

Fibonacci and the Golden Number!

The Fibonacci numbers are found all around us. Let's review them and their pattern. The numbers are:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89,.....

To find the series of Fibonacci numbers you

Besides occurring in nature, these numbers can give us a **GOLDEN** number! Let's find that **GOLDEN** number and see why it's so **GOLDEN!**

1. On the first line, enter the first eleven Fibonacci numbers. (Skip 0) It's started for you on the chart below.
2. Next divide each number by the number before it. See the first four examples on the second line if you need help.
3. Then write your answer on the third line.

| | | | | | | | | | | |
|---|------------|------------|------------|------------|---|--|--|--|--|--|
| 1 | 1 | 2 | 3 | 5 | 8 | | | | | |
| | $1 \div 1$ | $2 \div 1$ | $3 \div 2$ | $5 \div 3$ | | | | | | |
| | 1 | 2 | 1.5 | 1.666.. | | | | | | |

What happened? Did you start getting about the same answer? All the Fibonacci numbers eventually lead to an ever-going number of about 1.618. This is the **GOLDEN** number!

The **GOLDEN** number appears everywhere! Find a cloth tape measure and see how you measure up! Complete this chart that will help you to understand more about Fibonacci's GOLDEN number.

| Measure this | Length | Now measure this | Length | What is the ratio? |
|-------------------------------------------|--------|--------------------------------------|--------|--------------------|
| Floor to your navel | | Your height | | |
| Your elbow to your fingertips | | Your underarm to your fingertips | | |
| Your hairline to the bottom of your nose | | Your hairline to your chin | | |
| Your fingertip to your first knuckle | | Length of that finger | | |
| Your first knuckle to your second knuckle | | Your fingertip to your first knuckle | | |

What did you learn?

Let's see how this **GOLDEN** number is used in art –

Use your ruler to draw a rectangle in the space below. Make the width a unit of 1 and the length a unit of 1.618. You can do this in any ratio you want.

Many people believe that a rectangle with this ratio, 1:1.618, is the most eye-pleasing type of rectangle. Leonardo Da Vinci and other famous artists used this type of rectangle in their art work. Look at some prints of famous paintings. What does the artist want you to focus upon? See if you can tell how the **GOLDEN** number is used in art!