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SHAPES, NUMBERS, PATTERNS, AND THE DIVINE PROPORTION IN GOD'S CREATION

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In God's creation, there exists a "Divine Proportion" that is exhibited in a multitude of shapes, numbers, and patterns whose relationship can only be the result of the omnipotent, good, and all-wise God of Scripture. This Divine Proportion—existing in the smallest to the largest parts, in living and also in non-living things—reveals the awesome handiwork of God and His interest in beauty, function, and order.

I will first begin with shapes, then discuss how a numbering pattern and a ratio (the Divine Proportion) are an inherent part of these shapes and patterns and are ubiquitous throughout creation.

Let's begin with a shape with which we are all familiar. It is the spiral commonly seen in shells. By taking a careful look at that spiral (the chambered nautilus is probably the clearest example) you will observe that as it gets larger, it retains its identical form. Since the body of the organism grows in the path of a spiral that is equiangular and logarithmic, its form never changes. The beauty of this form is commonly called the "golden spiral."

This spiral is visible in things as diverse as: hurricanes, spiral seeds, the cochlea of the human ear, ram's horn, sea-horse tail, growing fern leaves, DNA molecule, waves breaking on the beach, tornados, galaxies, the tail of a comet as it winds around the sun, whirlpools, seed patterns of sunflowers, daisies, dandelions, and in the construction of the ears of most mammals.

This spiral follows a precise mathematical pattern. We will first look at this spiral in sunflowers. By looking carefully at a sunflower you will observe two sets of spirals (rows of seeds or florets) spiraling in opposite directions. When these spiral rows are counted in each direction, you will discover that in the overwhelming majority of the cases that their numbers, depending upon the size of the flower, will be of the following ratio:

if small, 34 and 55; if medium 55 and 89; if large 89 and 144

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These numbers are part of the Fibonacci numbering sequence, a pattern discovered around A.D. 1200 by Leonardo Pisa (historically known as Fibonacci). *Each succeeding number is the sum of the two preceding numbers*. The sequence of these numbers is 1,2,3,5,8,13,21,34,55,89,144,233, ad infinitum. This numbering pattern reveals itself in various ways throughout all of nature, as we shall see.

When the smaller number of this pattern is divided into the larger number adjacent to it, the ratio will be approximately 1.618; if the larger one adjacent to it divides the smaller number, the ratio is very close to 0.618. This ratio is the most efficient of similar series of numbers.

Beauty

Why did Phideas, the Greek sculptor, and others in ancient Greece and Egypt often use this ratio in designing many of their works of art? Because this ratio has been found to be remarkably pleasing to the human eye, it produces what is called a Golden Rectangle. If the short side of the rectangle is 1, the long side will be 1.618. This rectangular shape was close to the pattern used in the designing of the Parthenon of Greece and for many of their numerous pictures, vases, doorways, windowns, statues, etc., and even for certain features of the Great Pyramid of Egypt. The United Nations building is a golden rectangle. Many of the things you use are (approximately) patterned after the golden rectangle—credit cards, playing cards, postcards, light switch plates, writing pads, 3-by-5 and 5-by-8 cards, etc.[1]

Artists such as Leonardo da Vinci, Van Gogh, Vermeer, Sargent, Monet, Whistler, Renoir, and others employed the golden proportion in many of their works. They would "take a blank easel and divide it into areas based on the golden proportions to determine the placement of horizons, trees, and so on."[2] Why the golden proportion? Art forms can be either of static or dynamic symmetry. In static symmetry the lines have definite measurements whereas in dynamic symmetry it is the proportioning of the areas that is given emphasis. It implies "growth, power, movement. It gives animation and *life* to an artist's work . . . rather than the effect of stillness and quiet"[3] of static symmetry. This is the appeal of the golden proportion.

Another area of great interest is the occurrence of Fibonacci numbers in the spiral arrangement of leaves around a plant's stem (called phyllotaxis). This spiral pattern is observed by viewing the stem from directly above, and noting the arc of the stem form one leaf base to the next, and the fraction of the stem circumference which is inscribed. In each case the numbers are Fibonacci numbers. Examples: In an elm the arc is 1/2 the circumference; in beech and hazel, 1/3; apricot, oak, 2/5; in pear and poplar, 3/8; in almond and pussy willow, 5/13; and in some pines either 5/21 or 13/34. Why did God arrange them this way? This pattern assures that each leaf will receive its maximum exposure to sunlight and air without shading or crowding other leaves.

Not only do we discover this pattern in leaf arrangements, but it is also commonly found in the arrangement of many flower petals. Examples: a lily has 3 petals, yellow violet 5, delphinium 8, mayweed 13, aster 21, pyrethrum 34, helenium 55, and michaelmas daisy 89. With such a great variety of spiral ratios in leaf and petal arrangement, no one has any reason to get bored with God's creation.

When we realize that the information to produce these spirals and numbers in living things is stored in the DNA, should we then be surprised to find that the DNA molecule is 21 angstroms in width and the length of one full turn in its spiral is 34 angstroms, both Fibonacci numbers? The DNA molecule is literally one long stack of golden rectangles.[4]

Let's look into the area of very small and very large things. In the world of atoms there are four fundamental asymmetries (structure of atomic nuclei, distribution of fission fragments, distribution of numbers of isotopes, and the distribution of emitted particles), and it is significant that "the numerical values of all of these asymmetries are equal approximately to the 'golden ratio,' and that the number forming these values are sometimes Fibonacci or 'near' Fibonacci numbers."[5] In changing states of a quantity of hydrogen atoms, as the atoms gain and lose radiant energy at succeeding energy levels, the changing proportion of the histories of the atomic electrons form Fibonacci numbers.[6]

In the area of very large phenomena when the time period of each planet's revolution around the sun is compared in round numbers to the one adjacent to it, their fractions are Fibonacci numbers! Beginning with Neptune[7] and moving inward toward the sun, the ratios are 1/2, 1/3, 2/5, 3/8, 5/13, 8/21, 13/34. These are the same as the spiral arrangement of leaves on plants!

Revolution of the planets in days and their correlation to Fibonacci numbers and spiral arrangement of leaves on plants[8]

	Observed	(theoretical)		Ratio		Plants
(Pluto)	90,000			(2:3 Neptune)		—
Neptune	60,193	62,000				—
Uranus	30,688	31,000		1:2		Elm
Saturn	10,760	10,333		1:3		Beech
Jupiter	4,332	4,133		2:5		Apricot
Asteroids	1200-2000	1,550		3:8		Pear
Mars	687	596		5:13		Almond
Earth	**365**	**366**	**8/13**		**8:21**	—
Venus	**225**	**277**	**13/21**			Pine
Mercury	88	87		13:34		Pine

There are creationists who have theorized that some cosmic force, probably in relation to the day of Noah's flood, altered the solar system, especially from Venus to the asteroid belt. This may account for the only significant theoretical adjustments in the chart: Mars (687 to 596), and Venus (225 to 277); the rest are very close to reality. Even with these two adjustments, the correlation of the Fibonacci pattern to the periodic times of the planets is far more than just a chance arrangement. It is one more example of God's marvelous mathematical arrangement of His creation. The fact that it is not perfect reveals that although Adam's sin affected the whole creation (Romans 8:22), yet God in His goodness has not allowed sin to overcome all the marks of His great handiwork (Psalm 19:1).

A most interesting divergence in the chart is that of the Earth. As the next planet in the series after Mars, its number should be 8:21, but it isn't. This number "skips" over Earth and connects to Venus. Even with this divergence we find that the Earth's period compared to Mars and Venus are Fibonacci numbers (8/13, 13/21). It is my

opinion that this anomaly is evidence of God's showing the uniqueness of planet Earth in relationship to the whole cosmos. It also accomplishes another fact, for this "anomaly" shatters the big bang and nebular hypothesis, for if all the planets formed from a whirling cloud of dust and atoms, this feature would not be present. To think that the times of revolution of the planets around the sun correlates with the arrangement of leaves around stems on plants is also an amazing phenomena.

These shapes, numbers, spirals, and the divine proportion are ubiquitous in their presence throughout all of creation. They are found in living and nonliving phenomena. Their symmetry, beauty, and mathematical preciseness are evident in every aspect of nature. Although absolute perfection is not found in all of these (due to the effects of Adam' sin), their very presence virtually everywhere and in everything argues against their having occurred by blind chance or evolutionary processes. The only rational conclusion is that the Creator of the universe is a personal, intelligent Being, who created these things as a visible fingerprint of His invisible, yet personal existence. This great, wise, powerful, creative, and sovereign God of creation is the One revealed in the Bible, of whom it can be said, "Great things doeth He, which we cannot comprehend" (Job 37:5). He is worthy of worship. And what is His name? The Lord Jesus Christ. "Thou art worthy, O Lord, to receive glory and honour and power: for thou hast created all things, and for thy pleasure they are and were created" (Revelation 4:11).

References

1. Trudi Hammel Garland, *Fascinating Fibonaccis*, Dale Seymour Publications, 1987, p. 19. Available: www.bbhomeschoolcatalog.com or 800/260-5461.
2. Ibid., pp. 34, 36.
3. Garth E. Runion, *The Golden Section,* Dale Seymour Publications, Palo Alto, CA. 1990, pp. 84–85.
4. Marl Wahl, *A Mathematical Mystery Tour,* Zephry Press, Tucson, AZ. 1988, p. 128.
5. J. Wlodarski, "The Golden Ratio and the Fibonacci Numbers in the World of Atoms," *Fibonacci Quarterly*, December 1963, p. 61.
6. H. E. Huntley, "Fibonacci and the Atom," *Fibonacci Quarterly*, December 1969, pp. 523–524.
7. There is still controversy as to whether Pluto is a real planet. Whether or not it is, its distance from Neptune is still a Fibonacci ratio, even if in the opposite direction.
8. Marcius Willson, *The Fourth Reader of the School and Family,* Harper & Brothers, Publishers, New York, 1860, p. 216.