Please use our materials!

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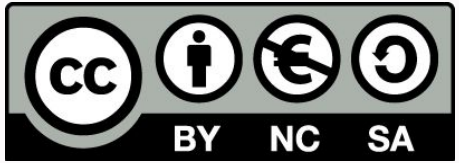
We also humbly request that you email sarah.adams@olin.edu if you use these materials, as we are tracking their impact and how far they travel!



Math in Art and Architecture

“Grab the Monet and let’s Gogh”

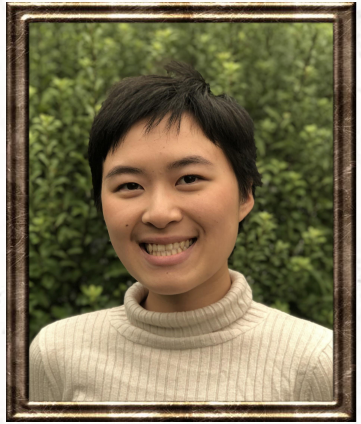
— Art thieves in a bank robbery

Hello again!

Riley Zito
they/them
& he/him

Brent Usui
he/him

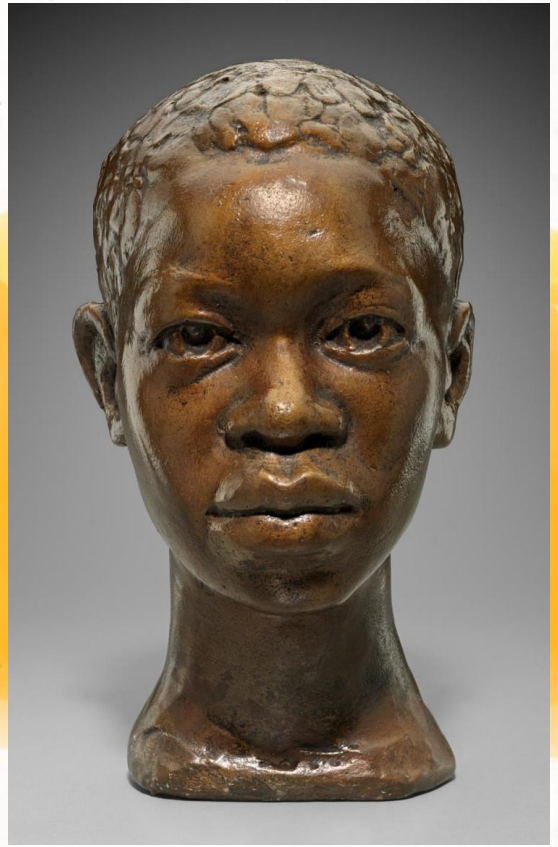
Mason Grabowski
he/him



Annie Tor
she/her

Before we get started...

- Make sure you have a sheet of paper, a ruler, scissors, and a pencil on hand!
  - If you have tracing paper, you can use that instead of regular paper (but either is fine!)
- Keep your microphone muted unless you're speaking
- If you get stuck, get lost, or have any questions, feel free to type in the chat or PM any of us (Riley, Brent, Mason, Annie)

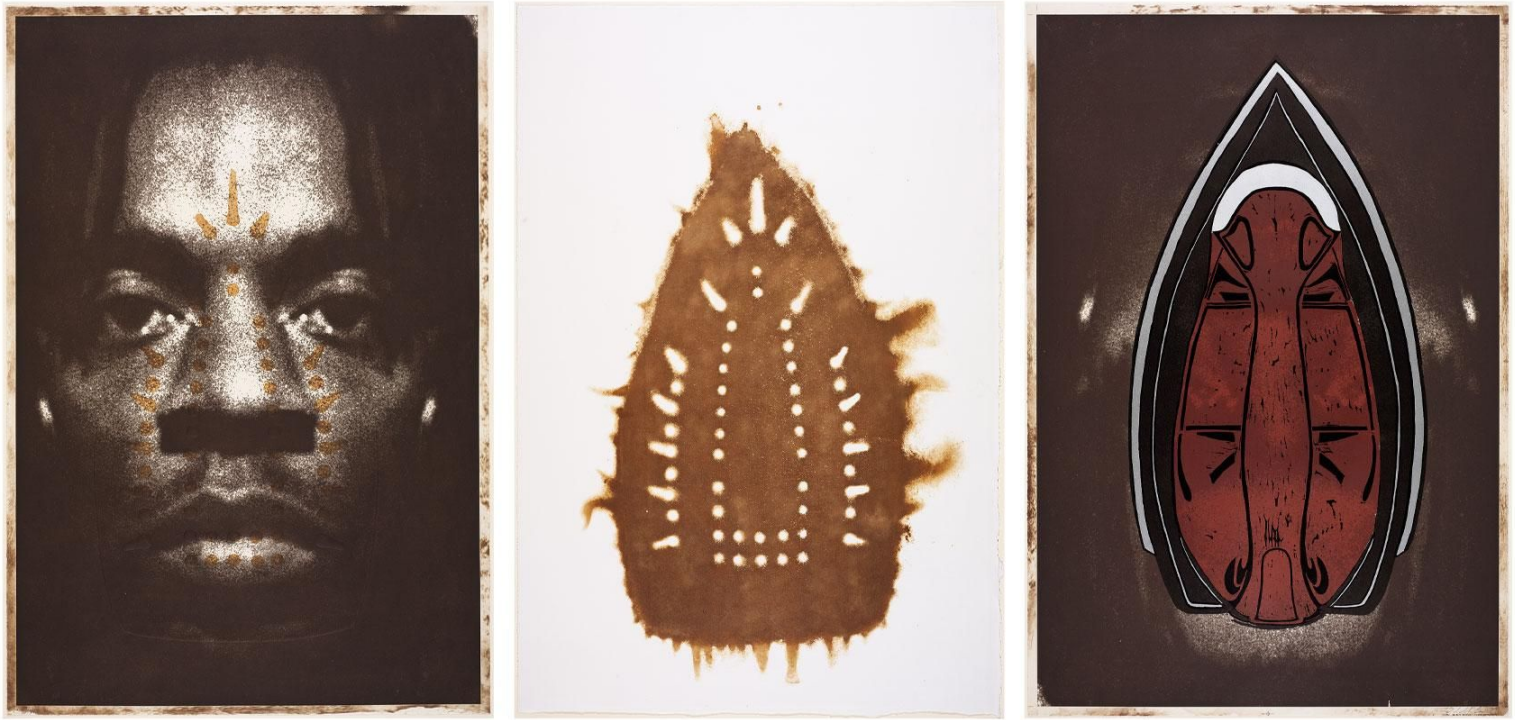


Portrait Head of John Henry (1949), Augusta Savage, (c/o Museum of Fine Arts Boston)

Mural (1943), Jackson Pollock (c/o Museum of Fine Arts Boston)

Head of Aphrodite (“the Bartlett Head”, c. 300 BC), Unknown Artist (c/o Museum of Fine Arts Boston

Four Bird-and-Flower Prints (c. 1830s), Utagawa Hiroshige I (c/o Museum of Fine Arts Boston)



Man Spirit Mask (1991), Willie Cole (c/o Museum of Fine Arts Boston)

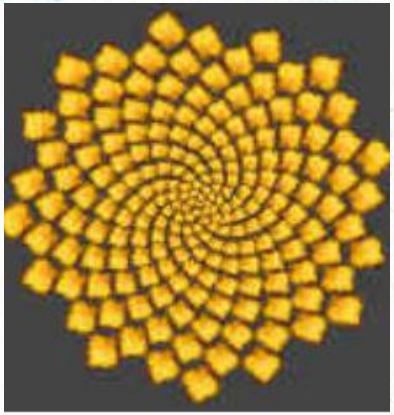
Weather vane (1772), Thomas Drowne (c/o Museum of Fine Arts Boston)

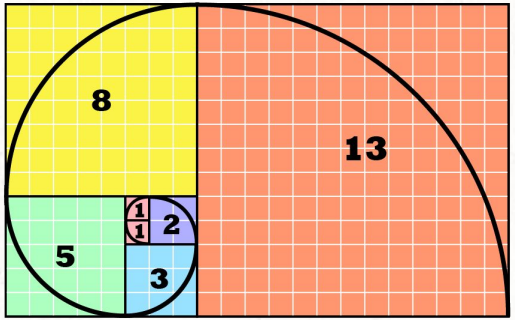
What makes something visually beautiful?

Type your thoughts in the chat!

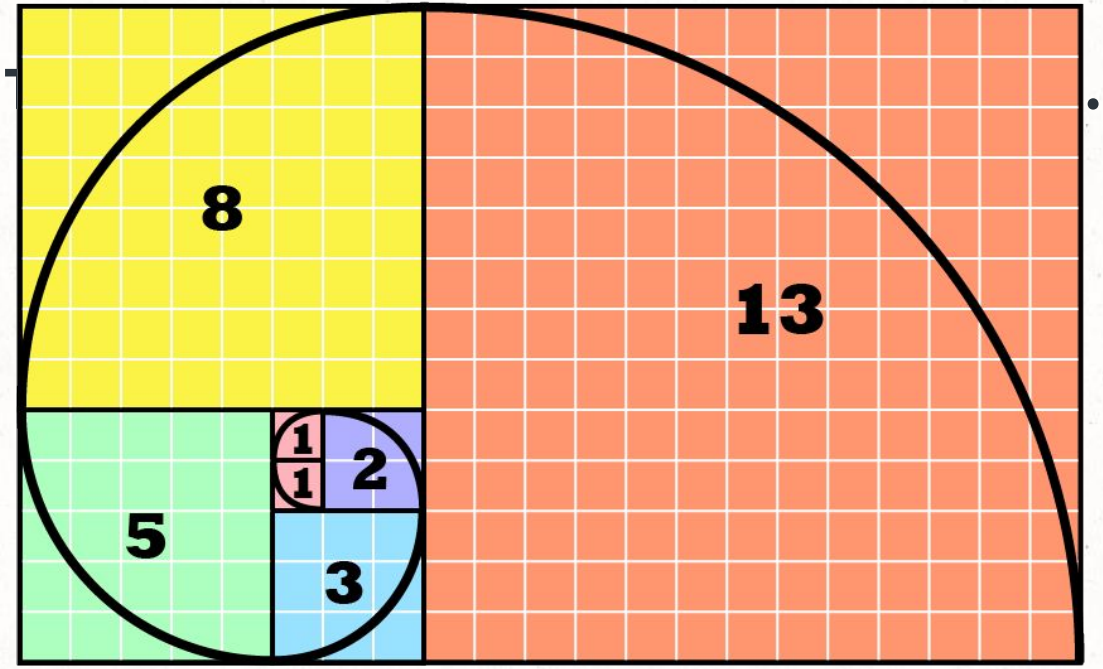
Review of Last Session

- We learned about the **golden ratio (~1.618)**, which is a special number that can't be generalized to any regular fraction
- The golden ratio is closely related to patterns in nature
- We can use the **Fibonacci sequence (0, 1, 1, 2, 3, 5, 8, 13...)** to represent the golden ratio





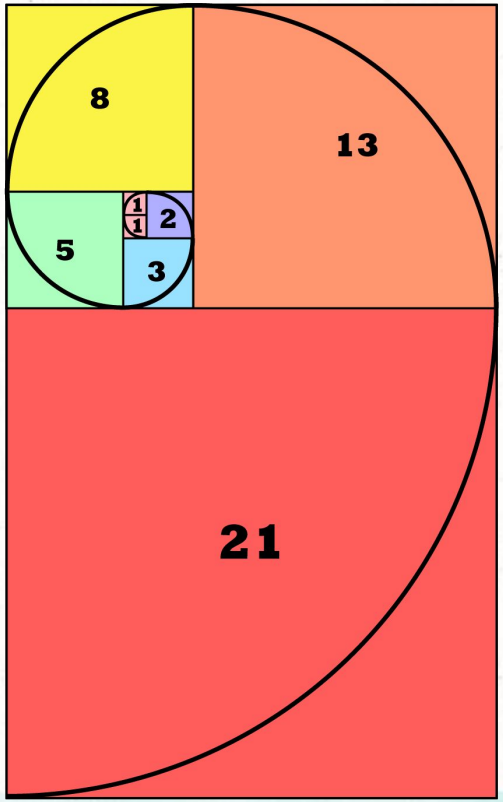
Review of Last Session



...

Review of Last Session

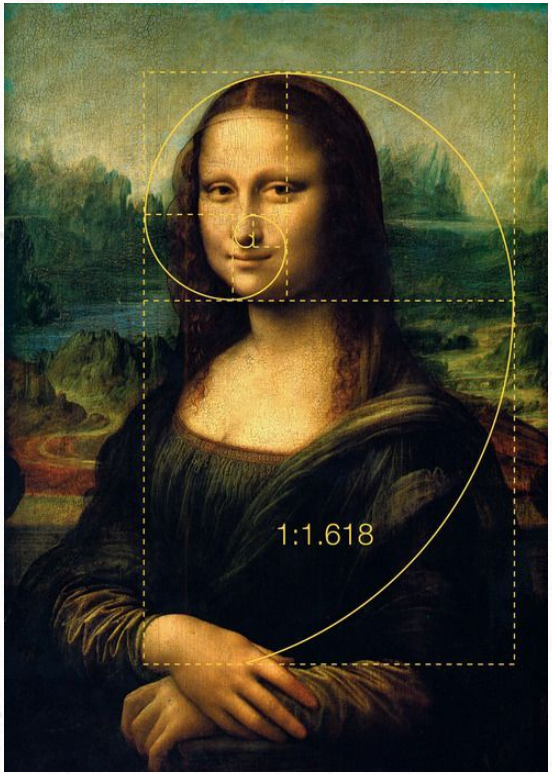
If I added another segment to this spiral, what would the side length of this square be?

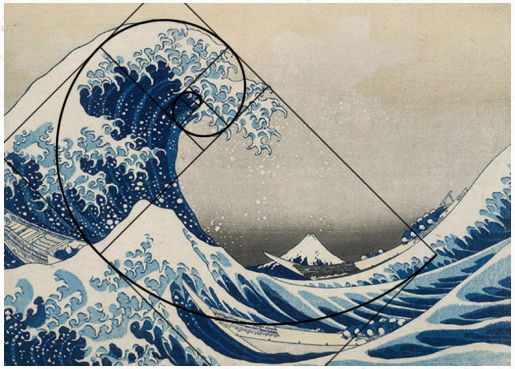


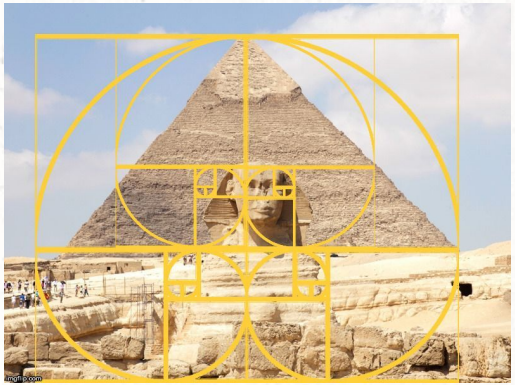
Hint: How would you find the next term in the Fibonacci sequence? (0, 1, 1, 2, 3, 5, 8, 13…)

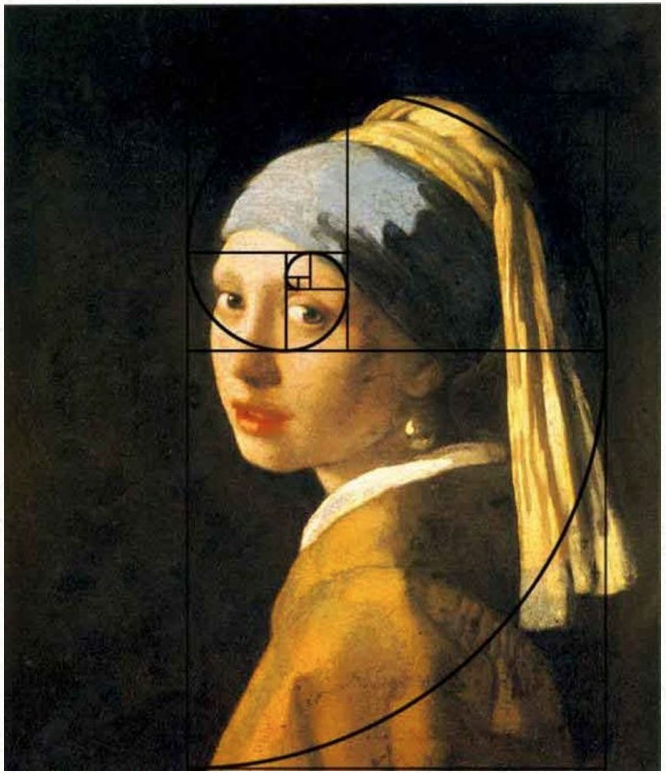
This spiral shows up a lot in nature...

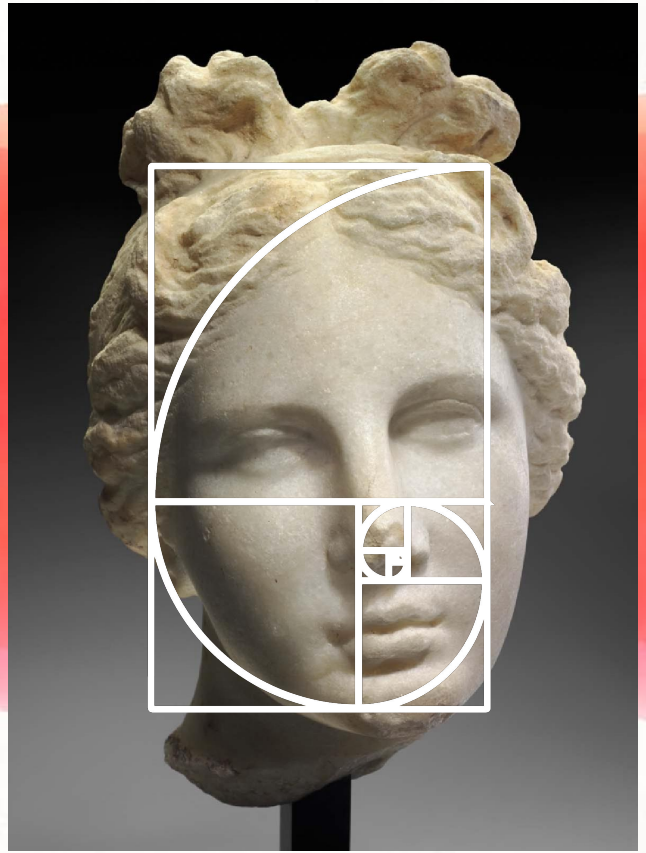
...and it shows up in art too!



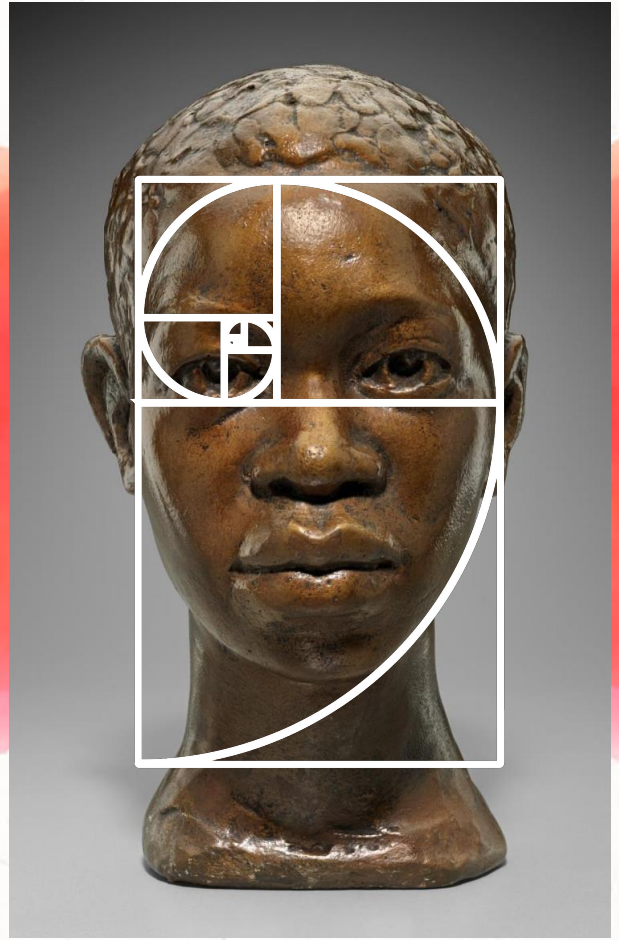


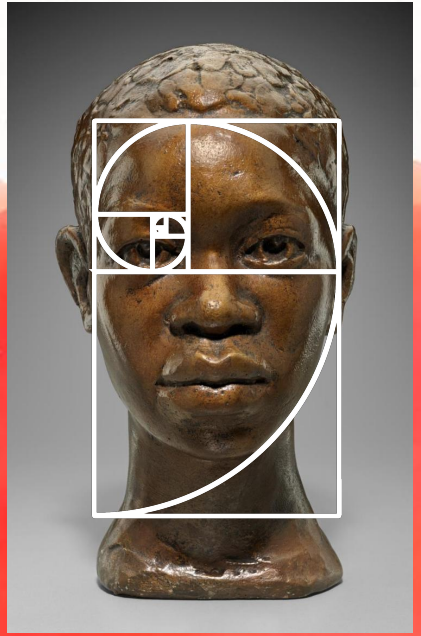


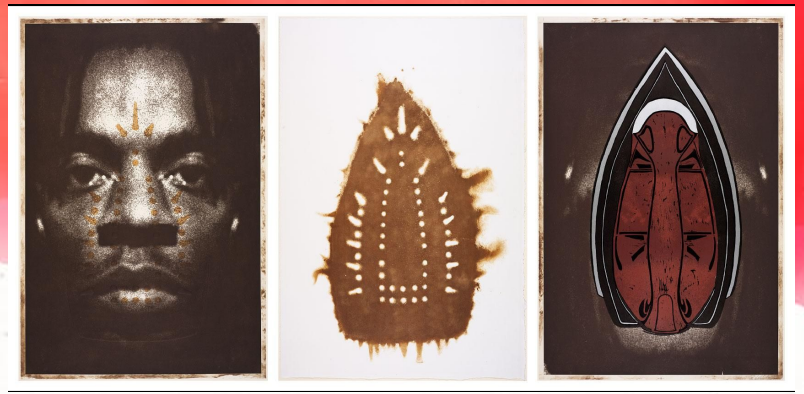




Mask (Deangle), Artist Unidentified (c/o Museum of Fine Arts Boston







Let’s try it ourselves!

Fast Fun Fact!

It’s hypothesized that the reason humans find the golden spiral pleasing is because it’s faster for visual scanning. **The spiral is more efficient for our brains, which translates into pleasure & the perception of beauty!**

https://www.theguardian.com/artanddesign/2009/dec/28/golden-ratio-us-academic

Let’s draw a spiral!

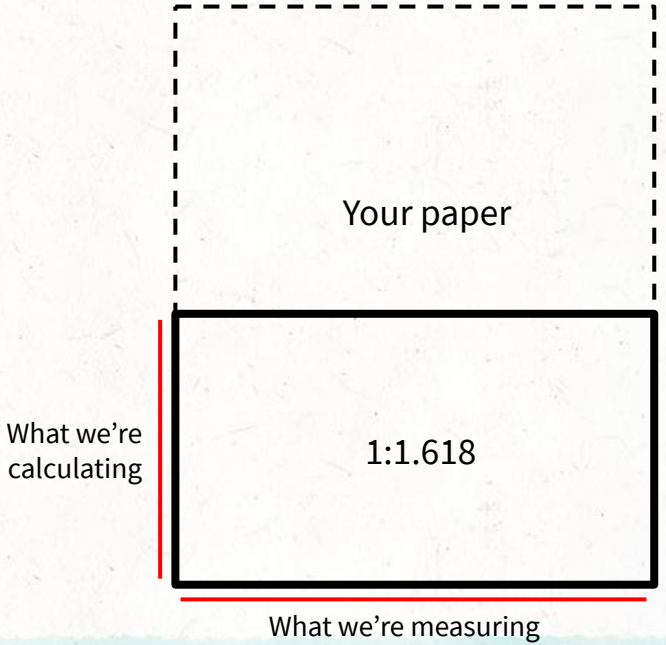
Grab your paper (tracing paper if you have it), your ruler, your scissors, and your pencil!

1. Measure the short side of your paper

If you're using a standard sheet of printer paper, the short side should be around 8.5 inches long.

This side of your paper will be the width of our golden rectangle.

Using the measurement you just found and the golden ratio (approximately 1:1.618), what should the height of your rectangle be?



2. Using your scissors, cut a rectangle with the height you just calculated

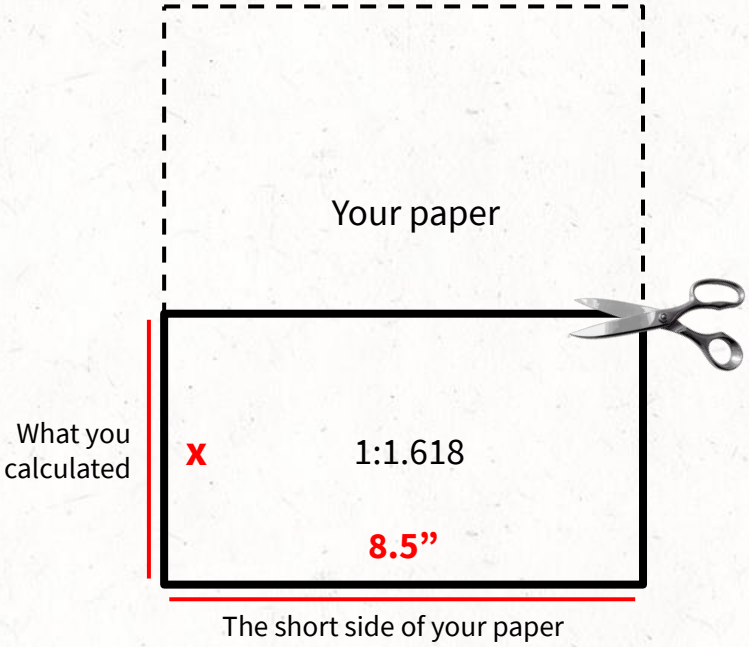
Example:
- 8.5” x 11.5” sheet of paper
(use short side 8.5”)

$$1 : 1.1618$$

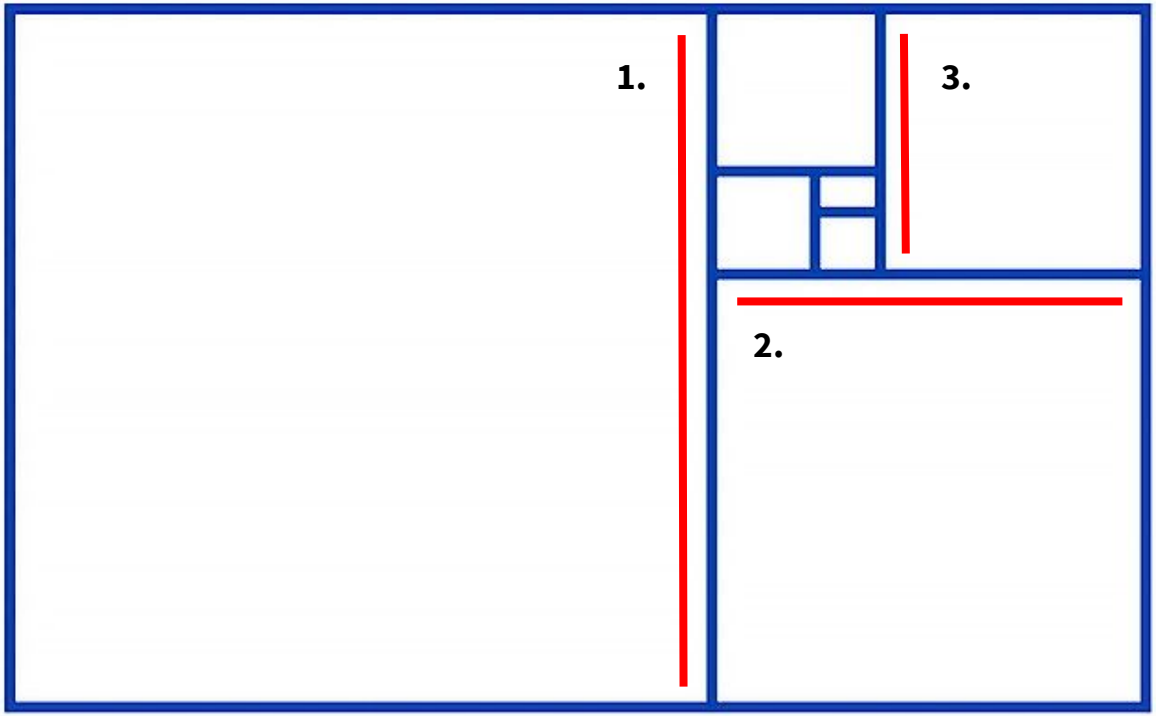
$$x \ : \ 8.5”$$

$$x = 8.5/1.1618$$

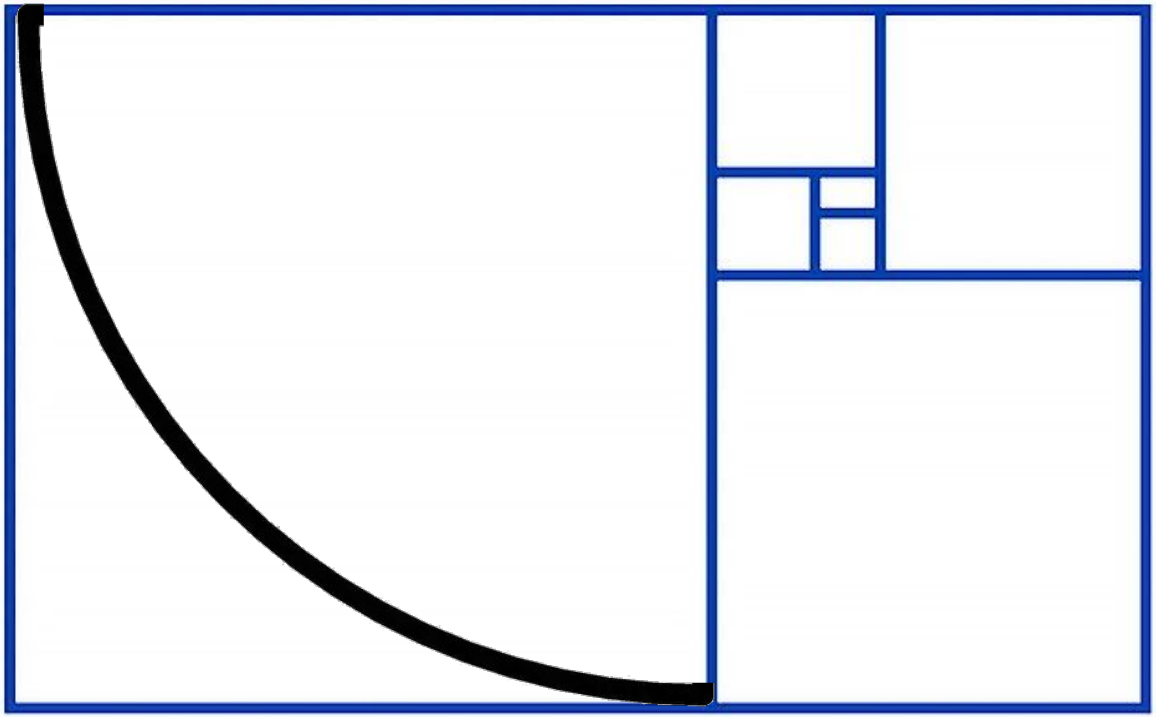
$$x \approx 5.25”$$



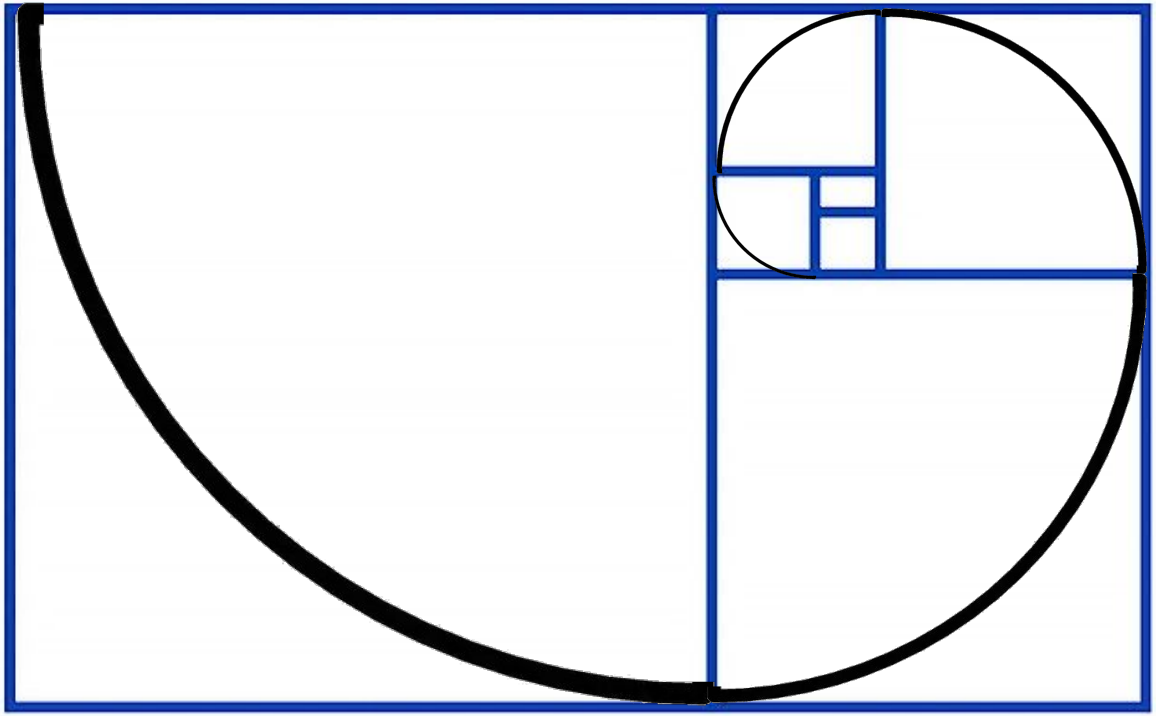
3. Measure the new short side of your rectangle, then use that side length to draw a square on your rectangle (and repeat!)



4. Draw a curve running from corner to corner of each of your squares



5. And you should have a golden rectangle with a spiral running through!

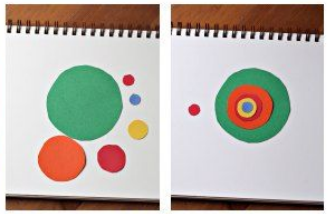


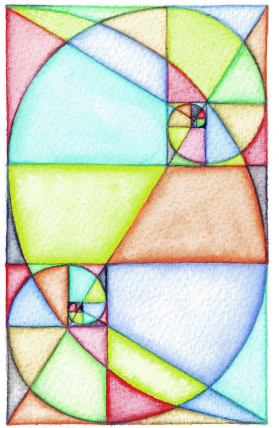
Let’s make some art!

Surf the web or look through the photos on your phone. Do you see the golden spiral in any images? Add them to our slide deck!

OR

Make some golden spiral-inspired art at your desk! Here are some ideas to get you started:

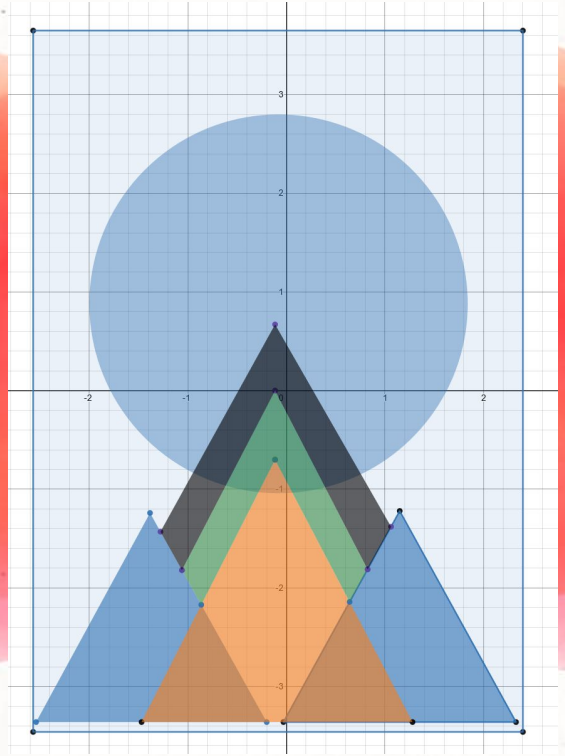




How did today go for you?

Type your thoughts in the chat!

Sneak peek of next week’s session!


3
2
1
-2
-1
1
2
-1
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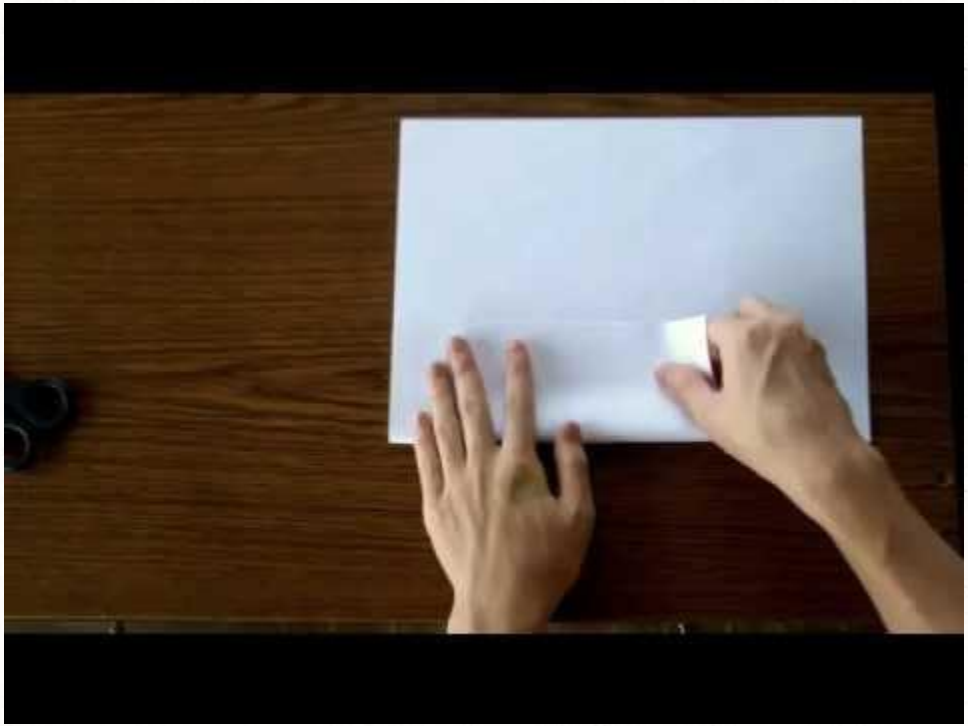
1. Make a square out of your sheet of paper



2. Fold your square into a golden rectangle