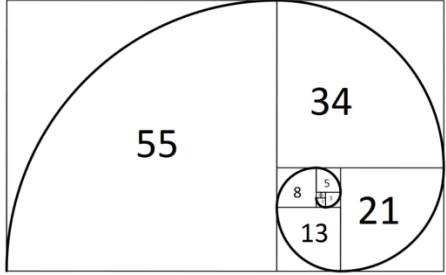


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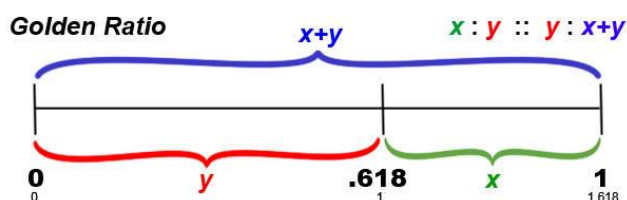
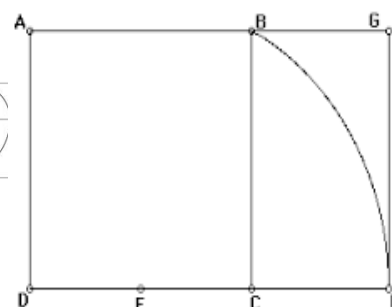
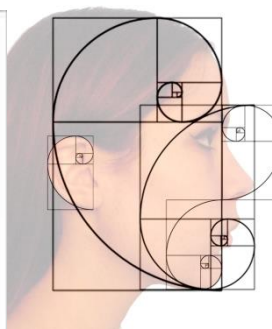
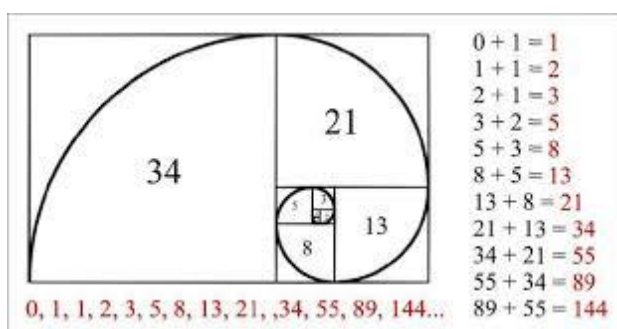
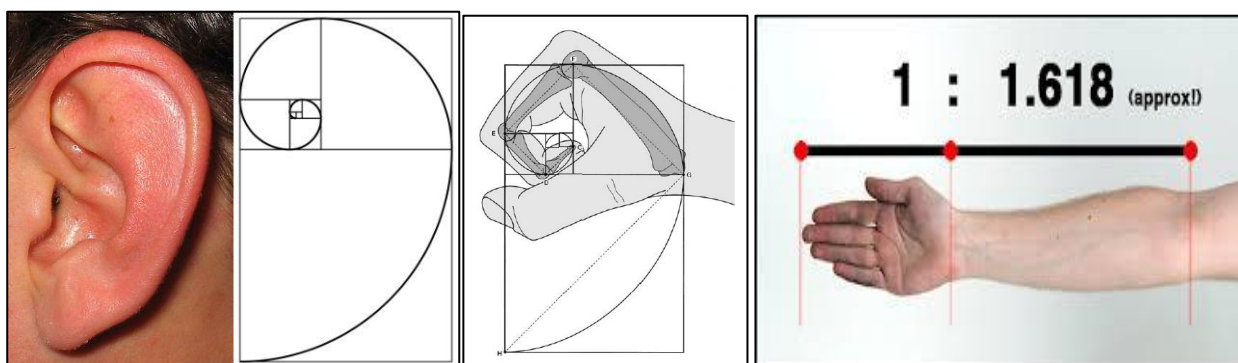
UNIDAD DIDÁCTICA INTEGRADA: NUMBERS Numbers and Human Body		1º ESO Bilingual
TOPIC: Golden Number.		
- ANLs: TIC, Maths, Biology and VAE. - VAE = Visual and audiovisual education. (Maths subject).		Timing: Three sessions (1 st –Introduction and explaining video, ruler's game). (2 nd – Drawing the golden spiral and get the golden rectangle). (3 rd – Publicity, artworks, TICs).
OBJECTIVES		
1. To learn how we can find numbers in our body. 2. To know how we can find the proportions in our body 3. To discover these proportions in nature, universe and art. 4. To work with drawing tools to get the golden spiral truly related with art and maths. 5. To find the golden number in different trademark logos (Apple, Bp, Toyota.....) 6. To use English vocabulary regarding to this topic.		
CONTENTS		TASK
<ul style="list-style-type: none"> Proportions (Maths). Fibonacci sequence. (Maths) Parts on the body (Biology). Squares and Rectangles (Maths & VAE). Spirals (VAE). Operations with fractions and roots. (Maths) Part of a plant, flowers, fruits, seeds (Biology). Publicity and Maths (Maths & VAE). Art and Maths (Maths & VAE). Architecture and Maths (Maths and VAE). 		<ul style="list-style-type: none"> Previous game. Check in your body where the golden number is. Try with your classmates. Use your 30cm ruler. Get the proportion based in golden number from a given line .(Maths) Draw a square with the set square and get the golden rectangle that comes up from it. Draw the golden spiral and compare it with our galaxy (Via Láctea).(VAE) Translate the previous operation into numbers and get the golden ratio. ($\frac{1+\sqrt{5}}{2} = \varphi = 1.618033 \dots$). Maths. Investigate who discovered the golden number, name, century and other discoveries (example: where do the current numbers come from 1,1,3,5,8,13,21....?, What is the Fibonacci sequence?). (Tic). Elaborate a collage with photos from nature where you can find the golden

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ratio (flowers, sea animals, plants, trees, publicity, logos, etc) (Biology and VAE)

ASSESSMENT CRITERIA

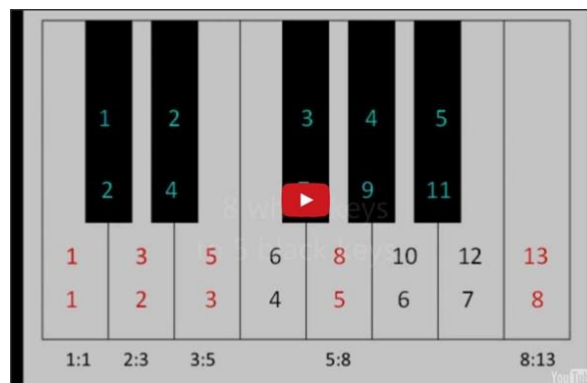
- Use set square and compass properly.
- Understand the golden proportion in art and nature. To identify the golden proportion.
- Correct operations with Fibonacci numbers.
- Correct operation with proportions.
- Participation in finding golden ratio in parents and classmates bodies.
- Find the golden ratio some musical composition.
- Identify name and place of certain famous artworks (Architecture, Sculpture and Painting).



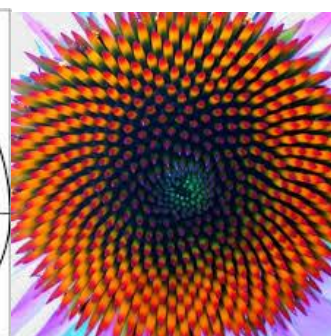
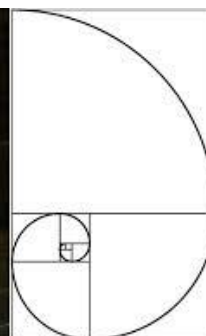
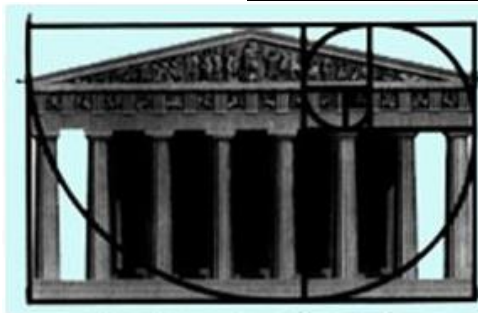
Fibonacci Sequence

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610...

$3 \times .618 \approx 2$	$13 \times .618 \approx 8$	$55 \times .618 \approx 34$
$5 \times .618 \approx 3$	$21 \times .618 \approx 13$	$89 \times .618 \approx 55$
$8 \times .618 \approx 5$	$34 \times .618 \approx 21$	$144 \times .618 \approx 89$

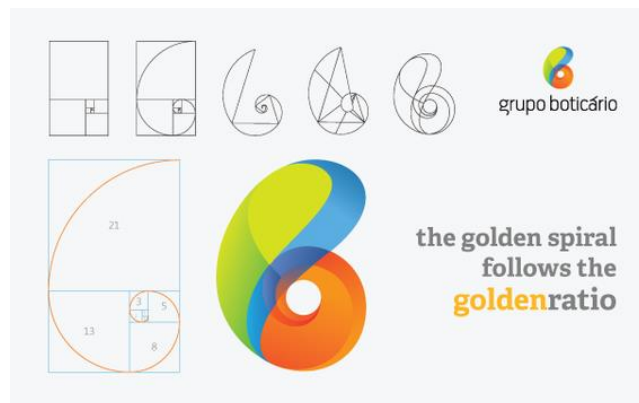
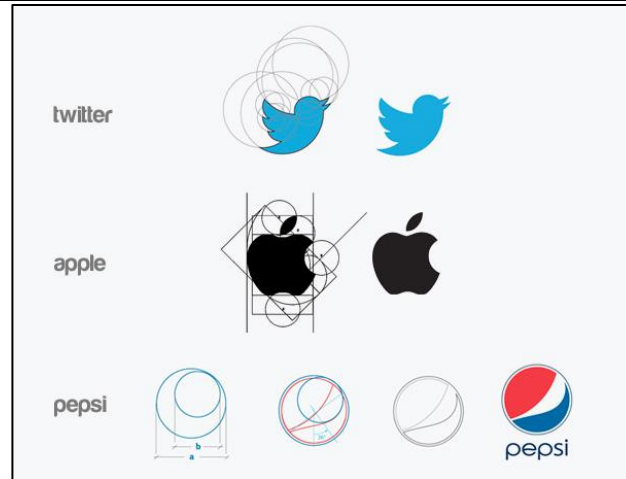


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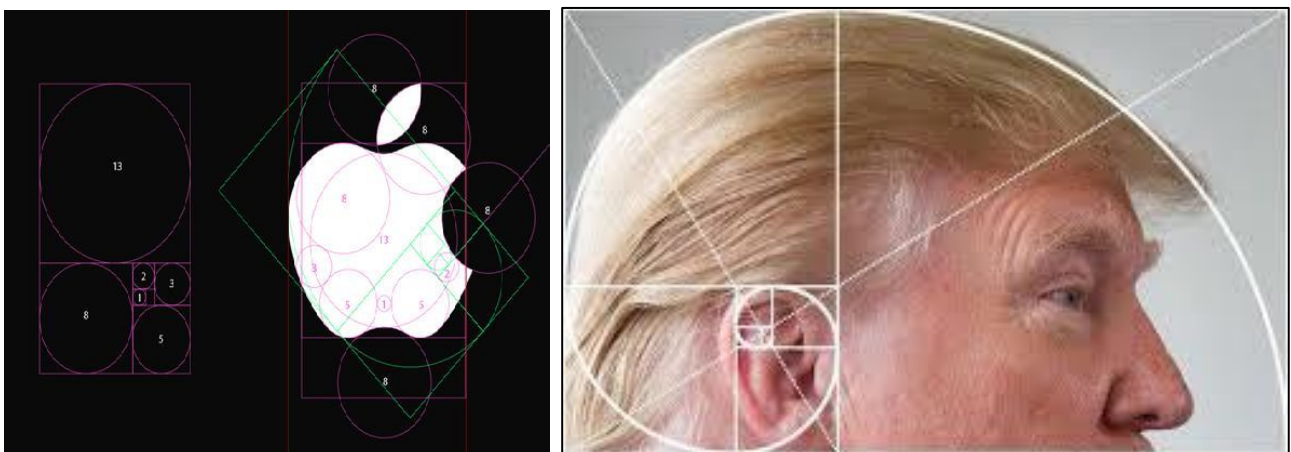


Publicity and logos:

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Curiosities:

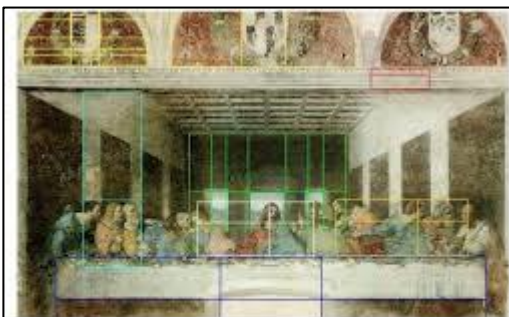
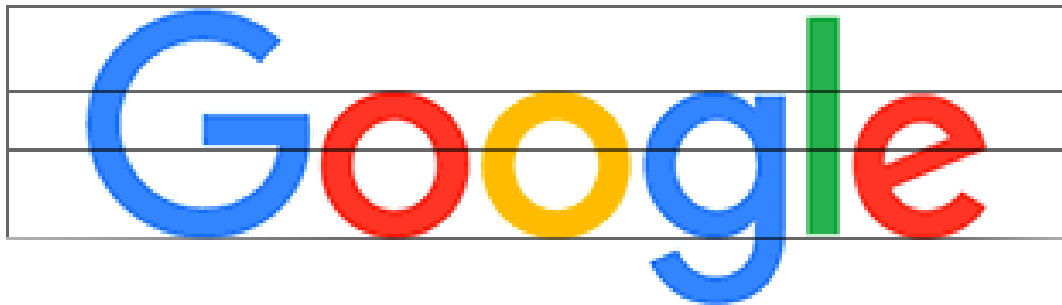
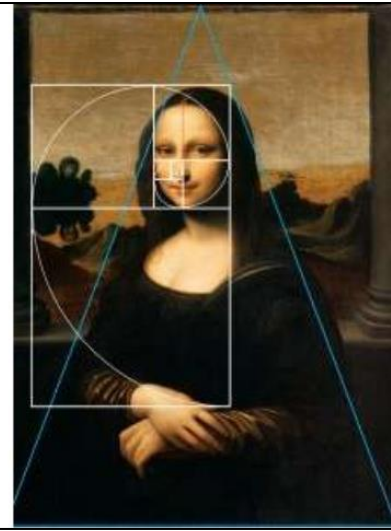


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MONALISA by Leonardo Da Vinci

- More myth than reality
- No claims by DaVinci himself
- However...
- The width of her face is very close to a golden ratio of the width of the canvas.
- Her eye is rather precisely aligned with the center of the canvas.
- Golden ratio lines from the center of the painting to the sides of the canvas align nicely with the width of her hair.
- Golden ratios in positioning of her head, the garment neck line and her arm.



The Golden Section was used extensively by Leonardo Da Vinci.
Note how all the key dimensions of the room, the table and ornamental shields in Da Vinci's "The Last Supper" were based on the Golden Ratio

