Title: Multiples of the Simple composite numbers by Golden Patterns.
Author: Gabriel Martin Zeolla
Comments: 8 pages and 7 tables.
Subj-class: Number Theory
gabrielzvirgo@hotmail.com

Abstract: This paper develops the analysis of Simple composite numbers by golden patterns. Examine how the Simple composite numbers are distributed in different combinations of multiples.

Keywords: Golden Pattern, Simple composite number.

Golden patterns

All the golden patterns have the same characteristics, (harmony, equilibrium, balance, etc)

Nc= Simple Composite number

Golden Patterns	Size of the Golden Patterns Pt	Simple Composite Number Nc by Pattern
3-Golden Pattern	18	**12**
5-Golden Pattern	90	**66**
7-Golden Pattern	630	**486**
11-Golden Pattern	6.930	**5.490**
13-Golden Pattern	90.090	**72.810**
17-Golden Pattern	1.531.530	**1.255.050**

Table 1

Reference
Simple composite numbers by Golden Patterns http://vixra.org/abs/1803.0298

3-Golden Pattern http://vixra.org/abs/1803.0098

This pattern consists of numbers from 1 to 18, of which 12 are Simple composite numbers. The rest are simple Prime numbers.

	3- Golden Pattern	
	Multiples	Quantity of Simple composite number
A	Multiples of 2 only	6
B	Multiples of 3 only	3
C	Multiples of 2 and 3 only	3
	Total	12

Table 2

$\boldsymbol{3 - Golden\ Pattern\ 1 \geq 18}$

When $n \geq 0\ and\ n \leq 2$
$\mathrm{A} = \ 6 * \mathrm{n} + 2 = \{2,8,14\}$
$\mathrm{A} = 6 * n + 4 = \{4, 10, 16\}$

When $n \geq 0\ and\ n \leq 2$
$B = \ 6 * n + 3 = \ \{3, 9, 15\}$

When $n \geq 0\ and\ n \leq 2$
$C = 6 * n + 6 \ = \ \{6, 12, 18\}$

5-Golden Pattern http://vixra.org/abs/1802.0201

This pattern consists of numbers from 1 to 90 of which 66 are Simple composite numbers. The rest are simple Prime numbers.

	5- Golden Pattern		
	Multiples	Quantity of Simple composite number	Relationship with 3-Golden Pattern
A1	Multiples of 2 only	30	A*5
B1	Multiples of 3 only	15	B*5
C1	Multiples of 5 only	6	B*2
D1	Multiples of 2 and 3 only	15	C*5
	Total	66	

Table 3

$\mathbf{5 - \textit{Golden Pattern}\ 1 \geq 90}$

When $n \geq 0\ and\ n \leq 14$
$\mathrm{A1} = \ 6 * \mathrm{n} + 2 = \{2,8,14,20,26,32,38,44,50,56,62,68, \dots \dots \dots \dots 86\}$
$\mathrm{A1} = 6 * n + 4 = \{4, 10,16,22,28,34,40,46,52,58,64, \dots \dots \dots \dots 88\}$

When $n \geq 0\ and\ n \leq 14$
$\mathrm{B1} = 6 * n + 3 = \{3,9,15,21,27,33,39,45,51,57,63,69,75,81,87\}$

When $z \geq 0\ and\ n \leq 2$
$\mathrm{C1} = (6 * n_{\ n=4+5*Z} + 1) = \{25,55,85\}$
$\mathrm{C1} = (6 * n_{\ n=1+5*Z} - 1)\ = \{5,35,65\}$

When $n \geq 0\ and\ n \leq 14$
$\mathrm{D1} = 6 * n + 6 = \{6,12,18,24,30,36,42,48,54,60,66,72,78,84,90\}$

7-Golden Pattern http://vixra.org/abs/1801.0064

This pattern consists of numbers from 1 to 630, of which 486 are Simple composite numbers. The rest are simple Prime numbers.

	7- Golden Pattern		
	Multiples	Quantity of Simple composite number	Relationship with **5-Golden Pattern**
A2	Multiples of 2 only	210	A1*7
B2	Multiples of 3 only	105	B1*7
C2	Multiples of 5 only	36	C1*6
D2	Multiples of 7 only	24	C1*4
E2	Multiples of 2 and 3 only	15	=B1
F2	Multiples of 5 and 7 only	6	=C1
	Total	486	

Table 4

$\mathbf{7 - \mathit{Golden\ Pattern}\ 1 \geq 630}$

When $n \geq 0\ and\ n \leq 104$
$\text{A2} = 6 * \text{n} + 2 = \{2,8,14,20,26,32,38,44,50,56,62,68, \dots \dots \dots \dots 626\}$
$\text{A2} = 6 * n + 4 = \{4,10,16,22,28,34,40,46,52,58,64, \dots \dots \dots \dots 628\}$

When $n \geq 0\ and\ n \leq 104$
$\text{B2} = 6 * n + 3 = \{3,9,15,21,27,33,39,45,51,57,63,69,75,81,87, \dots \dots \dots .621,627\}$

When $z \geq 0\ and\ z \leq 20$
$\text{C2} = (6 * n_{\substack{n=4+5*Z \\ Z\neq 5,12,19}} + 1) = \{25,55,85, \dots \dots \dots ,625\}$
$\text{C2} = (6 * n_{\substack{n=1+5*Z \\ Z\neq 1,8,15}} - 1) = \{5,35,65, \dots \dots \dots \dots 605\}$

When $Z \geq 0\ and\ Z \leq 13$
$\text{D2} = (6 * n_{\substack{n=1+7*Z \\ Z\neq 2,8}} + 1) = \{7,49,91,133,217,259,301,343,427,469,511,553,\}$
When $Z \geq 1\ and\ Z \leq 14$
$\text{D2} = (6 * n_{\substack{n=6+7*Z \\ Z\neq 6,12}} - 1) = \{77,119,161,203,287,329,371,413,497,539,581,623\}$

When $n \geq 0\ and\ n \leq 104$
$\text{E2} = 6 * n + 6 = \{6,12,18,24,30,36,42,48,54,60,66,72,78,84,90, \dots \dots ..624,630\}$

When $n \geq 0\ and\ n \leq 2$
$\text{F2} = (30 * n + 5) * 7 = \{35,245,455\}$

When $n \geq 1\ and\ n \leq 3$
$\text{F2} = (30 * n - 5) * 7 = \{175,385,595\}$

11-Golden Pattern http://vixra.org/abs/1802.0236

This pattern consists of numbers from 1 to 6.930, of which 5.490 are Simple composite numbers. The rest are simple Prime numbers.

	11- Golden Pattern		
	Multiples	Quantity of Simple composite number	Relationship with **7-Golden Pattern**
A3	Multiples of 2 only	2.310	A2*11
B3	Multiples of 3 only	1.155	B2*11
C3	Multiples of 5 only	360	C2*10
D3	Multiples of 7 only	240	D2*10
E3	Multiples of 11 only	144	D2*6
F3	Multiples of 2 and 3 only	1.155	E2*11
G3	Multiples of 5 and 7 only	60	F2*10
H3	Multiples of 5 and 11 only	36	=C2
i3	Multiples of 7 and 11 only	24	=D2
J3	Multiples of 5, 7 and 11 only	6	=F2
	Total	5.490	

Table 5

$$\mathbf{11 - \mathit{Golden\ Pattern}\ 1 \geq 6930}$$

13-Golden Pattern http://vixra.org/abs/1802.0363

This pattern consists of numbers from 1 to 90.090, of which 72,810 are Simple composite numbers. The rest are simple Prime numbers.

	13- Golden Pattern		
	Multiples	Quantity of Simple composite number	Relationship with **11-Golden Pattern**
A4	Multiples of 2 only	30.030	A3*13
B4	Multiples of 3 only	15.015	B3*13
C4	Multiples of 5 only	4.320	C3*12
D4	Multiples of 7 only	2.880	D3*12
E4	Multiples of 11 only	1.728	E3*12
F4	Multiples of 13 only	1.440	E3*10
G4	Multiples of 2 and 3 only	15.015	F3*13
H4	Multiples of 5 and 7 only	720	G3*12
i4	Multiples of 5 and 11 only	432	H3*12
J4	Multiples of 5 and 13 only	360	=C3
K4	Multiples of 7 and 11 only	288	i3*12
L4	Multiples of 7 and 13 only	240	=D3
LL4	Multiples of 11 and 13 only	144	=E3
M4	Multiples of 5, 7 and 11 only	72	J3*12
N4	Multiples of 5, 7 and 13 only	60	=G3
Ñ4	Multiples of 5, 11 and 13 only	36	=H3
O4	Multiples of 7, 11 and 13 only	24	=i3
P4	Multiples of 5,7,11 and 13 only	6	=J3
	Total	72.810	

Table 6

$$\mathbf{13 - \mathit{Golden\ Pattern}\ 1 \geq 90.090}$$

	Quantity of combination of dividers					
Patterns	Individuals	Double	Triple	Quadruples	Quíntuple	**Total**
3-Golden	2	1				3
5-Golden	3	1				4
7-Golden	4	2				6
11-Golden	5	4	1			10
13-Golden	6	7	4	1		18
17-Golden	7	11	10	5	1	34

Table 7

Formula for the quantity of dividers combined per Golden Pattern

$$Dc = dividers\ combined$$

$$Dc = 2 + 2^x$$
$$x \geq 0$$

$$3 - Golden\ Pattern\ \ Dc = 2 + 2^0 = 3$$
$$5 - Golden\ Pattern\ \ Dc = 2 + 2^1 = 4$$
$$7 - Golden\ Pattern\ \ Dc = 2 + 2^2 = 6$$
$$11 - Golden\ Pattern\ \ Dc = 2 + 2^3 = 10$$
$$13 - Golden\ Pattern\ \ Dc = 2 + 2^4 = 18$$
$$17 - Golden\ Pattern\ \ Dc = 2 + 2^5 = 34$$

Continue……

A052548 The On-Line Encyclopedia of Integer Sequences® (OEIS®)

Final conclusion

There is an immense relationship between all Patterns and the construction and formation of Simple composite numbers. We can see how they are linked together. We can affirm that the distribution of the numbers of the traditional composite numbers is very linked to the Golden Patterns. Also the Prime numbers.

References

Zeolla Gabriel Martin, 3-Golden Pattern. http://vixra.org/abs/1803.0098
Zeolla Gabriel Martin, 5-Golden Pattern. http://vixra.org/abs/1802.0201
Zeolla Gabriel Martin, 7-Golden Pattern. http://vixra.org/abs/1801.0064
Zeolla Gabriel Martin, 7-Golden Pattern, Formula to Get the Sequence. http://vixra.org/abs/1801.0381
Zeolla Gabriel Martin, 11-Golden Pattern. http://vixra.org/abs/1802.0236
Zeolla Gabriel Martin, 13-Golden Pattern. http://vixra.org/abs/1802.0363
Zeolla Gabriel Martin, 17-Golden Pattern. http://vixra.org/abs/1805.0544
Zeolla, Gabriel Martin, Construction of the Golden Patterns http://vixra.org/abs/1803.0121
Zeolla, Gabriel Martin, Simple prime numbers per Golden Patterns http://vixra.org/abs/1803.0178
Zeolla, Gabriel Martin, Simple composite numbers by Golden Patterns http://vixra.org/abs/1803.0298
Zeolla, Gabriel Martin, Sum of Simple prime numbers http://vixra.org/abs/1803.0225
Zeolla, Gabriel Martin, Sum of Simple composite numbers by Golden Patterns http://vixra.org/abs/1803.0654
Zeolla, Gabriel Martin, Inverted Sum of the 7-Golden Pattern http://vixra.org/abs/1807.0055
Zeolla, Gabriel Martin, The product of prime numbers. http://vixra.org/abs/1804.0037

Professor Zeolla Gabriel Martin
Buenos Aires, Argentina
12/2018
gabrielzvirgo@hotmail.com