 7,9,11,13,15,... −3,−2,−1,0,1,... 2,6,10,14,18,... 3,6,9,12,15,... 2,7,12,17,22,... 12,13,14,15,16,... 5,6,7,8,9,... 0,1,2,3,4,... −3,−2,−1,0,1,... . 20,21,22,23,24,...	Group Activity: Find the missing terms and write the rules. 5, 6, 8, ____, 15, ____ 18, 20, 24, ____, 38, ____ 55, 54, 51, 46,___, ___, 19 25, 28, 3, _____, _____, 70 82, 81, 78, ____, 66, ____	Group Activity: Distribute this activity sheet to each group:  You are given the term to term rule for each sequence and the value of the third term. Work out the first term. a. Multiply the previous term by 2 then subtract 3 — Third term = 27 b. Multiply the previous term by 2 then add 4 — Third term = 32 c. Multiply the previous term by 3 then subtract 1 — Third term = 59 d. Add 4 to the previous term then multiply by 2 — Third term = 36 a. Find which term in the sequence 3n + 1 has the value 76. b. Find which term in the sequence 2n - 5 has the value 31. c. Find which term in the sequence 4n - 2 has the value 82. Answers:  You are given the term to term rule for each sequence and the value of the third term. Work out the first term. a. Multiply the previous term by 2 then subtract 3 — Third term = 27 9, 15, 27 1st term = 9 b. Multiply the previous term by 2 then add 4 — Third term = 32 5, 14, 32 1st term = 5 c. Multiply the previous term by 3 then subtract 1 — Third term = 59 7, 20, 59 1st term = 7 d. Add 4 to the previous term then multiply by 2 — Third term = 36 3, 14, 36 1st term = 3 a. Find which term in the sequence 3n + 1 has the value 76. 3n + 1 = 76 3n = 75 n = 75/3 n = 25 Term 25 b. Find which term in the sequence 2n - 5 has the value 31. 2n - 5 = 31 2n = 36 n = 36/2 n = 18 Term 18 c. Find which term in the sequence 4n - 2 has the value 82. 4n - 2 = 82 4n = 84 n = 84/4 n = 21 Term 21	Group Activity: 1.Using power point presentation, the acher will flash an expression or quation. ıe leader of the group will write EX if e statement is an expression and EQ it is an equation. N + 5 = 45 x (8-7) = 10 (7+11) N + 15 = 35 – N 100/5 = 20 (25 ÷ 5) x 9 2 (N + 6) = 22 5 (N + 6) 7x10 =5N 16 x 7	
H. Making generalizations and abstractions about the lesson	Lead the pupils to give the following generalization by asking: How do we find / formulate the rules in finding the next term in a sequence? Ans: Determine the order of numbers if it is ascending or descending. Find the difference between the consecutive terms.			How do you differentiate expression from equation? To sum up: 1.Expressions are incomplete mathematical phrases whereas	

	To find the rule of the next term, use the difference between terms. Example:  			equations are complete mathematical statements. 2.Expressions are like the typical English phrase whereas equations are complete sentences. 3.Equations show relationships whereas expressions don't show any. 4.Equations have an equal sign whereas expressions don't have any. 5.Equations are to be solved while expressions are to be simplified. 6.Equations have a solution while expressions don't have any. (Let the pupils watch the video about the differences of "Expression VS. Equation.")	
I. Evaluating Learning	A.Supply the next three letters, figures, symbols or combination of numbers and letters in the ff. patterns. Then write the rule for finding the nth term. 1)3, 7, 11, 15, ____ Ans:19 (+4) 2)5, 9, 17, 33, ____ Ans:65 (x 2 – 1) 3)20, 12, 8, 6, ____ Ans:5 (÷ 2 + 2) 4)2, 8, 26, 80, ____ Ans:242 (x 3 + 2) 5)36, 69, 135, 267, ____ Ans:531 (x 2 – 3)	Write the rule used for each sequence, then write the missing number.	Write down the next term for each of the ff. sequences, then find the rule. 1. 4, 11, 18, 25, 32, … 39 2. 13, 19, 25, 31, 37, … 43 3. 7, 17, 27, 37, 47, … 57 4. −2, 1, 4, 7, 10, … 13 5. −8.8, −7.6, −6.4, −5.2, −4, … -2.8 6. −1, 7, 15, 23, 31, … 39 7. −10, −11, −12, −13, −14, … -15 8. −17, −18, −19, −20, −21, … -22 9. −15.7, −15.4, −15.1, −14.8, −14.5, … -14.2 10. −15, −29, −43, −57, −71, … -85	Look at the statements below. Draw a circle if the statement is an expression and a square if it is an equation. _____1.)5 + 9 _____2.) (50÷5) = 5 2 _____3.) 8 x 6 = 48 _____4.) 0.5+0.2=0.4 + 0.3 _____5.) (75x2) 10 Determine if the following are expressions or equations: 1) 7x • 1) expression 2) (6-3) – 1 = 2 • 2) equation 3) 14 = 7(2) • 3) equation 4) X + 9 = 13 • 4) equation 5) 12 – 5 • 5) expression	
J. Additional activities for application and remediation	Answer Math Challenge on page 223	Study each sequence. Give the rule used then give the missing term. 105, 100, ____, 75, ____ 6, 10, 15, 21, ____, ____ 3, 7, 19, ____, 163, ____ 4, 6, 10, ____, ____, 66	Study the following sequence of figure. Then, draw the next figure and write the rule used to find the answer. 	Give the differences and similarities of expression and equation using Venn Diagram  Answer:  	

V. Remarks					
VI. REFLECTIONS					
A. No. of learners who earned 80% on the formative assessment					
B. No. of learners who require additional activities for remediation who scored below 80%					
C. Did the remedial lessons work? No. of learners who have caught up with the lesson					
D. No. of learners who continue to require remediation					
E. Which of my teaching strategies worked well? Why did this work?					
F. What difficulties did I encountered which my principal or supervisor can help me solve?					
G. What innovation or localized materials did I use/discover which I wish to share with other teachers?					