CLIL for Grade 10 – Math

Name:_____ Section:_____

Topic: Sequence

Communication: Individual Activity 1

Directions: Write down the Chinese equivalent for each of the following terminologies while listening to your teacher's lecture.

Vocabulary	Chinese Terms
Sequence	
Term	
Arithmetic sequence	
Geometric sequence	
Common difference	
Common ratio	
General term	

Content: Class Activity 2

Directions: Write down the first nine terms of Fibonacci sequence below and watch a video about Fibonacci sequence. Type "Fibonacci Sequence in Nature" on YouTube if you wish to watch the video again.

Fibonacci sequence: _____.

Cognition: Group Activity 3

Directions: Group yourselves into four. Create the graphs and its rule. Draw the first five graphs on the poster papers. Color markers are also provided. Write down the first five terms of your sequence. Identify the general term of the sequence if possible.

Rule: _____

_____

_____

The first 5 terms of the sequence: _____

The general term of the sequence: _____

Communication: Group Activity 4

Directions: Present your graph in front of the class describing the rule you use, the first five terms of your sequence, and the general term of the sequence if possible.

Culture: Class Discussion

Directions: Read how the Fibonacci sequence is applied in real life.

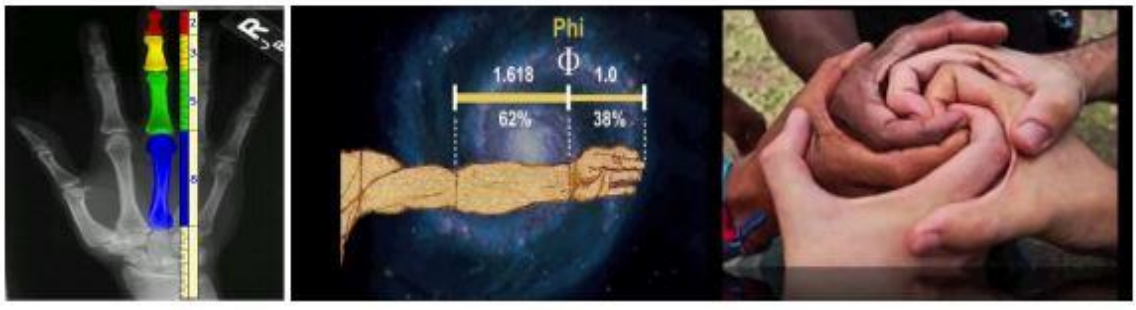
Fibonacci sequence of numbers and the associated "Golden Ratio" are manifested in nature and in certain works of art. We observe that many of the natural things follow the Fibonacci sequence. It appears in biological settings such as branching in trees, phyllotaxis (the arrangement of leaves on a stem), the fruit sprouts of a pineapple, the flowering of an artichoke, an uncurling fern and the arrangement of a pine cone's bracts etc. At present Fibonacci numbers plays very important role in coding theory. Fibonacci numbers in different forms are widely applied in constructing security coding. *(lifted from the paper of Sudipta Sinha, 2017)*

2.2 Fibonacci spiral

The Fibonacci numbers are found in the arrangement of seeds on flower heads (Internet access, 13). There are 55 spirals spiraling outwards and 34 spirals spiraling inwards in most daisy or sunflower blossoms (Internet access,14). Pinecones clearly show the Fibonacci spirals (Howard, 2004)

2.3 Organs of human body

Humans exhibit Fibonacci characteristics. Every human has two hands, each one of these has five fingers and each finger has three parts which are separated by two knuckles (Internet access, 7). All of these numbers fit into the sequence. Moreover the lengths of bones in a hand are in Fibonacci numbers.



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