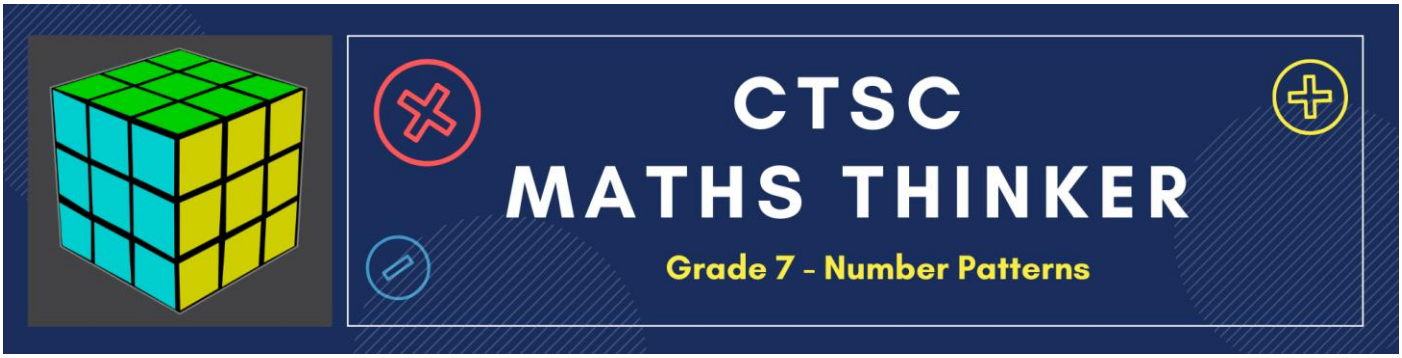

This week we will be exploring NUMBER PATTERNS with the Grade 7 learners. Scroll through the images for the questions and images linked to the questions.

QUESTIONS:

Question 1 – Complete the pattern

a. Write the first **4 terms** of a number pattern that **starts at 20** and has the rule **"take away 5" -** ____, ____, ____, ____

b. Write the first **4 terms** of a pattern where the rule is **"multiply by 2**" and the **3rd term is 12** - ____, ____, ____, ____

c. Write **4 terms** of a pattern that **increases** and has **42 as its 4th term** - ____, ____, ____

d. Write the rule for your pattern in (c)

Question 2 - Continue these patterns

a. 20, 15, ___, 5, ___, ___

b. 1, 3, 6, 10, ___, ___, ___

c. 4.8, 6.0, ___, ___, 9.6

$d.\frac{2}{8}, \frac{4}{8}$, ___, ___, $\frac{10}{8}$, ___

Question 3

3.1 Complete the square numbers - 1, 4, 9, ___, ___, ___, ___

3.2 Now find the difference between consecutive squares

- 1 to 4 =
- 4 to 9 =
- 9 to ___

3.3 What is the pattern rule of the above?

3.4 Complete the cube numbers - 1, 8, 27, ___, ___, ___, ___

3.5 Now find the difference between consecutive cubes

- 1 to 8 =
- 8 to 27 =
- 27 to ___

3.6 What is the pattern rule of the above?

Question 4

a. Complete the table below to represent the relationship between the number of blocks and the number of stack. (See Image)

b. Describe how the output values can be calculated.

MEMORANDUM

Question 1

a) 20, 15, 10, 5
b) 3, 6, 12, 24
c) 24, 30, 36, 42
d) Add 6 or multiply the input number with 6

Question 2

a) 20, 15, 10, 5, 0, -5
b) 1, 3, 6, 10, 15, 21, 28
c) 4.8, 6.0, 7.2, 8.4, 9.6
d) $\frac{2}{8}, \frac{4}{8}, \frac{6}{8}, \frac{8}{8}, \frac{10}{8}, \frac{12}{8}$

Question 3

3.1 1, 4, 9, 16, 25, 36, 49
3.2 1 to 4 = 3
4 to 9 = 5
9 to 16 = 7
16 to 25 = 9
25 to 36 = 11
36 to 49 = 13
3.3 The pattern rule is odd numbers
3.4 1, 8, 27, 64, 125, 216, 343
3.5 1 to 8 = 7
8 to 27 = 19
27 to 64 = 37
64 to 125 = 61
125 to 216 = 91
216 to 343 = 127
3.6 The pattern rule is adding multiples of 6

Question 4

Stack number	1	2	3	4	5	6	7	8
Number of blocks	1	8	27	64	125	216	343	512

The output values are calculated as follows:
1x1x1=1
2x2x2=8
3x3x3=27
4x4x4=64
5x5x5=125
6x6x6=216
7x7x7=343
8x8x8=512