Geometry in Nature

Geometry is a Greek word meaning earth measure.

LOOK FOR:

Parallel Lines – same distance apart

Repeating patterns- some are the same size (congruent) and some are simply repeating patterns

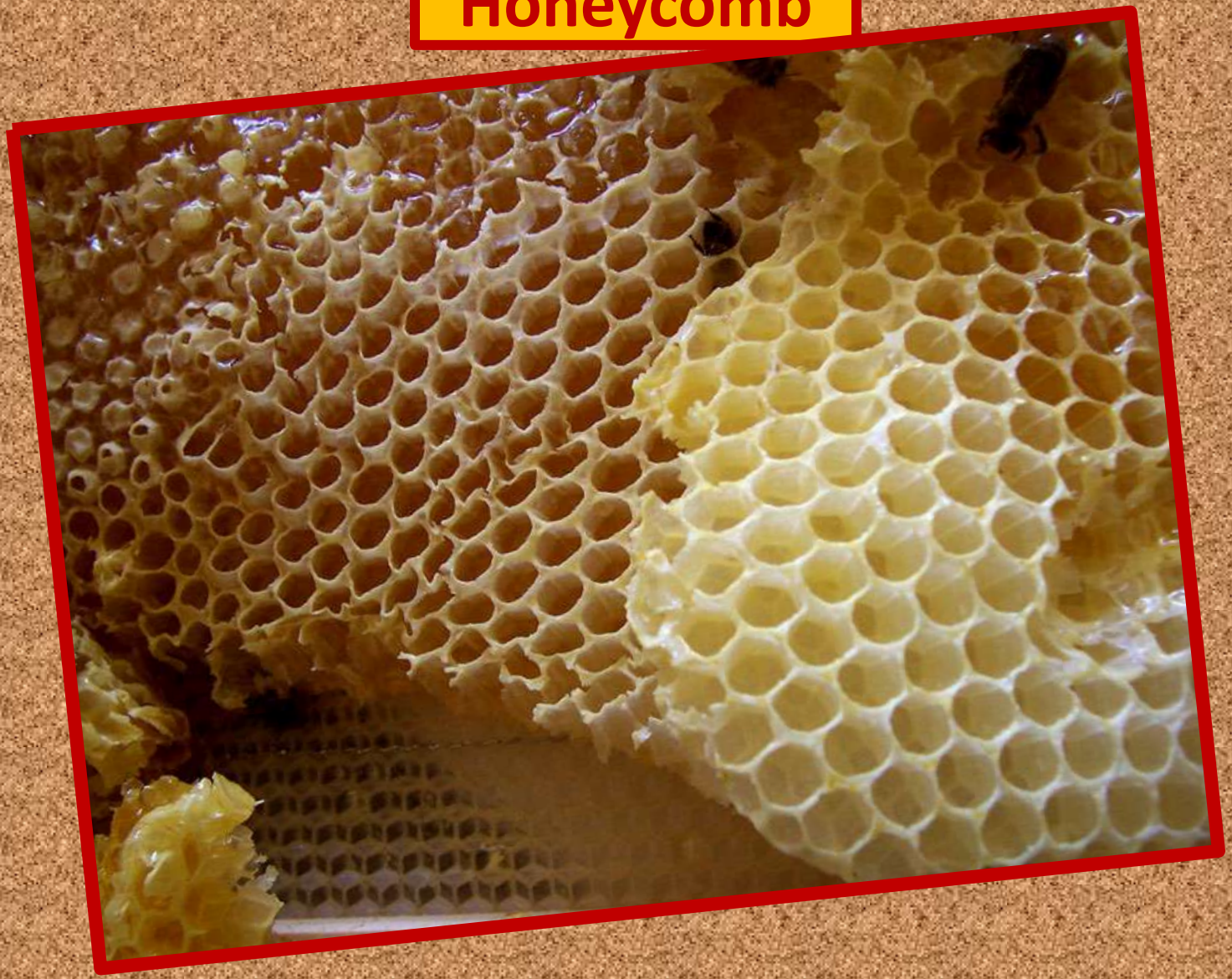
Shapes-Many geometric shapes are found in nature

Symmetry-a rotation or slide of a figure that leaves it unchanged although its position may be altered

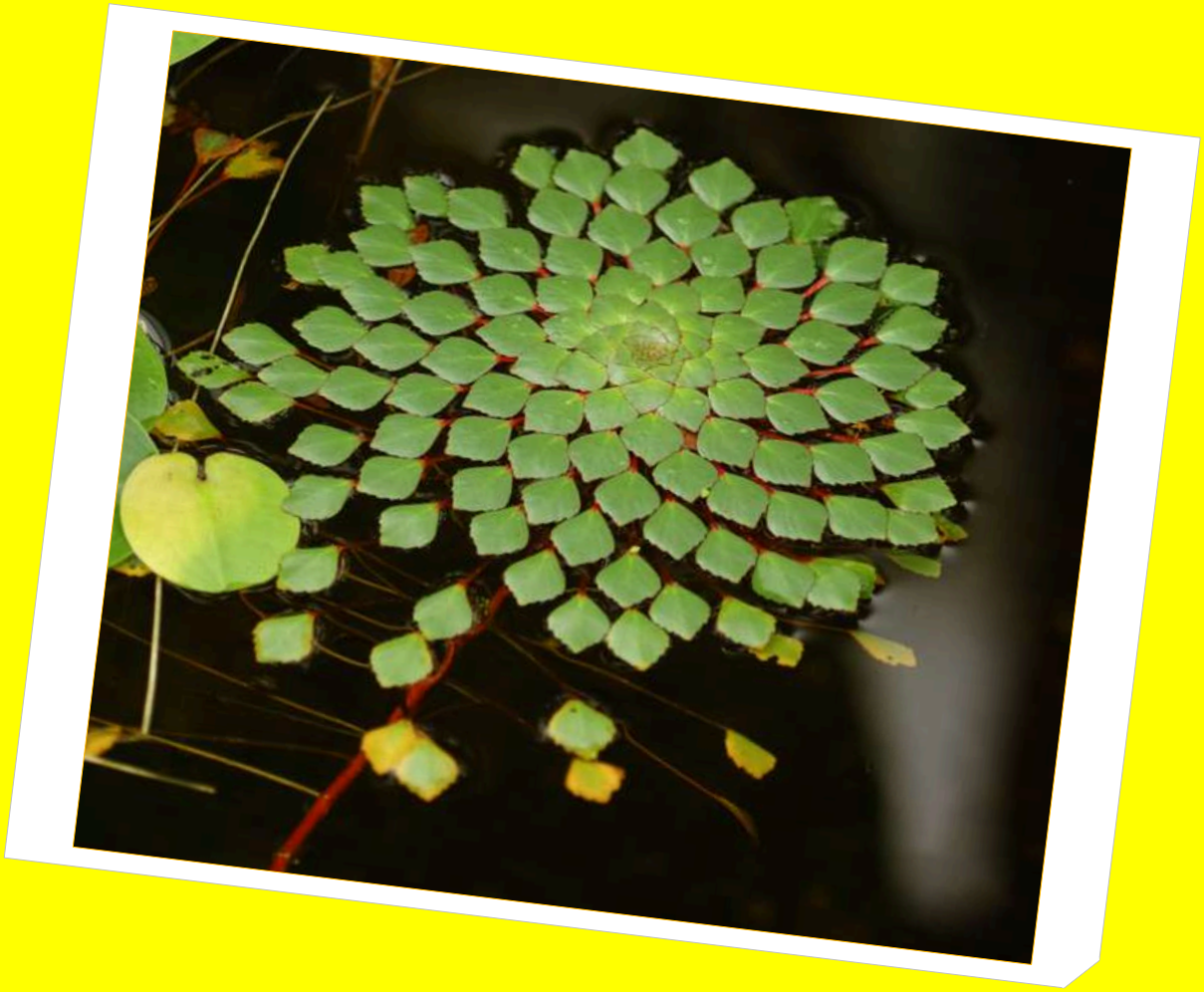
Proportion- a relationship between quantities such that is one varies the other varies in a manner dependant on the first

The bees make their hives into regular hexagons

Honeycomb



The following slides are some more examples of geometry in nature



These flowers illustrates perfect symmetry found in many of natures plants.

Passionfruit Flower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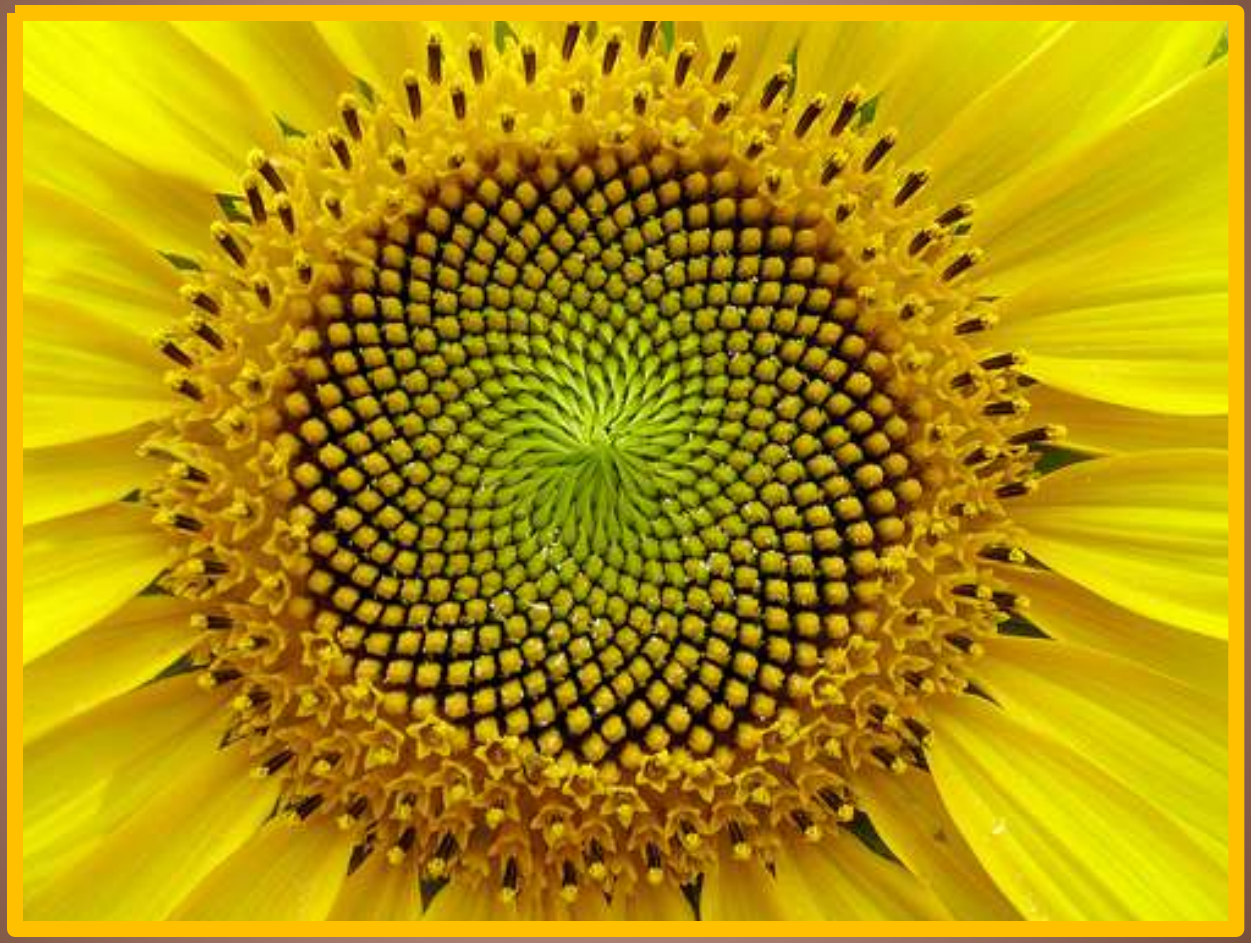
Symmetry in Leaves

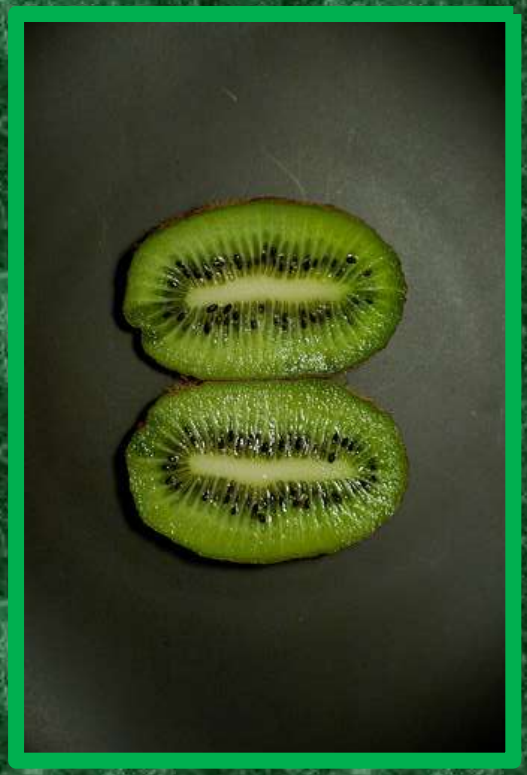
A salsify seed head displays Mother Nature's magnificent grasp of geometry.




Saleem Pathan

Mt. Pisgah - March 2006

PINECONE



See the symmetry in each slice of fruit.

Fossil Sanddollar

- This beautiful fossil sanddollar from Madagascar has incredible detail. The original shell consisted of small, thin, interlocking calcareous plates that have completely turned to stone. This fossil shows the 5 point "flower" symmetry common to the animal in the echinodermato phylum. This sanddollar is slightly less than 3" in diameter and protrudes 1" at its center high point.

SNOWFLAKE

Ghost of a melting snowflake

Pyramids

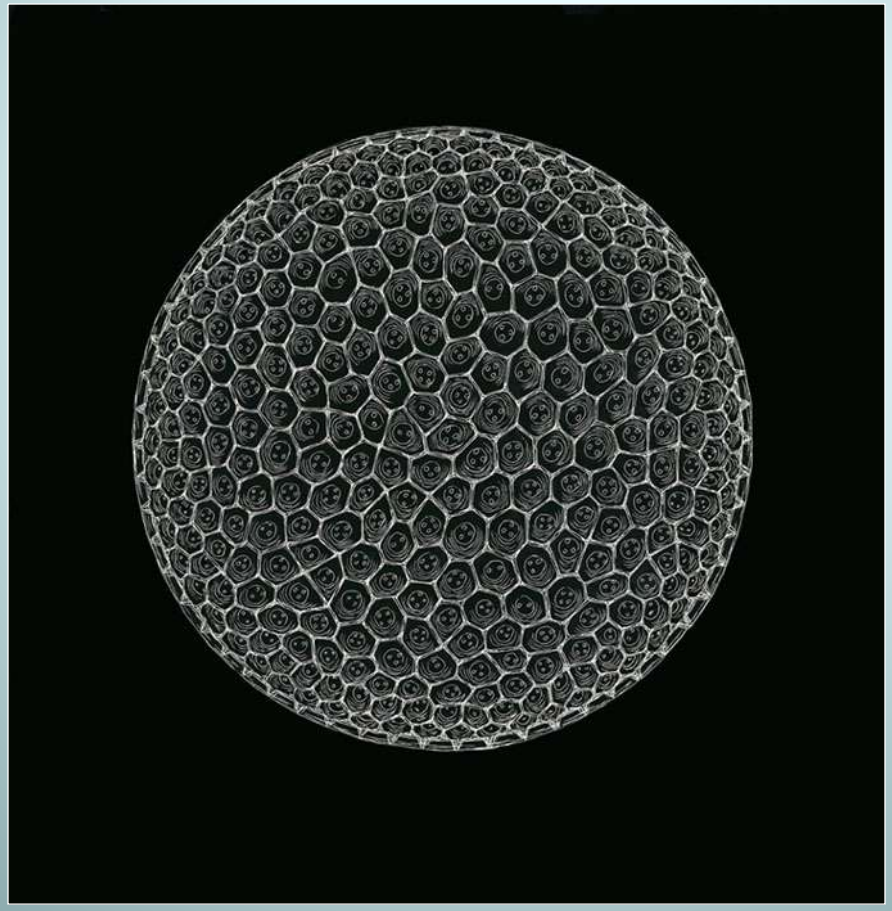
Twenty years were spent in erecting the pyramid itself: of this, which is square, each face is eight plethra, and the height is the same; it is composed of polished stones, and jointed with the greatest exactness; none of the stones are less than thirty feet." - Heroditus, Chap. II, para. 124.

A plethra is a measurement used in Ancient times, equal to 100 Greek feet

See the symmetry in the wings of the butterflies.

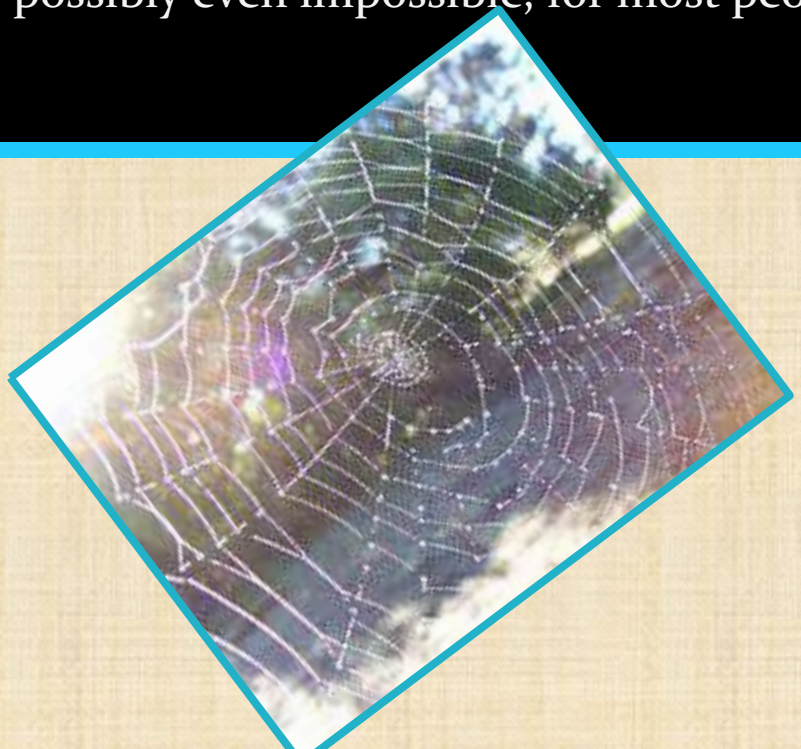
Starfish

The holes in radiolarian and diatom shells respectively exist for differing reasons. Both types of skeleton are formed from silicon compounds.
In diatoms, the holes collectively take on the role of a sieve, a two-way filtration mechanism across which water and nutrient molecules permeate the cell.



Just think about a spider's web. That is a complicated geometric design. And it is created, usually, in a perfect manner. Even though I majored in Drawing and Painting in college, and even though I am a Graphic Artist at work, I could not draw a design that perfectly, freehand. Yet a spider, using only his body, continually creates geometrically complex advanced shapes that few, if any, human adults could perfectly duplicate, without the aid of machines, or tools such as a pencil and ruler...and even with a pencil and ruler, it would be very complicated, and possibly even impossible, for most people to exactly duplicate.

(by Jeff Jenkins)



What geometric aspects do you see in each spider web?

You can find geometry in many more things in nature. Look around and see what you can find. You will be amazed!