

THE GOLDEN RATIO IN FACES

INVESTIGATIVE QUESTION:

How many people in our grade have the golden ratio represented in their faces, and is there a difference between boys and girls?

HYPOTHESIS:

Our hypothesis is that the majority of students will have the length in proportion to width golden ratio on their faces.

ABOUT THE INVESTIGATION:

We digitally measured the 2021 school photos of each person in our grade (67 Students) to see if the ratio of the width of their face (at the widest point) to the length of their face (at the tallest point) was equivalent to the golden ratio (1:1.618). To figure this out, we inserted a line and digitally moved it so that it was the width of the face, then we found the length of said line and multiplied it by 1:1.618 to see if it was the length of their face. Due to human error and the slight inaccuracies (that come from rounding or large amounts of hair, tilted heads etc.) of our method, we allowed for a 5 millimeter difference or where we know their head ends and the rest is just hair, so that if the person's face's length or width is slightly too long or short, we still count it again due to inaccuracies. However, if a subject's face does not fit into this line, we adjusted it so it was the same length as their face. Then we divided that number by the width to get the ratio and we usually had to round it to 3 decimal places. We then put that data in graphs and calculated the percentage of people with each facial ratio.

CONCLUSION:

Our hypothesis was correct, as the majority of students (60%) had the golden ratio in their faces. Our data has shown that there is a lot more diversity between face ratios in females than males. There was also a significantly higher percentage of males that had the golden ratio represented in their faces rather than females. However in both males and females, there was still a large amount of people who have the golden ratio represented in their faces, albeit the fact that the females with the golden ratio in their faces was just under the majority.

The golden ratio is a mathematical concept that is commonly seen in nature. When used in a design, it creates images that are aesthetically pleasing. The concept of golden ratios in faces is a proportional method to calculate mathematical beauty.

