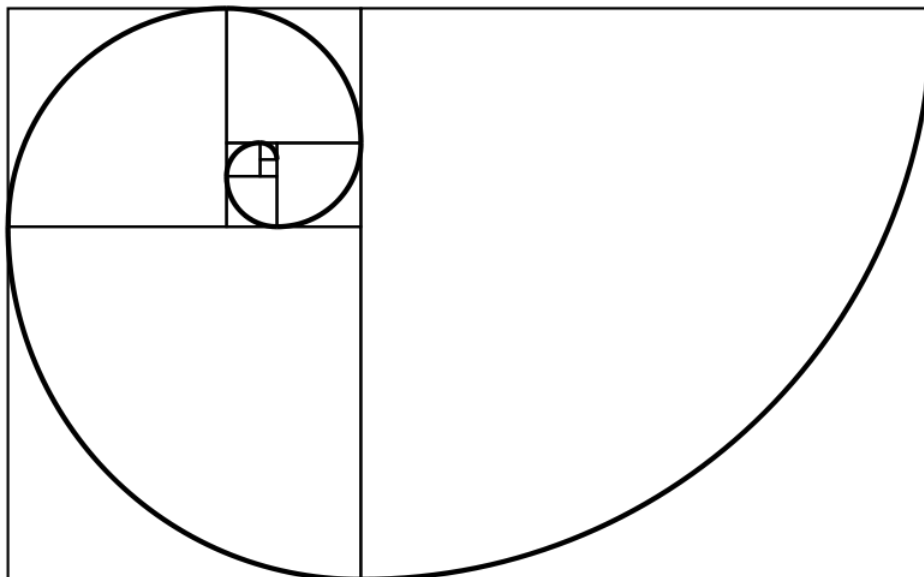**Names:** _____ _____ **Date:** _____

Brainstorming Squares! Answers

Take a good look at the picture below. How, *mathematically*, do all those squares relate to one another? Sure, they make a beautiful, organized picture, but there is much more to it than that!

You and your partner have five minutes to make measurements of those squares and try to find out how they relate to each other. For example, can you add the lengths of two squares to equal the length of another square? Or can you subtract the length of one square from another square and have that equal the length of a third square? Find out!

Mathematical observation #1:

Sample answer: We found one square with a length of 1 cm, another square with a length of 2cm, and a third square with a length of 3cm.

1cm + 2cm = 3cm

Mathematical observation #2:

Sample answer: We found another square with a side of 5cm.

5cm – 3cm = 2cm

Mathematical observation #3:

Sample answer: For these same squares, we calculated their areas.

5cm x 5cm = 25cm
3cm x 3cm = 9cm
2cm x 2cm = 4cm
1cm x 1cm = 1cm

We noticed that, unlike the lengths, the areas don't relate to each other with simple addition and subtraction.

Discovering Phi: The Golden Ratio activity — Brainstorming Squares Answers