MATHEMATICS LESSON PLAN

Course title	MATH
Duration	40
Class	6 (12 Age)
Learning Space	Numbers and Operations, patterns
Sub Learning Area	Natural numbers

Gains	Exploring the mathematics that exists in nature
Learning-Teaching Methods and Techniques	Lecture, question-answer, reasoning, play, demonstration, self-study, guessing and checking
LEARN-TEACHING PROCESS	
Activity Example	

Mathematics enables us to understand nature. Nature is not just what we see, hear and smell. The orbits of the planets whisper ellipse and the curve in general. While the bee is making the cell of its honeycomb, it tries to make the cell hexagonal. Soap bubble tries to be a perfect sphere. Whatever system you graph the numbers in, a template will appear. It does not make a pine cone haphazardly. Ferns do not grow haphazardly. A snowflake does not have a random shape. That's why there are templates everywhere in nature.

In short,

1) Mathematics is the language of nature.

2) Everything around us can be described and understood by numbers.

Here are examples of them:

equilateral triangle and snowflake

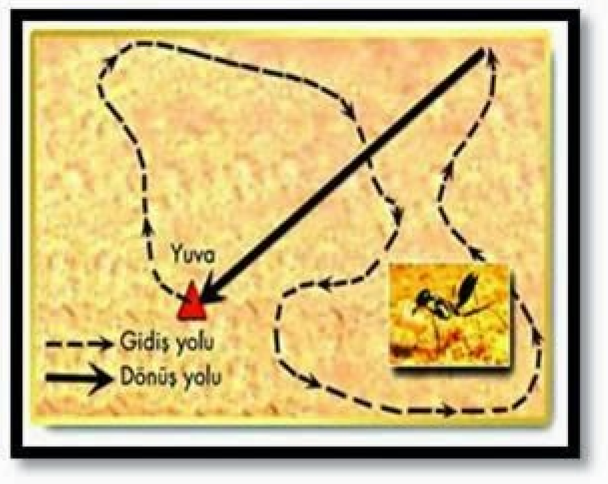
Take the middle third of each side of an equilateral triangle. Create a new triangle with these as in the figure. The new triangle is the same in shape and one-third the size of the first. So continuing, you get an ideal snowflake. Here is the geometry of nature.geometrisi.

Arılar ve altıgen

The bees make their honeycombs in the form of hexagons in order to use the unit area completely and to make a honeycomb with the least material. In addition, the angle of the honeycomb pores made by all female honey bees is 70 degrees 32 minutes, which is approved by all mathematics professors in the world and the most work is done with the best angle degree. The first point to note in this design is that there are 3 rhombuses at the bases of the hexagonal prisms that make up the honeycomb cells.

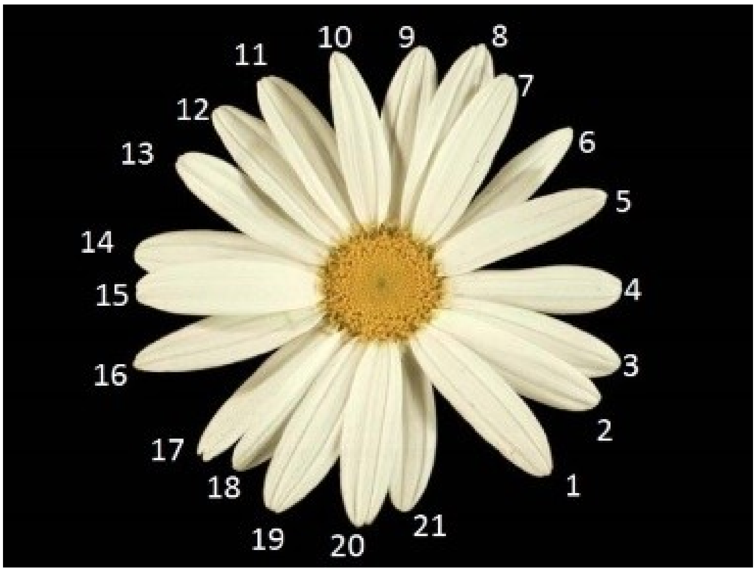
Ants and vectors

Sahara desert ants use the path integration system to find direction. In this system, the ant uses the sum of its walking and turning movements after leaving the nest to calculate its distance to the nest. A number of mathematical operations are performed in this order. The ant divides the distance to its nest into small segments; each segment carries the appropriate vector of direction and distance. With the sum of these vectors, the 'homing' vector, which gives the distance and direction of the slot, is obtained.



Daisies and the Fibonacci number.

As the daisies grow, each branch rises in accordance with the Fibonacci series.



math in snail

When the snail's shell is transferred to a plane, this plane creates a golden rectangle. The ratio of the long side to the short side of each of the rectangles in this golden rectangle gives the golden ratio.

Mathematics in ferns.

At first glance, it appears to be an irregular structure. However, when you examine it carefully, you will notice that the same figure, but smaller in size, is hidden inside the larger shape. This structure is called a fractal in mathematics. That is, when each part of the whole is enlarged, it still resembles the whole of the object. Fractals appear in many forms in nature.

Mathematics in the pine cone.

The cones we see on the pine trees are also equal to the Fibonacci numbers of these spiral numbers when we draw spirals by following the folds from the top of the cone.

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