

## HEXAGON CONNECTION

Why does the hexagon shape become so important? In basic terms, a hexagon is a simple shape with six sides. But this seemingly simple shape is nothing less than a wonder. You might even be surprised to know how hexagons are present in everyday life. From honeycomb in bee hives, to dragonfly eyes, to tortoise shells, to snowflakes, the hexagon is a staple in nature.

You may not know, but there are more hexagons in your body than you can imagine. That's because of the element carbon that is present throughout our body. This element is one of the most commonly found in our body. It is the most important structural element and the reason we are known as carbon-based life forms. About 12 percent of your body's atoms are carbon, adding up to about 14.4 Kg of carbon in the average adult. If you were to look at human skin or flesh, you would find a series of carbon hexagon chains that are nicely packed together.

Carbon is the wondrous element with amazing properties that forms the foundation for all known life forms on earth. Carbon atoms are the major component of many important substances and also polymers in the body including proteins, carbohydrates, fats, DNA, and RNA, and synthetic polymers such as nylon, polyethylene, polystyrene etc.

The hexagon is the most perfect and most adaptable shape of sound, order, harmony, structure, and balance. It also represents many frequencies. This hexagon shape is seen as a symbol of stability, interconnectedness, and unity, as each side is equidistant from the center, forming a strong and cohesive structure. It represents the union of opposites and the balance between the mathematical constructs, physical and spiritual realms. It is an absolutely perfect shape in economizing labor and space. Hexagon is the closest regular polygon to a circle that can tessellate a plane. What does that mean? It means there is no empty space between the cells. But what makes the hexagon so unique and special is the unlimited properties, characteristics, and efficient uses. This is the evolutionary scheme of the Universe. Let's explore this nature of the hexagon.

According to ancient theories the essential numbers in the universe are 3, 6 and 9. If you use these theories in the Solfeggio frequencies they all add up to 3, 6 or 9. In all of nature, these three numbers keep coming back.

396 – 9

417 – 3

528 – 6

639 – 9

741 – 3

852 – 6

963 – 9

In mathematics and geometry, a Hexagon is defined as a polygon (a closed two-dimensional shape with straight sides) with 6 sides. The Hexagon has 6 sides and 6 angles. The measure of each interior angle in a hexagon is  $120^\circ$  or when reduced equals 3 and the total sum of all of the interior angles is  $720^\circ$  or when reduced equals 9.

The hexagon is rooted in the number 3 in many ways and ancient philosophers were intrigued by the interaction between 2 and 3. They symbolized it by the image of a “marriage” as 2 is even/female, 3 is uneven/male to show that the hexagon functions as a stable foundation of which the two components support each other mutually. That is not to say that men are positive and women are negative. It is merely the expression of energetic charges; the positive and negative charges in electromagnetic energy and atoms; protons and electrons. For instance, the atom is made from positive particles known as protons (male energy) and negative particles known as electrons (female energy). Atoms have an equal number of electrons as there are protons in order to find stability and balance. Electrons also ‘mate’ with protons. In alchemy, this process is sometimes referred to as the ‘chemical union.’

The hexagon was used as a symbol to convey the spiritual attainment of an individual on the mummified body in Egypt and it is still used by trines and communities today to refer to the same notion.

The most beautiful depiction of a hexagon is the six-pointed star. In its most striking form is the crystallization of water. How do snowflakes form into their distinctive symmetric shape? Snowflake science boils down to nucleation, hydrogen bonding, and a small pinch of probability. It turns out, it’s all down to the hexagonal nature of H<sub>2</sub>O. On the atomic scale, hexagons prevail when concerning water. Regular ice is composed of hexagonal sheets of water molecules stacked on one another, in a similar fashion to graphite, with hydrogen bonds between layers and molecules. However, upon closer inspection these sheets are not regular hexagons; they are chair-like and puckered, with a general hexagonal shape. This is caused by the internal bond angle of water (104.5°) not matching the internal angle of a flat hexagon (120°).

For the structure to grow, water molecules collide at the edges of the hexagon and undergo hydrogen bonding. The likelihood of this is occurring is equal on all sides of the hexagon, which leads to water molecules clumping together to form regular, square sheets of hexagons. The two longer sides (marked in green on figure 1) of this newly formed rectangle have double the number of sites for hydrogen bonding than on the shorter red sides. This encourages growth on the longer sides (see green arrows). Addition of water molecules continues until all sides have equal probability of forming a hydrogen bond to another incoming water molecule, which is in the shape of a hexagon. This structure continues to grow larger, forming the basis of our snowflake.

Typically, snowflakes have a hexagonal center with branching arms outward. This is simply a matter of probability. As the hexagon grows larger, vertices become the most likely condensation site for water molecules, due to their relative isolation. This encourages elongation of these vertices into arms, which symmetrically branch out from the center, forming our classic snowflake.

Let’s look at the hexagon from a sacred geometry point of view. For instance, the end product that sprouts from the Tree of Life is the Flower of Life. Hidden in the patterned network of circles is the fruit of life which is said to open the gateway to higher consciousness. The Fruit of Life is composed of 13 circles within the pattern of the flower of life. The number 13 is also synonymous with unity and the transition between the physical realm and the spiritual realm. When you draw straight lines through the center of each of the 13 circles, it forms a six-pointed star – the basis of a hexagon when you join all the edges together. The Fruit of Life is the germination of consciousness emerging in the conscious mind. This is the point in your personal development when you have a platform to transform your inner wisdom into the outer world and subsequently change the way you perceive life.

Furthermore, the meaning of the hexagon reflects the virtues of charity, fortitude, grace, justice, mercy, prudence, and temperance.

The Seven Virtues are:

Charity is the Divine aspects, senses, and reflection of unconditional love and compassion embraced and emanating within your heart.

Fortitude is the higher moral and spiritual strength gained through strength of mind, courage of heart, and resiliency to adversity.

Grace is the Divine dispensation of mercy for earned transcendence (the transmutation of physical and emotional bondage) and the ultimate key required for spiritual self-realization

Justice is the Divine balance and peace of the Universal and Cosmic laws, truth, integrity and righteousness.

Mercy is the Divine aspects, senses, and reflection of Divine Spirituality through benevolence and forgiveness.

Prudence is the Divine knowing and understanding of all wisdom and knowledge tempered by truthful judgement.

Temperance is the Divine aspects, senses, and reflections that overcome and override inordinate human nature and desires.

When you notice hexagons then it reveals the unconscious content awakening in your conscious mind. The meaning veiled beneath this explanation relates to the wisdom of the unconscious penetrating the conscious mind; the emergence of waking consciousness you were previously unaware of.

So why is it that hexagons tend to show up so often in nature? Well, it depends how you look at it. It can be an efficient way to conserve mass or energy, or simply a way to arrange atoms in a way that they're stable. It can be simply something owed to its geometry. The hexagonal shape leaves no wasted space, and best fills any space you put it.

Hexagonal shapes used as solar panels are more efficient than traditional rectangular solar panels because the hexagon shape allows for more sunlight to be captured per unit area. The hexagon solar panel has 180% more solar power capacity. They are also more durable than traditional rectangular solar panels because the hexagon shape is stronger and can withstand more stress. In addition, hexagonal solar panels are more aesthetically pleasing than traditional rectangular solar panels because the hexagon shape is more natural and fits in better with the environment.

The hexagon shape has also been used in thermal flow-reversal reactor operations, where it has been tested for thermal shock loads.. The hexagons were also exposed to thermal stress distributions and analyzed with different structural and operational parameters. This makes hexagons ideal for heat shield tiles. For this reason, hexagonal heat shield tiles are used to protect Starship vehicles from extreme re-entry atmospheres. The hexagon is a great shape because it offers no straight path for hot gas to accelerate through the gaps.

Hexagonal architecture is a model or pattern for designing data storage, software applications, and port/adaptor patterns. The idea behind it is to put inputs and outputs at the edges of your design. In doing so, you isolate the central logic (the core) of your application from outside concerns. Having inputs and outputs at the edge means you can swap out their handlers without changing the core code.

The hexagonal shape is preferred in cellular architecture because, it allows for complete and balanced coverage with minimal overlap, which reduces the number of base stations required to cover an area. The use of hexagons ensures that the cells are as close to circular as possible, minimizing interference between neighboring cells. The use of the hexagonal shape also allows for efficient use of available resources, such as power and bandwidth, by ensuring that the base stations are evenly distributed throughout the service area.

And what about the hexagon shape of the Harold E. Holt naval station, which is a secretive communications center operated by Australia's Department of Defense. The installation is a joint Australian and American facility and it's also home to high-tech technology operated by the US Department of Defense's Space Force. The station is made up of 13 radio towers. The tallest, Tower Zero, sits in the middle while six other towers are placed in a hexagon around it. The facility sends radio signals to US Navy and Royal Australian Navy ship and submarines in the western Pacific Ocean and the eastern Indian Ocean. It is considered to be the most powerful transmission station in the Southern Hemisphere.

So, we've mentioned a number of connections using the hexagon shape. Realize that there are many applications in which the hexagon has become the innovative engineering of modern technologies and structures. It is the one shape that conquers limiting factors across nature, biology, technology, engineering, heat, stress, and sound.

