

# GEOMETRY ACTIVITY



**Name :** Leonardo Fibonacci

**Born :** 1170

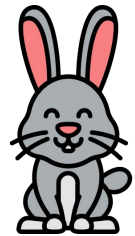
**Died :** 1250

**Occupation :** italian mathematician

**Place :** Pise



Reference : Dall'opera *I benefattori dell'umanità*;  
vol. VI, Firenze, Ducci, 1850



## The Fibonacci problem :

Each adult rabbit pair gives birth to a baby rabbit pair each month. Each baby couple becomes an adult after one month. Starting from a baby couple in January, **how many couples will there be in December ?**

Write your calculations here !

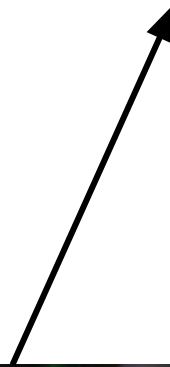
**Fibonacci sequence :** \_\_\_\_\_

Find the Fibonacci sequence in these objects.

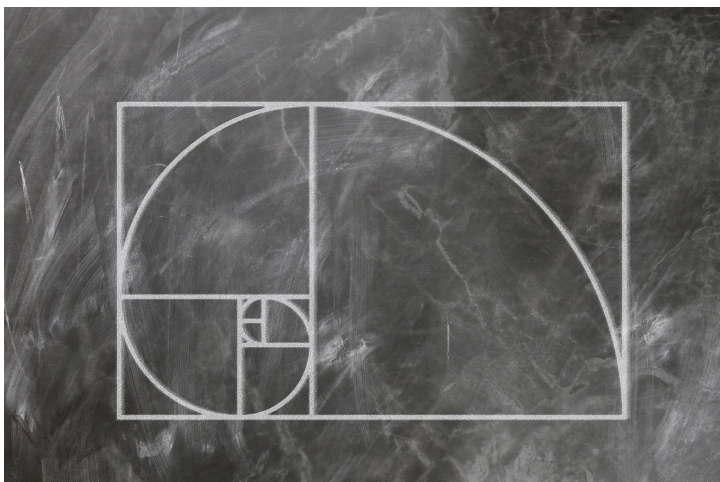




# FIBONACCI SPIRAL



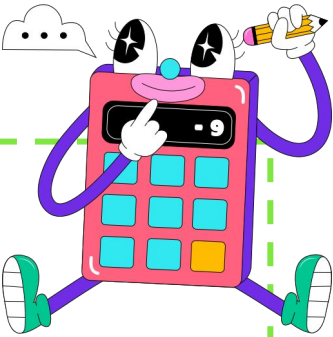
Draw a Fibonacci spiral and customize it.





**Your creation !**

Calculate the ratio between two consecutive Fibonacci numbers.

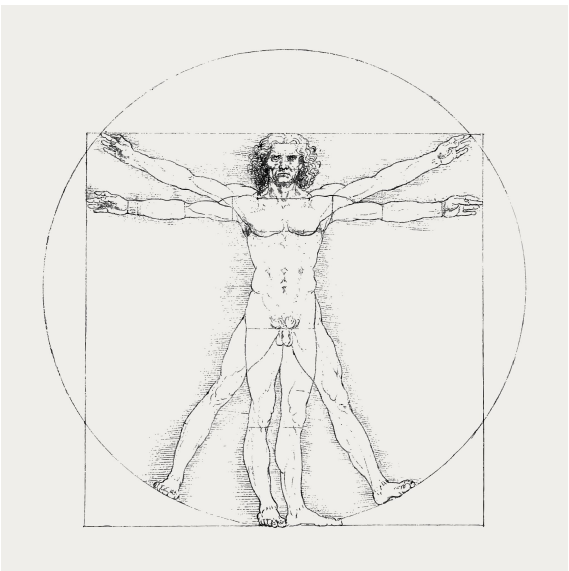


A large dashed green rectangular box intended for the user's answer.

what do you notice ? \_\_\_\_\_

Two horizontal lines for additional notes or answers.

This number is called \_\_\_\_\_



**Vitruvian man**  
Leonard De Vinci, 1492

## The Fibonacci problem.

Month	1st	2nd	3rd	4th	5th	6th	Total
1	1						1
2	1						1
3	1	1					2
4	1	2					3
5	1	3	1				5
6	1	4	3				8
7	1	5	6	1			13
8	1	6	10	4			21
9	1	7	15	10	1		34
10	1	8	21	20	5		55
11	1	9	28	35	15	1	89
12	1	10	36	56	35	6	144

There will be 144 couples in december

Fibonacci sequence : 1 1 2 3 5 8 13 21 34 55 89 144

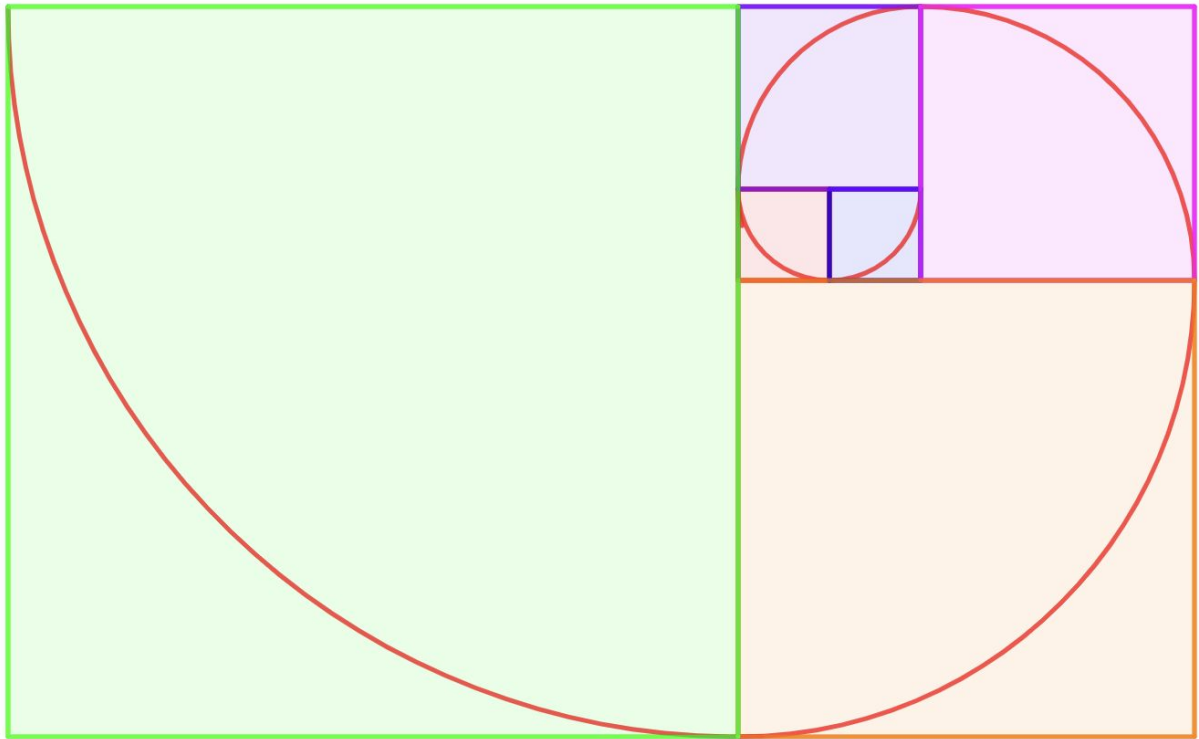
## Find the Fibonacci sequence in these objects.

→ There are 8 spirals in one direction and 13 in the other. 8 and 13 are numbers from the Fibonacci sequence.

→ There are 21 spirals in one direction and 34 in the other. 21 and 34 are numbers from the fibonacci sequence.

→ There are 13 petals and 13 is a number from the fibonacci sequence.

Fibonacci spiral.



Calculate the ratio between two consecutive Fibonacci numbers.

→  $21/13 = 51/34 = 144/89 = 1,6\dots$

we can observe that the ratio quickly converges towards 1.618...

This number is called gold number.

The Vitruvian man (Leonardo da Vinci) who defines the dimensions ideals of man, the ratio between the side of the square and the radius of the circle is the golden ratio.