

Marathwada Shikshan Prasarak Mandal's
Vinayakrao Patil Mahavidyalaya, Vaijapur

STAFF ACADEMY

organised Mr. A.D. Godse's Lecture on "Golden Ratio in Nature".

27th August, 2016

REPORT

Staff Academy organised a lecture of Mr. A.D. Godse, Head of Mathematics Department, on Golden Ratio in Nature on Saturday, 27th August, 2016 in the Audio-Visual classroom. All the faculties were present at this knowledge sharing session.

Prof. A. D. Godse began his lecture with an introduction about the Golden ratio. The golden ratio is sometimes called the "divine proportion," because of its frequency in the natural world. He highlighted the existence of the golden ratio in nature. In his lecture he explained the Fibonacci sequence and how it's related to the golden ratio and silver ratio. He also threw light on the applications of the Fibonacci sequence and the existence of the golden ratio in nature. The golden ratio can be seen in the shapes of spiral galaxies, hurricanes, snail shells, the distribution of flower petals and even in the proportions of the human body. It is also used by painters, sewers, photographers and other artists in their creative projects. Its ubiquity and astounding functionality in nature suggests its importance as a fundamental characteristic of the Universe.

The number of petals in a flower consistently follows the Fibonacci sequence. Famous examples include the lily, which has three petals, buttercups, which have five (pictured at left), the chicory's 21, the daisy's 34, and so on. Phi appears in petals on account of the ideal packing arrangement as selected by Darwinian processes; each petal is placed at 0.618034 per turn (out of a 360° circle) allowing for the best possible exposure to sunlight and other factors.

To support his deliberation Mr. Godse gave various examples from our day today life. The seed pods on a pinecone are arranged in a spiral pattern. Each cone consists of a pair of spirals, each one spiralling upwards in opposing directions. The number of steps will almost always match a pair of consecutive Fibonacci numbers. For example, a 3-5 cone is a cone which meets at the back after three steps along the left spiral, and five steps along the right. Likewise, similar spiralling patterns can be found on pineapples and cauliflower.

The Fibonacci sequence can also be seen in the way tree branches form or split. A main trunk will grow until it produces a branch, which creates two growth points. Snail shells and nautilus shells follow the logarithmic spiral, as does the cochlea of the inner ear. It can also be seen in the horns of certain goats, and the shape of certain spider's webs. Not surprisingly, spiral galaxies also follow the familiar Fibonacci pattern. The Milky Way has several spiral arms, each of them a logarithmic spiral of about 12 degrees. As an interesting aside, spiral galaxies appear to defy Newtonian physics. Subsequently, after a few rotations, spiral arms should start to wind around a galaxy. Faces, both human and nonhuman, abound with examples of the Golden Ratio. The mouth and nose are each positioned at golden sections of the distance between the eyes and the bottom of the chin.

It's worth noting that every person's body is different, but that averages across populations

Looking at the length of our fingers, each section from the tip of the base to the wrist — is larger than the preceding one by roughly the ratio of phi.

Even our bodies exhibit proportions that are consistent with Fibonacci numbers. Animal bodies exhibit similar tendencies, including dolphins (the eye, fins and tail all fall at Golden Sections), starfish, sand dollars, sea urchins, ants, and honey bees. When a hawk approaches its prey, its sharpest view is at an angle to their direction of flight — an angle that's the same as the spiral's pitch.

He finally concluded his lecture by pointing out the limitations of the calculation of the golden ratio in natural appearances. The lecture was a great success. It helps faculties to know about something new and prepare themselves for something innovative.

The Lecture came to an end with a vote of thanks by Professor Baliram Dhapase.


Dr. B.R. Dhapase


PRINCIPAL
Vijayakrao Patil Mahavidyalaya
Vaijapur, Dist. Aurangabad.

Marathwada Shikshan Prasarak Mandal's
Vinayakrao Patil Mahavidyalaya, Vaijapur

Staff Academy

Mr. A.D. Godse, Department of Mathematics, delivering a lecture on "Golden Ratio in Nature" on Saturday, 27th August. 2016



M.S.P Mandal's

Vinayakrao Patil Mahavidyalaya, Vaijapur

Lectures organised by Staff Academy

Resource Person : Mr. A.D. Godase (Department of Mathematics)

Topic : Golden Ratio in the Nature

Time : 2:30- 3:15

Date: 27/08/2016

Venue : Audio Visual 4

Sr. No.	Name of Teacher	Department	Signature
1.			
2.	Mr. J.P. Sonar	Chemistry	
3.	Gayke B. J.	Marathi	
4.	Dr. K.P. Bholane	Commerce	
5.	R. A. Dhawate	Commerce	
6.	Dr S M Babar	Economics	
7.			
8.	Rathod S. K	sociology	
9.	Perthane M.B.	BBA.	
10.	R. B. Kolekar	Marathi	
11.	R. K. Butte	Chemistry	
12.	Mr O. H. Sarage	Physis	
13.	K. S. Ban	History	
14.	Dr. L. D. Puri	Commerce	
15.	Dr. B. A. Dhapse	Hindu	
16.			
17.	Prof S. D. Tiwale	Sociology	
18.	R. S. Duttane	com	
19.	J. S. Patil	Ph	
20.	P. C. Patil	Eco	
21.	Smt. Gore K. H.	Sociology	
22.	Smt. Sonawane R. R.	chemistry	
23.	S. J. Narayankers J.	HIS.	
24.	Y. N. Wagh	Saiz	
25.	Sumit Dahale	Hindi	
26.	Sandip A. B.	Library	
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Dr. B.R. Dhapse (Coordinator)
Staff Academy

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