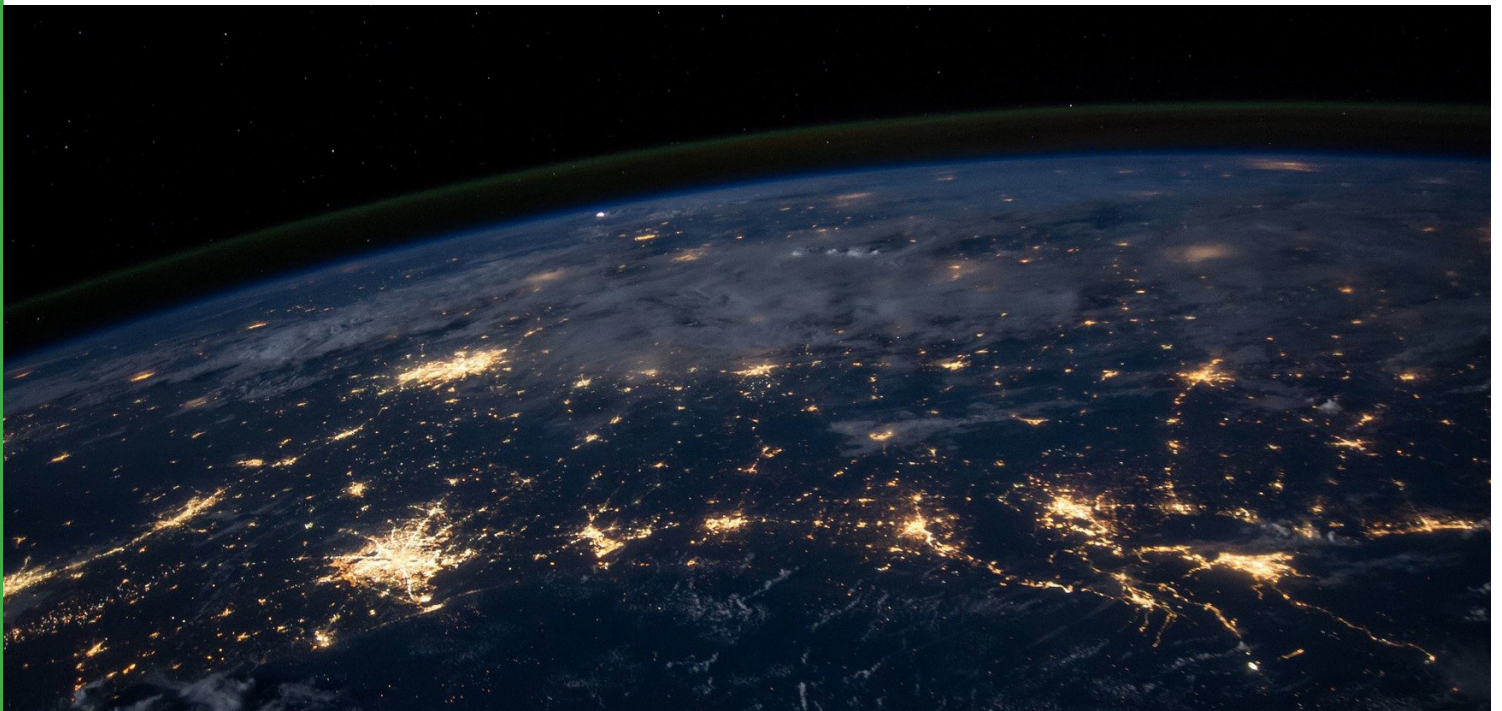


Earth's Atmosphere



*“Sometimes you have to go up really high to understand how small you really are”
-Felix Baumgartner*

(Veteran sky diver and world record holder for the highest ever free fall)

Felix Baumgartner had to live this experience to realize how small he really was; but do we all have to experience free fall to recognize how tiny we are in comparison to the vastness of the universe?

Just imagine yourself in space, travelling from one galaxy to another- galaxies that are millions or even billions of light years apart. You are still in only one universe. Some astro-physicists think that there may be innumerable different universes! Now think: How big are we, really?

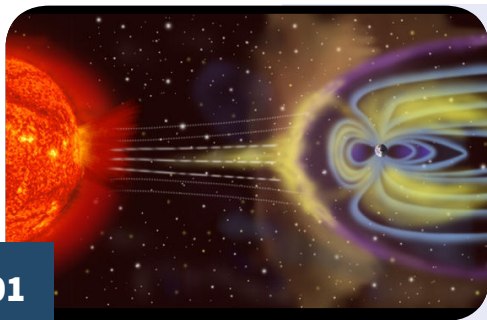
Have you ever thought about why the oceans do not evaporate into space? Or why we never seem to run out of air to breathe in? Are you ready to travel with us on a journey to explore the Earth's invisible giant- the atmosphere- that has been designed to ensure our survival as a species? In this chapter, we will learn about the fascinating aspects of the atmosphere with our usual method: five-dimensional scientific thinking. But more importantly, we will try to understand the meaning of this wonderful design: what it means for us, for our lives and for our destiny.

First Dimension : Analytical Thinking

SCIENTIFIC UNDERSTANDING OF THE ATMOSPHERE

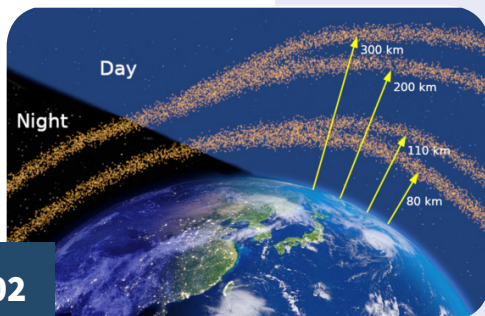
In this dimension, we attempt to answer the following geological question: What is the atmosphere?

The atmosphere is the layer of gases surrounding the Earth. It is made up of the:



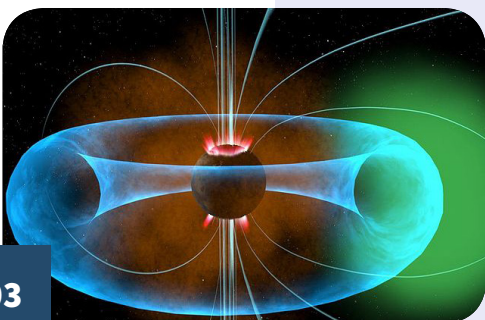
01

1. Magnetosphere: *This is the space around the Earth made up by the planet's magnetic field. It contains positively charged protons and negatively charged electrons that are designed to sense the Earth's magnetic field. Parts of the magnetosphere overlap with the ionosphere.*



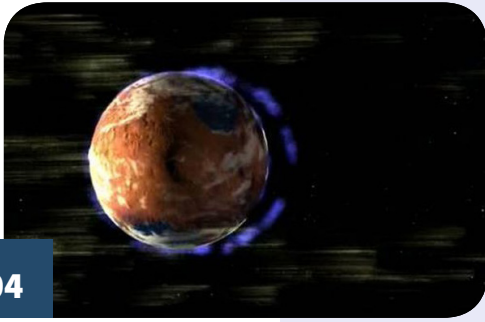
02

2. Ionosphere: *This is the region that is charged (ionised) by cosmic radiation and radiation from the sun. This layer overlaps with the exosphere, thermosphere and mesosphere.*



03

3. Exosphere: *This is the outermost layer of the atmosphere. It contains helium and hydrogen which are widely dispersed. The exosphere is about 6200 km in width- it is very large! There is no air to breathe here, and temperatures are very low. There is no sound here either as there are no gas molecules to transfer sound vibrations.*



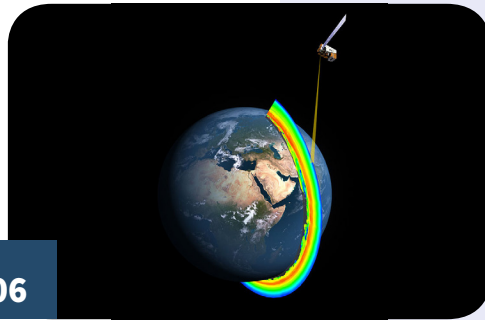
04

4. Thermosphere: *This is the layer between the exosphere and the mesosphere. It is very hot (it can reach 4500 degrees Fahrenheit!) and is home to the International Space Station. What is interesting about the thermosphere is that although it is very hot, you would not feel heat in this part of the atmosphere. This is because there are very few gas molecules to transfer the heat to your body in this layer. The thermosphere is also thick (about 513 km in width), but not as thick as the exosphere.*



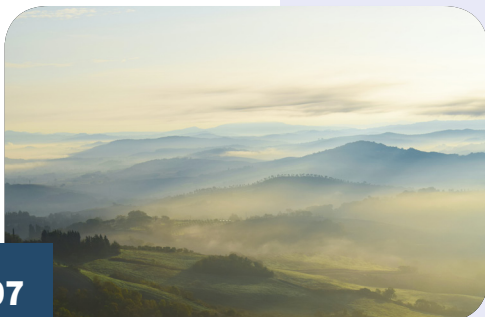
05

5. Mesosphere: *Found right beneath the thermosphere, this layer is made up of a mixture of gases. When you see meteor showers in the sky, it is this layer that meteors are streaking through, and burning up as they fly past. The meteors do not burn in the exosphere and thermosphere as there are not enough gases there to cause friction and produce heat.*



06

6. Stratosphere: *This is the layer beneath the mesosphere where gases are layered (or stratified) according to their respective masses. This layer is home to the ozone layer that is designed to protect us from the harmful ultraviolet radiation produced by the sun.*



07

7. Troposphere: *This is the lowest layer of the atmosphere and the layer that we live in near the Earth's surface. It is about 6-10 km in length. This layer is where changes in weather occur. Generally, the higher up you go in this layer, the less the concentration of gas molecules in the air becomes. This means that air pressure decreases as you move upwards. This is why mountain climbers use oxygen tanks when they ascend (since the oxygen molecules in the air decrease with altitude).*

The Atmosphere-Layers of the Earth



<https://youtu.be/G4Zia3qkFkI?t=1>

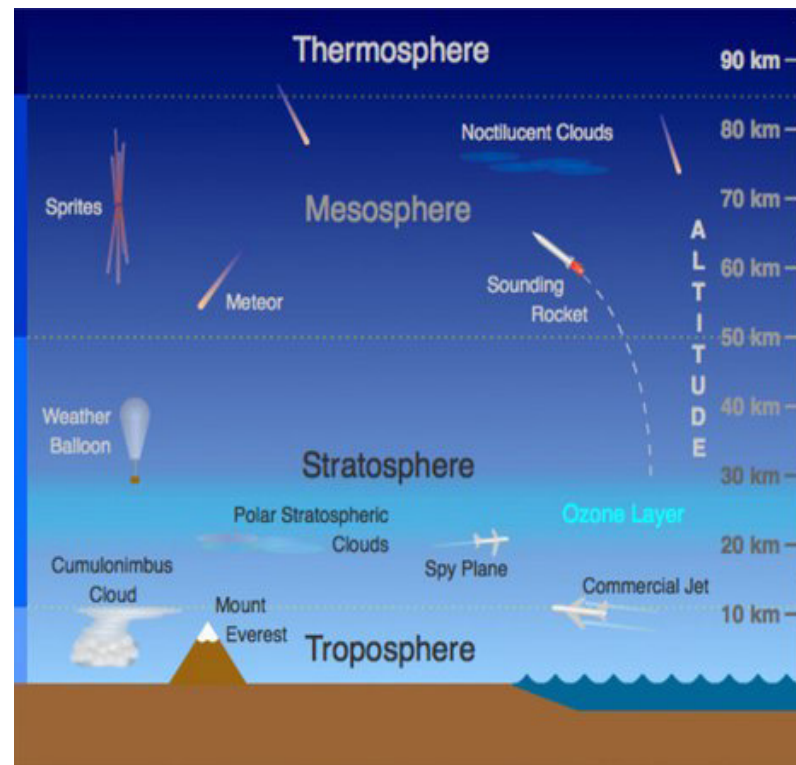
The atmosphere is designed to:

- 1. Keep out ultraviolet radiation*
- 2. Shelter us from incoming meteors*
- 3. Retain and circulate heat*
- 4. Transfer sound*
- 5. Retain oxygen*
- 6. Retain and transport water*

Why do mountain climbers struggle to breathe at higher altitudes? Why do oxygen levels decrease as they climb a mountain? Scientists attribute this phenomenon to the force of gravity. Gravity is an invisible force that pulls molecules in the air, such as oxygen, closer to the Earth's surface. It is the same force that is designed to keep you, along with all the components of the planet, from being sent off into space. Without the pull of gravity, the atmosphere would be released into space and disintegrate.

What are the functions of the atmosphere?
Why is it important?

The atmosphere is primarily composed of a combination of nitrogen and oxygen (99 per cent) in addition to traces of argon, carbon dioxide, helium, neon and other gases.



-AMAZING SCIENTIFIC FACTS- EARTH'S ATMOSPHERE

1.

Did you know that the sky is not blue? It is actually violet (bluish purple). As light waves from the sun reach our atmosphere, particles absorb the light and scatter it. Although the most commonly scattered colour is violet, our eyes are designed to be sensitive to the colour blue. What if the sky was always black like the Moon's or orange like Venus'?

2.

Did you know that our atmosphere is the only one that is known so far to have enough oxygen required for life?

3.

Did you know that without various gases in the atmosphere, the Earth would be too cold to live on? Indeed, water vapor, carbon dioxide, and other gases work like a blanket preventing the escape of heat.

4.

Ever wonder what causes the white streaks visible after planes pass overhead? These white trails, known as contrails, form when the hot, humid exhaust from the plane mixes with the cold outside air.

5.

Did you know you can even predict the weather based on the white streaks? A thin contrail that disappears quickly means that there is very little humidity in the sky. Seeing a very thick contrail that persists in the sky probably means a storm is on its way!

+ 6.

The first person to jump from the sky at 120,000 feet was Austrian parachutist Felix Baumgartner. In 2012, Felix stepped out of a balloon gondola 24 miles above Roswell, New Mexico, in a pressure suit and landed - 9 minutes later- safely on the ground. In doing so, he set 3 world records- highest balloon flight, highest free fall and greatest free fall speed. His speed in free fall was 843 mph (greater than the speed of sound).

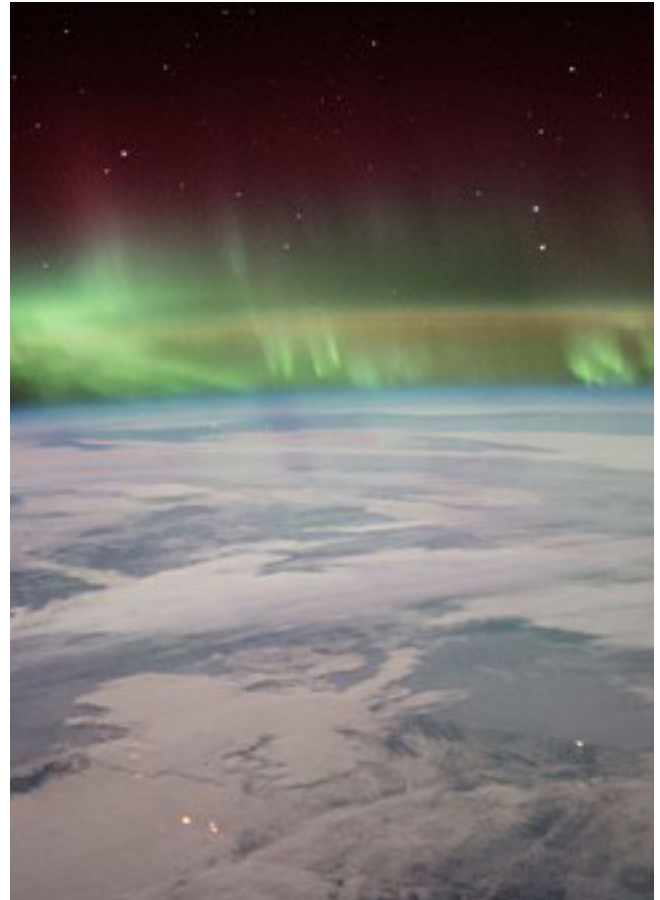
Second Dimension : Analogical Thinking

COMPARING THE ATMOSPHERE TO AIR PURIFIERS

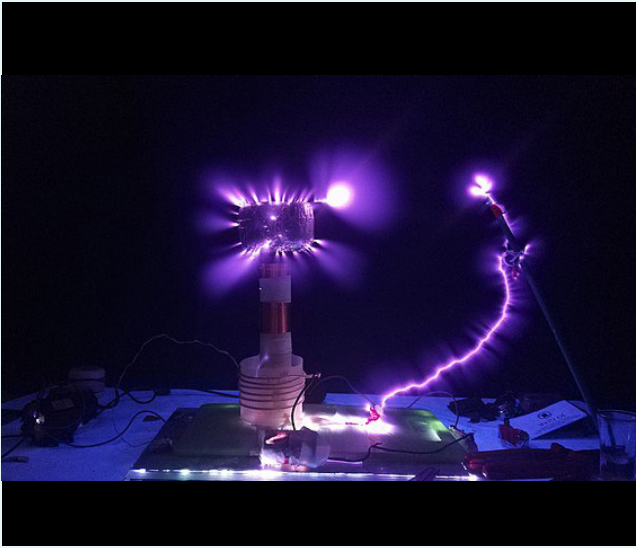
Now, we will try to understand what 'scientific facts' mean to us. In order to understand this, we will compare the function of the atmosphere to objects invented by human beings that perform similar functions. As mentioned in the previous dimension, the atmosphere is designed to produce many valuable outcomes for living beings. One of them is preventing harmful ultraviolet radiation from reaching the planet whilst still allowing the sun's warming rays to penetrate through.

How does the atmosphere know which rays to filter out and which rays to let in? What is amazing about this particular function of the atmosphere is that it filters out only the rays that are harmful to us. Can you imagine what would happen if the atmosphere confused things and began to filter out the rays that are good for us instead?

Let us compare the process of filtration in the atmosphere to the process by which by man-made air purification systems collect unwanted air particles in our homes. There are many types of air purifiers ranging from the basic filters installed in heating and cooling systems, to the more sophisticated air purifying technologies.



Basic filters are commonly made of dense materials such as foam, cotton or fiberglass. The higher the density of the material used in the filter, the more particles are trapped and removed from the air. A limitation of this type of filter is that it reduces air flow through heating and cooling systems. Also, such a filter needs to be replaced regularly to avoid chemical buildup and a reduction in efficiency.

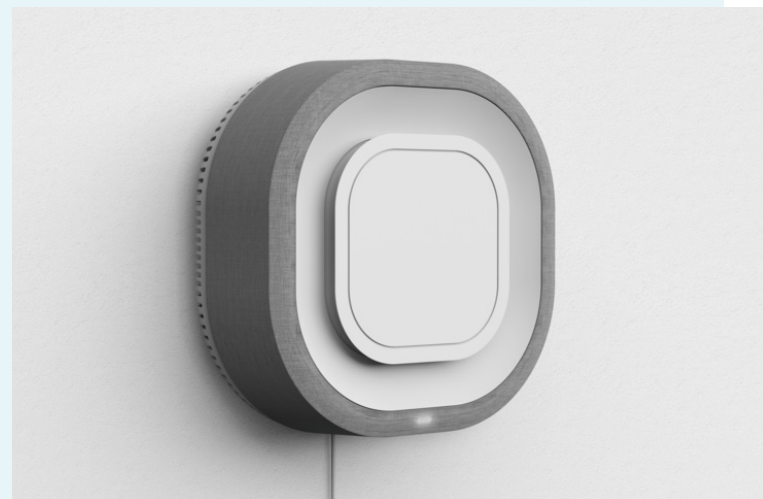


More sophisticated types of air purifying technology include ionising and ozone systems. Ionising filters utilise a small device called a Corona discharge that ionises large particles in the air which are then attracted to charged metal plates. The Corona discharge has an intense electrical field that adds or removes electrons from heavy particles in the air such as dust and other contaminants. The ionised particles are then attracted to charged metal plates and filtered out of the air.

Ozone purifiers work by using UV light or a Corona discharge to transform naturally occurring dioxygen (an oxygen molecule made of two oxygen atoms) to ozone (a molecule that has three oxygen atoms). Producers of these devices claim that ozone is a natural disinfectant and 'naturally' cleans the air. However, research has shown that ozone is highly reactive and can be toxic. Thus, it can react with other substances in the air to form nitrogen oxides that are not stable and harmful to living things.

Clearly, all man-made purifiers that attempt to come up with a clean indoor atmosphere have their limitations. They are selective- meaning they can only be used to remove particles of a certain size- and can even be harmful (like the ozone purification technology). Most types of filters also require some type of connection to an electrical current to charge the unwanted particles and filter them out.

Now, what if we tried to build a giant filter for the Earth? If that's not possible, what about trying to construct one for a country- or even- a city?



" Unlike the Atmosphere, there is no sound in space (since there is no air), at least to the human ears."

In 2018, at the World Architecture Festival, an architectural firm was given the Experimental Future Project of the Year award for designing a network of giant towers that would absorb pollution and recycle it back into breathable air. In addition to the unappealing aesthetic factor of the hanging towers in the sky, experts pointed to the many technical difficulties that would need to be overcome before the realization of such a dream project. Still, despite these foreseeable obstacles, cities with extremely high levels of air pollution were excited to see the feasibility of such a ground-breaking project.

If it is difficult to maintain the quality of the indoor atmosphere of a small house, can you imagine the magnitude of maintaining the quality and intricate balance of the 5000 trillion metric tons of atmosphere above the surface of the Earth?



If it is not possible- with our existing knowledge- to build such a giant filter for a city, how much knowledge and power do we need to have to build one for the entire planet? Indeed, some nations are still struggling to repair a small hole in the ozone layer of the atmosphere caused by human activity in the last several decades.

The atmosphere is designed to support all living beings on the planet by giving them access to clean air, being a medium for sound to travel in*, retaining healthy levels of heat from the sun, preventing harmful ultraviolet radiation from reaching us in large quantities and being a vehicle for the movement of water- the essential component of living things. In other words, without the provision of the atmosphere, we would not be able to breathe, communicate, maintain our body temperature or survive.

Can a massive air filter clean the sky over Xian, China?



<https://youtu.be/8shFLPCLpU8>

Can a massive air filter clean the skies over Xian, one of China's most polluted cities? In this video, we explore how an air filter is used to improve the quality of the air in Xian.

Third Dimension : Critical Thinking

EXPLORING THE MAKER OF THE ATMOSPHERE

In this dimension, our thinking is a critical questioning of all things concerning the scientific knowledge of the atmosphere. Let us imagine that we are voyagers and have reached a station where travelers rest in order to continue their voyage to the final station- their true home. We settle at the transient station and open our eyes; but we begin to wonder in the face of this wonderful scenery and think: "Who might be the master of this fine place?" We notice that there is a most generous banquet, a most ingenious exhibition, a most impressive



camp and training ground, a most amazing and wondrous place of recreation, a most profound and wise place of instruction. Anyone who has experienced this kind of a situation cannot but think why the owner of this station has put so much effort into building such a wonderful station just for transient passengers. Everything that we see resembles a great book in which wonderful things are written. The key is to understand the meaning of what is written and try to apply what we learn. Who is the author of this great book, and who is the owner of this lofty realm? As we remain in a state of astonishment we notice the beautiful face of the heavens, inscribed with the glittering stars; they smile at us and as if telling us: "Look at me, and I shall guide you to what you seek."

" Who might be the master of this fine place? Who is the author of this great book, and who is the owner of this lofty realm?"

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We cannot prevent ourselves from staying away from this invitation. This wondrous place of gathering which we now study as the atmosphere begins to proclaim to us: “come as a guest to the world, look at me! You can discover and find through me the object of your search, the one who sent you here!” As travelers, we look and see a kind of sour but generous face of the atmosphere, and listening to the awesome but joyous thunderclaps. For example, the clouds, suspended between the sky and the earth, water our garden in the wisest and merciful fashion, furnish the inhabitants of the earth with the water of life, and modify the natural heat of life.

Next the wind in the atmosphere attracts our attention and we see that the air is employed wisely and generously in such numerous tasks that it is as if each of the inanimate atoms of that unconscious air were hearing and noting the orders coming from the owner of the station; without neglecting a single one of them. This way it gives comfort to all

beings and conveys to all living things the heat, light, and electricity they need, and transmits sound, as well as aiding in the pollination of plants.

Upon investigating such innumerable wondrous things around we cannot but start thinking critically saying to ourselves: “The inanimate, lifeless cloud that resembles carded cotton has of course no knowledge of us; when it comes to our aid, it is not because it takes pity on us. It cannot appear and disappear without receiving orders. Rather it acts in accordance with the orders of a most powerful and compassionate commander.

First it disappears without leaving a trace, then suddenly reappears in order to begin its work. By the command and power of a most active and exalted, a most magnificent and splendid, ruler, it fills and then empties the atmosphere. Inscribing the sky with wisdom and erasing the pattern, He makes of the sky a tablet of effacement and affirmation, a depiction of the gathering and recreation.

The ruler regulates and disposes the wind and taking with it treasures of rain each as heavy as a mountain, hastens to the aid of the needy. It is as if He makes the sky weeping over them in pity, with its tears causing the flowers to smile, tempering the heat of the sun, spraying gardens with water, and washing and cleansing the face of this station.”



Did you know?

Most of the light that comes from the Sun is not visible to the human eye.

Now let us reflect on the design of the atmosphere. If there was a fault in the atmosphere's ultra violet-blocking capability, what would happen? What would happen if the ozone layer, designed to prevent harmful levels of ultraviolet radiation from reaching the planet, is severely destroyed? The scenario for Earth in this case would be very grim. As you recall, one of the primary functions of ozone in the stratosphere is to block the sun's harmful ultraviolet radiation from reaching the planet.

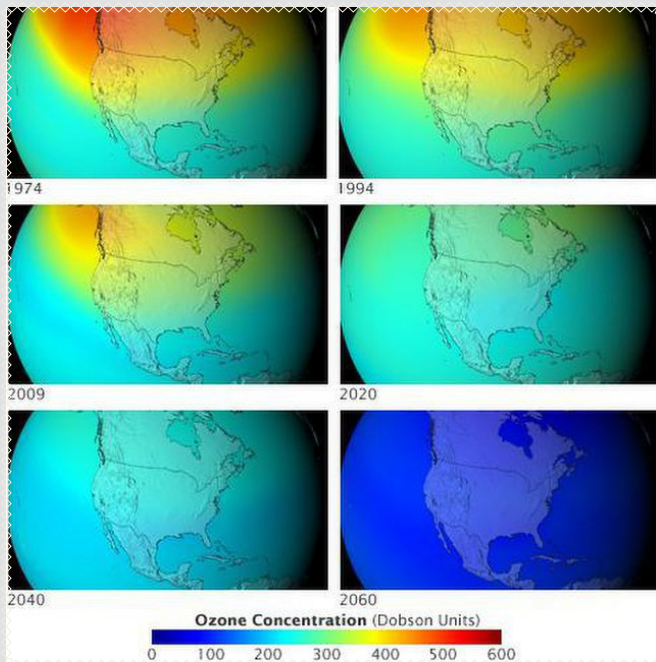
Every light ray has a specific wavelength. The Sun, the source of all light on Earth, radiates energy in a wide range of wavelengths. However, most of the light that comes from the Sun is not visible to human eyes. The shorter the wavelength of a light ray, the more energy it radiates. Shorter wavelengths are more harmful to living beings than longer wavelengths. The wavelength of light is measured by a unit called a nanometre (abbreviated as "nm"), which basically means a billionth of a meter.

For example, the Ultraviolet (UV) radiation that reaches the Earth's surface has a wavelength between 290 and 400 nm. This is shorter than the wavelength of visible light, which lies between 400 to 700 nm.

Not all ultraviolet light is harmful; without some form of ultraviolet light, life on Earth would not be possible. One useful type of ultraviolet radiation is UV-A. UV-A has a wavelength of 320-400 nm and plays an essential role in the formation of Vitamin D by the skin. Still, if we allow our eyes to be exposed to this type of ultraviolet light then it becomes harmful, causing cataracts. High levels of ultraviolet light exposure also result in sunburn.

How does the atmosphere measure these light rays to allow some to reach us but not others?

How does the atmosphere prevent the dangerous and harmful rays of light from reaching Earth?

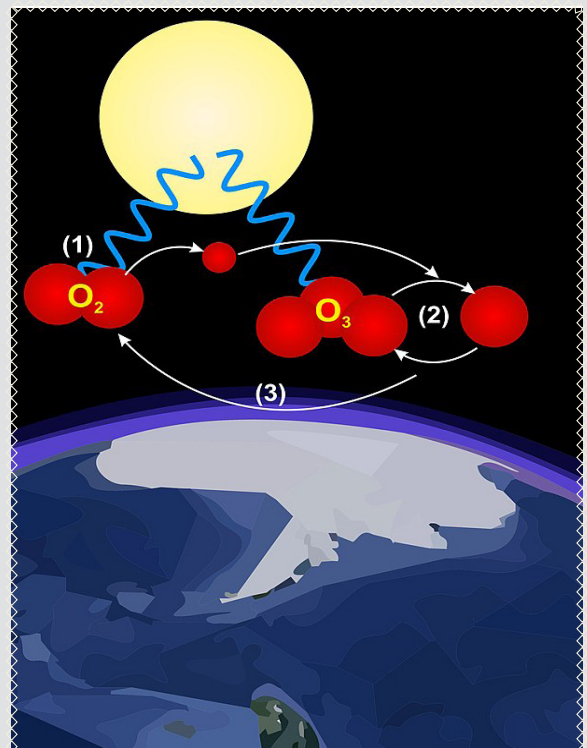


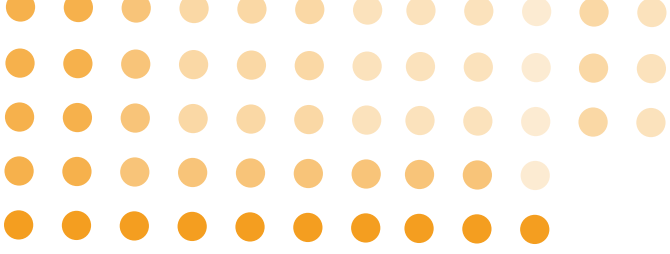
Ozone in the upper atmosphere is designed to absorb UV radiation and prevent most of it from reaching the Earth. A depleted ozone layer would have disastrous consequences for the planet. What is frightening is that this scenario could have been a reality today had scientists not discovered the creation of a hole in the ozone layer above Antarctica in the 1970s.

In the 1970s, scientists discovered that industrial contaminants called Chlorofluorocarbons (CFCs) were damaging the balance of ozone in the stratosphere. CFCs, invented in the 1920s, were once utilized in refrigerants and aerosol containers. The use of the highly reactive CFCs eventually led to the destruction of a significant portion of the ozone layer in the stratosphere. In the 1980's, leading scientists, industry leaders and governments agreed on the formation of the Montreal Protocol. The Montreal

Protocol made it possible to limit the production of CFCs and other pollutants that resulted in the destruction of the ozone layer. Without adherence to this global agreement, the effects of industrial pollutants on ozone depletion would have continued to cause terrible consequences.

We now know that high exposure to ultraviolet radiation causes serious damage to humans, animals and plants ranging from sunburn, permanent changes to DNA, and cancer. If UV exposure occurs on a mass scale, irreversible damage to the Earth's ecosystems would occur. Thus, if it is challenging to repair a mere layer of the atmosphere with our existing knowledge and power, then we cannot possibly hope to regulate the atmosphere with any man-made filters.



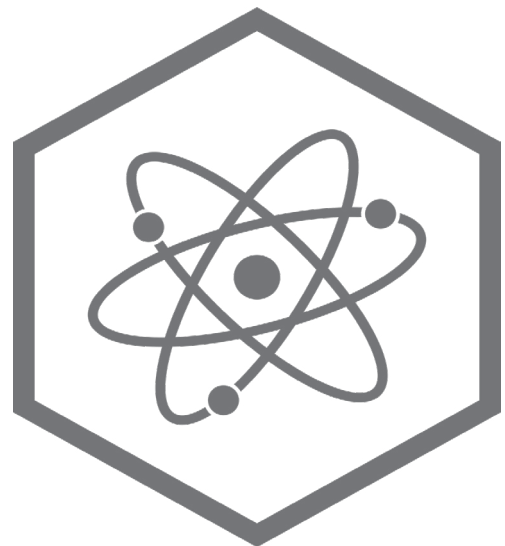


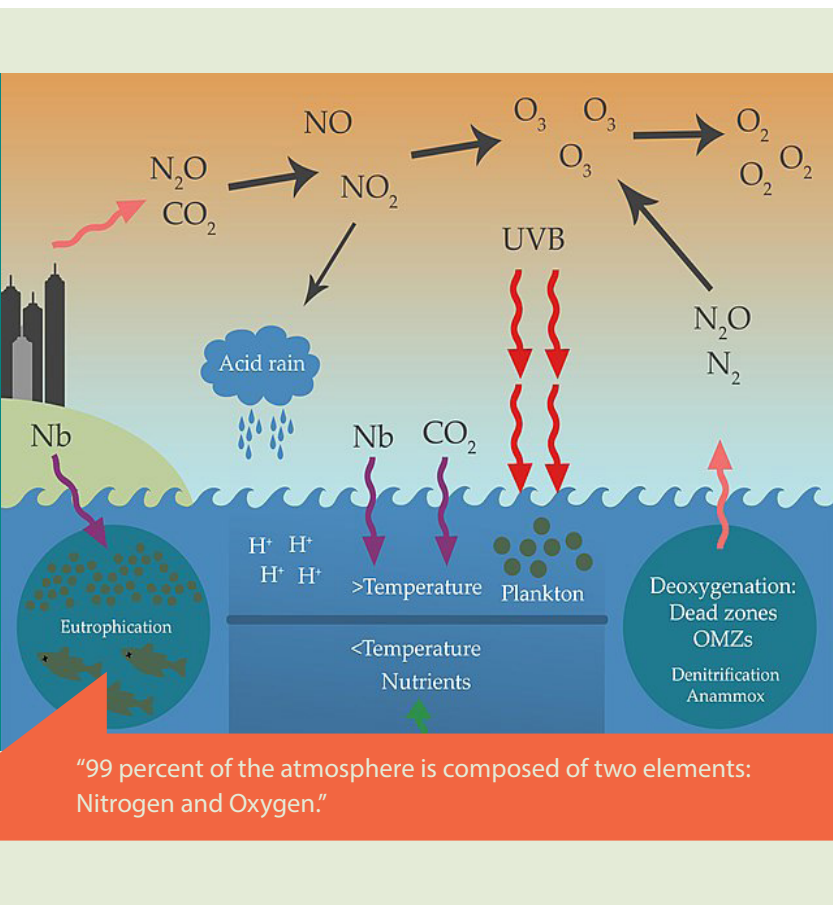
We know with certainty that any man-made filter can only be possible through the availability of certain knowledge, power, and will. What about the atmosphere with its multiple layers? Can it exist and self-regulate by itself? Obviously, if we do not believe that a simple man-made filter can exist by itself through random occurrences and arrangement of raw materials, it is illogical to assume that the formation of the elegant atmosphere was a random occurrence.

Can the atmosphere be the product of so-called natural laws? That is not reasonable either. We know for sure that laws without law enforcement mean nothing. In fact, laws are nothing but the description of observed regularities in the universe. Just as we do not believe that the factory manuals of filtering devices produce them, we cannot possibly believe that descriptive laws are the source of observed natural phenomena.

Can the existence of the Earth's atmosphere be the outcome of material causes such as gases with specific properties? For this to be possible, we would have to assume that the particles of the atmosphere have the consciousness, knowledge, and power to come up with such an amazing global filter.

- *What about the atmosphere with its multiple layers?*
- *Can it exist and self-regulate by itself?*
- *Can the atmosphere be the product of so-called natural laws?*
- *Can the existence of the Earth's atmosphere be the outcome of material causes such as gases with specific properties?*

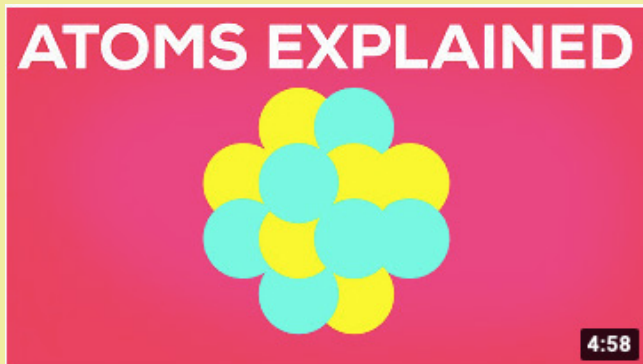




Moreover, these particles should be aware of not only of their own functions but also the functions of all the other related particles and the needs of all the living beings on the planet in order to act the way they do. Obviously, the basic elements of the atmosphere neither have consciousness nor such comprehensive knowledge.

As mentioned before, 99 percent of the atmosphere is composed of two elements: Nitrogen and Oxygen. In fact, the atomic structures of these elements are very similar. Only one extra electron distinguishes an Oxygen atom from a Nitrogen atom. We know nothing about why adding one electron to a Nitrogen atom will produce Oxygen- the element with the properties needed to sustain life. Likewise, adding one electron to Carbon for example will produce Nitrogen, an element with very different properties. We also do not understand why plants, as living organisms, need Carbon Dioxide while animals need to Oxygen to survive.

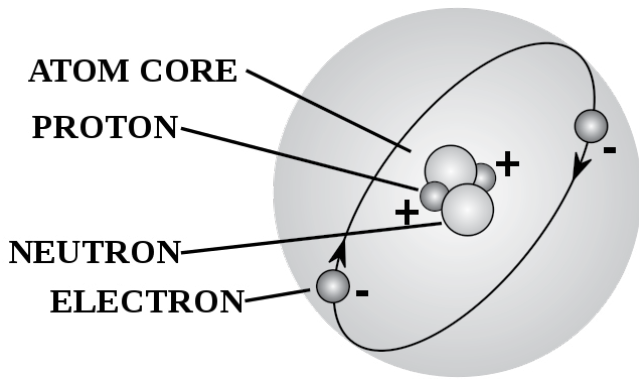
How Small Is An Atom? Spoiler: Very Small



[https://youtu.be/ INF3_30IUE](https://youtu.be/INF3_30IUE)

In this clip, we discover the surreal, miniature world of atoms and quarks.

“We do not understand why plants as living organisms need Carbon Dioxide, while animals need Oxygen to survive.”

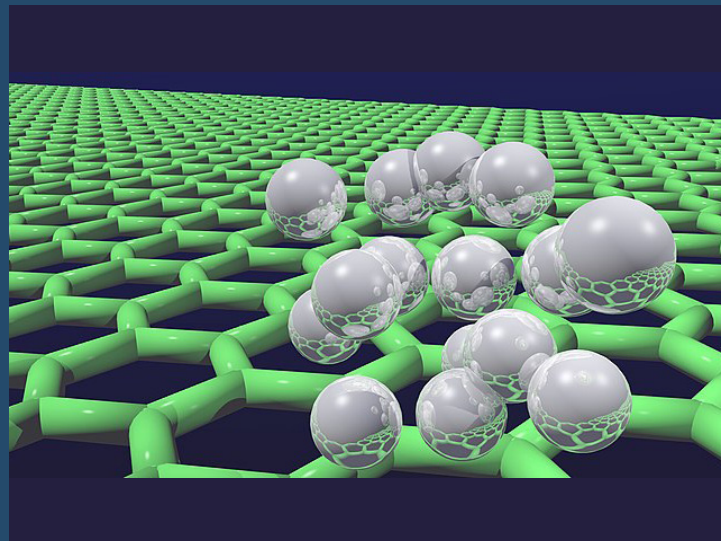


If we were to compare the elements even more deeply, we would see that Nitrogen and Oxygen are composed of the same three ingredients: protons, neutrons and electrons. If we delve down further, we will find out that protons and neutrons are composed of quarks. Thus, it does not make sense to think that these simple components decided to come together to produce such an amazing filtration system for living beings. Indeed, these components have no idea that we are the beneficiaries of their apparent acts. Furthermore, if we were to study the actual properties of particles, we would understand that they cannot be attributed to their physical causes.

Therefore, some scientists prefer to call them "emergent properties" meaning that they just emerge with certain occurrences. Though they are associated with certain causes, they cannot be attributed to their apparent causes because

the causes themselves do not have the necessary properties to generate their effects. Indeed, if we accept the principles of quantum mechanics, we would have to agree that all material causes and effects are constantly being created at every moment. In other words, the Earth's atmosphere is constantly being created although we perceive it as being constant.

In short, it does not make any sense to claim that our elegant atmosphere exists by itself, through natural laws, or through material causation. If so, then how did it emerge? Let us seek the hidden reality behind the atmosphere in the next dimension.





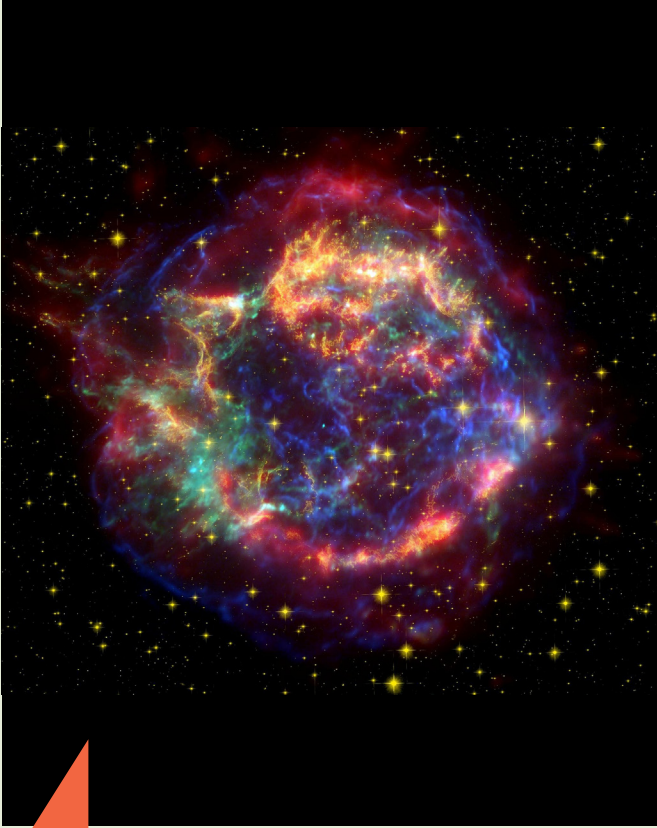
Fourth Dimension : Meditative Thinking

REFLECTING ON THE ATTRIBUTES OF THE MAKER

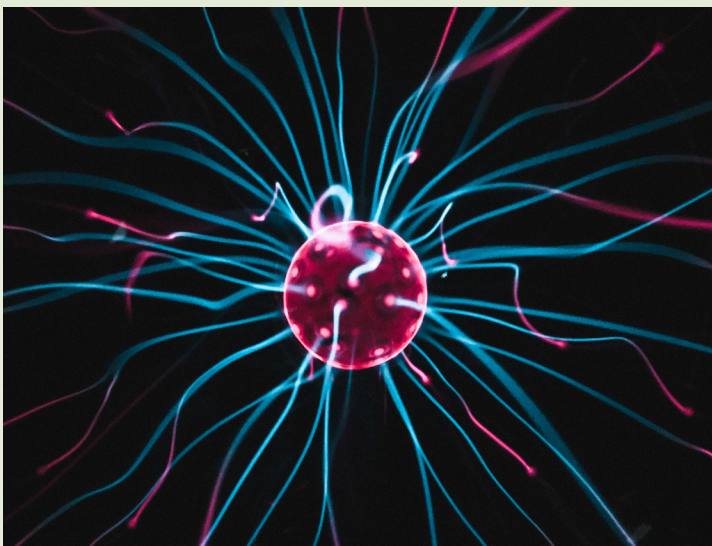
Given our limited knowledge of the manufacture of air filters, we know that the Maker of the atmosphere must have considerably more knowledge and power than what we possess as human beings. Our experience in making air filtration devices makes it easier for us to understand the Maker of the Earth's giant filter, the atmosphere. If we look closely at the constituents of atmospheric gases, we will see that the elements hydrogen and oxygen are found in hundreds of thousands of different combinations in the atmosphere; therefore, we need to conclude that they are being employed and set to work in the utmost orderliness by a hand of wise creator. When we compare the atmosphere with a man-made air filters, we will quickly realize that the Maker of the

atmosphere must be the Maker of all its precisely proportioned elements. He must be the Maker of sub-atomic particles for Him to know how to form particular elements from basic components such as electrons, protons, neutrons, and quarks.

He must be the Maker of the entire micro cosmos within an atom to create and sustain the basic components of elements. He must be the Maker of the macro cosmos as well, since He knows how to connect giant celestial bodies together through gravity. He must be the Maker of the sun, since He knows how to design the atmosphere as a perfect filter to prevent harmful solar radiation. He must be the Maker of gravity to know how to suspend the atmosphere above the Earth. He must be



Did you know that the iron found in the inner core of the Earth is the product of a supernova explosion?



In short, it is evident that the Maker of the atmosphere is the Maker of our whole body. He is also the Maker of the world around us and the Maker of the universe. The Maker of the atmosphere can only be the Giver of life and of experience. This means that the Maker of the atmosphere could only be the One with infinite power, knowledge, wisdom and mercy.

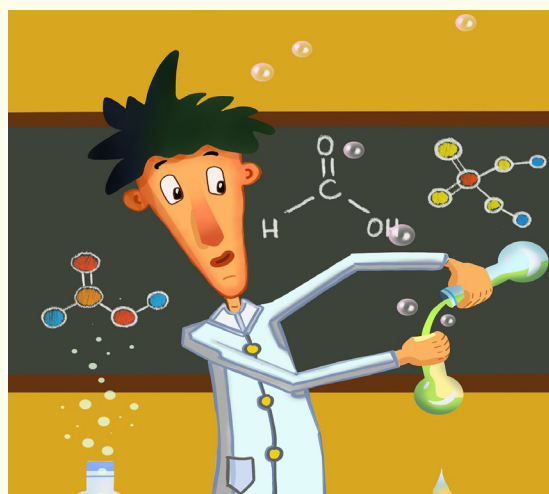
Indeed, the Maker of the atmosphere must have the infinite knowledge, wisdom and power to create it and maintain the intricate balance of molecules within its layers. He must know our needs for the atmosphere's gases, heat retention capabilities and protective properties. He must be very kind and generous in giving us such a precious gift. Indeed, since no power can be above the Infinite Power, He could not be forced to create the atmosphere for our survival.

What else can we learn about the Maker of the atmosphere? If we carefully study the components of the atmosphere, we will realize that each particle acts like an educated scientist and disciplined soldier fulfilling amazing tasks every day. However, the particles neither have consciousness nor knowledge. Based on our knowledge of quantum physics, all the particles and waves in the atmosphere are not stable. Instead, they are like bubbles coming into existence for a very short period of time and then disappearing to the darkness of nonexistence. In other words, at every second we receive a new atmosphere. We owe our life to the constant creation of the atmosphere.

The atmosphere works like a giant screen on which the creative acts of our Maker are being shown in every moment. Yes, it is true that without a screen, we cannot enjoy a show. However, it is wrong to attribute a great movie to the screen. Similarly, it is wrong to study the screen-like atmosphere and claim that the extremely beneficial outcomes come from that fragile structure. Instead, it makes more sense to know that both the atmosphere and its associated outcomes come from the One with infinite knowledge, wisdom and power. Thus, the more we study and learn about the atmosphere and realize how it connects to everything else, the more we shall know about the attributes of its Maker.

Indeed, if we carefully connect the dots, we will see that the Maker of the atmosphere is communicating to us through His creative acts of making and sustaining the atmosphere. He peaks through His acts that **He is All-Knowing, All-Wise, All-Powerful, Most-Merciful, Most-Kind, True Protector.**

The secular interpretation of science cuts off the connection between the atmosphere and its Maker through fancy concepts and misleading theories. Thus, we should be careful in our scientific studies, when explaining certain phenomena, from falling into the trap of giving certain phenomena self-limiting labels and simple explanations, such as "UV rays of different wavelengths exert different effects", for example.



If we fall into the habit of observing phenomena without looking for their deeper meanings, we might soon start to feel that they simply act by themselves. We acquire the habit of assuming that they will always act or exist a certain way; so, there is no need to look for what is behind them- at what is hidden from view. Normally, when a scientific discovery or phenomenon (like ultraviolet light) is expressed using a single term or expression, its meaning is transferred as a complete idea into our mind, requiring no further explanation. By assigning simple labels, names or expressions for worldly phenomena, scientists often inadvertently conceal the truth and the wisdom that lie beyond them, by the act of installing a small and simple curtain over miraculous work. Many scientists explain various phenomena on the basis of unconscious forces, mere coincidences and fictitious nature. Let us now concentrate on how we can overcome this common trap by reflecting more on the gifts of miraculous phenomena.

Fifth Dimension : Moral Thinking

RESPONDING WITH BETTER CHARACTER

Can you imagine a world where sound has no medium to travel in? What if the air were not retained through the atmosphere? There would not be enough gas molecules to transfer sound vibrations.

In such a scenario, we would not have the ability to communicate with one another or with the world around us. For a moment, try to imagine a world of complete silence. How could we possibly assess possible sources of danger, hear the incredible sounds of nature, or experience the beauty and magnificence of language without the sound-carrying properties of the atmosphere? Indeed, the atmosphere is a great gift that allows us to communicate with each other. It is also a platform through which we can exchange sound and images through long distances. The atmosphere is also designed to prevent most of the electromagnetic spectrum from reaching us. However, it is designed to facilitate our telephone communication by allowing short wave radio to travel around the world.

Reflection Question:

- How could we possibly assess possible sources of danger, hear the incredible sounds of nature, or experience the beauty and magnificence of language without the sound-carrying properties of the atmosphere?



The atmosphere is an elegant ceiling for our vocational house called Planet Earth. We are constantly being protected from harmful objects and radiation from space by the design of the atmosphere. Unlike the roofs over our homes, this giant ceiling is extremely high above and very transparent. It is embellished with the light of billions of stars in the night and the rays of the sun in the daytime. It keeps us warm through the retention of heat. The atmosphere is also designed to allow us to enjoy the great gift of air travel through it. Indeed, we ride on the air not airplane.

The atmosphere is designed to house another remarkable gift- the water cycling system. In the atmosphere, water droplets are constantly being retained in cloud formations and returned to us as precipitation. Indeed, the atmosphere works like a giant water transportation system carrying water from the oceans to the land.

Without water, that makes up 60% of our bodies and 71% of the planet, we would not exist. Even a small fault in the intricate

balance of the Water Cycle would result in the planet experiencing extremes of temperature, droughts and flooding. In fact, most climate experts today would argue that due to human greed, industrial pollution and mass farming practices, the planet is already experiencing serious levels of climate change.

As discussed before, it is beyond our knowledge and power to come up with another atmosphere if our present one was destroyed. Even if all the scientists in the world pooled their resources and knowledge together, they would not be able to recreate the atmosphere.

“The Planet Earth is a Gift”

What If the Earth's Crust Suddenly Opened Up?



<https://youtu.be/F6jR4mQtarE>

“We should offer sincere appreciation for these precious gifts. Indeed, we should thank the Maker of the atmosphere. How do we do this?”

1. Remembrance is realizing that there is a Creator of the Atmosphere.

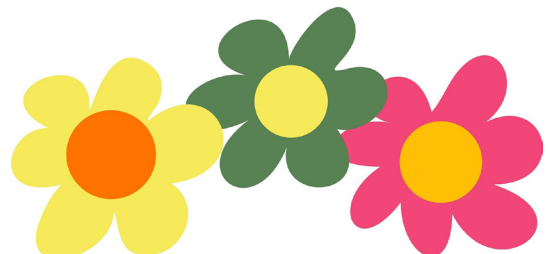
2. Reflection is thinking of our priceless, miraculous Atmosphere as a gift of our Creator’s mercy.

3. Gratitude is being thankful to the Creator for bestowing upon us an atmosphere that we can breathe, speak, keep warm and stay safe in.

We were given the atmosphere to survive here on Earth. The gifts housed within the atmosphere are beyond what the brain can comprehend. Our ability to breathe right now, unassisted, in addition to our ability to hear the sounds in the air around us, feel the sensation of the air on our skin and drink (and bathe in) clean, liquid water are all gifts bestowed upon us by The One who created the atmosphere. If so, should not we offer sincere appreciation for these precious gifts? Indeed, we should thank the Maker of the atmosphere. How do we do this?

He does not need payment. Everything in this planet, Solar System and universe belongs to Him. He wants us to be mindful of Him as we appreciate the precious gift of the atmosphere through remembrance, reflection, and gratitude.

Thank You



for your Kindness

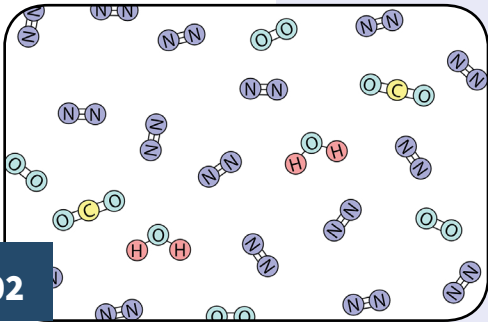
**Let us consider what steps you
can take to remember, reflect,
and be grateful:**

01



1. *Become aware of the sheer magnificence of the atmosphere and of who created it. Reflect on the atmosphere's properties and functions, and on the intricate balance among all its parts. Be curious like a child. Ask questions, conduct research and educate yourself and others to better appreciate this precious gift. The more you become thoughtful of His gift, the more you will be thankful.*

02



2. *Just try to hold your breath for a moment! You will realize that it is not possible to live without oxygen for even a few minutes. Thus, the atmosphere with its vital oxygen is infinitely valuable to us. The Maker of the atmosphere clearly shows His care and love by providing this gift for free.*

03



3. *As we study the atmosphere, we realize how dependent we are. We have to rely on countless other beings to live. We share many things- such as the atmosphere- with others. Thus, within our families and social circles, we should help each other. We should share what we have with those we care about.*



04

4. Just as you treasure, not trash, the great gifts given to you, you should also treasure the atmosphere through thoughtful activities. One way to keep the air clean around you is by reducing your reliance on artificial chemicals in your home. As much as possible, try to use cleaning and self-care products that are friendly to the environment and use natural substances whenever possible.

Keeping indoor plants in your living space is a healthy choice to make as indoor plants have been designed to clean the atmosphere from pollutants. If your family is unaware of the impact of chemical cleaning and self-care products on your health and on the health of the planet, make it a point to discuss making small but meaningful changes.



05

5. If you care about keeping the atmosphere clean, reduce your reliance on cars. Walk or use a bicycle to travel small distances and use public transportation (or car pool) when necessary. Pollution from the burning of fossil fuels is a major contributor to poor air quality and climate change.



06

6. Give back to the less fortunate by sharing the sustenance provided to you by the Most Generous. If you are given a clean source of drinking water, remember others who do not have this luxury. Sixty per cent of human beings on the planet still do not have access to clean running water. Being aware of this astonishing fact makes you immediately grateful to be part of the percentage of people who do have the luxury of modern sanitation facilities and clean drinking water. Use your gifts carefully.

TEST YOUR KNOWLEDGE

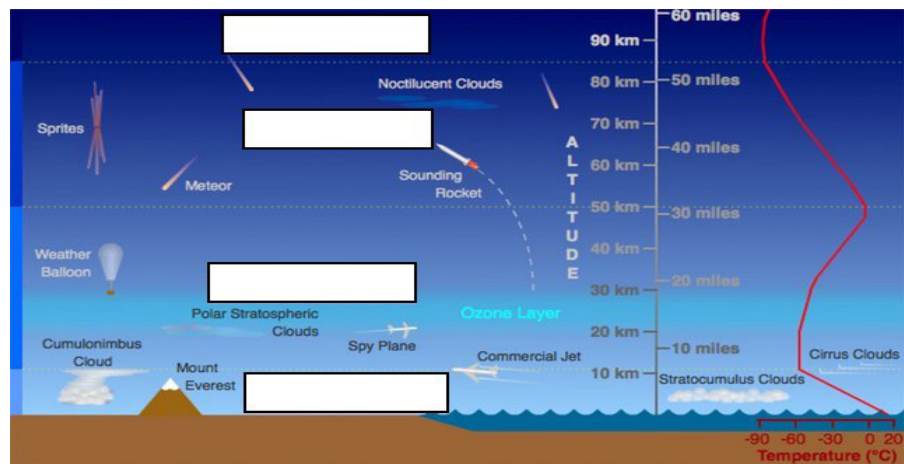
I. UNDERSTANDING SCIENCE TERMS

Complete the following sentences with a word or words from the Science Terms that will make the sentence correct.

Ionosphere Thermosphere Exosphere Stratosphere Mesosphere Magnetosphere Troposphere

1. The _____ is the space around the Earth made up by the Earth's magnetic field.
2. The region that is charged by cosmic radiation and radiation from the sun is known as the _____.
3. The outermost layer of the atmosphere is called the _____.
4. Meteors in the _____ burn up as they fly through a mixture of gases.
5. The _____ is found between the exosphere and the mesosphere.
6. The _____ is the layer in which gases are layered according to their respective masses.
7. The layer of the atmosphere closest to the planet's surface is known as the _____.

Label the following diagram:



II. CHECKING FACTS

Determine whether each of the following is true or false.

1. The air is primarily composed of a combination of carbon and oxygen. _____
2. A thin contrail that disappears quickly means that there is very little humidity in the sky. _____
3. The shorter the wavelength of a light ray, the less energy it radiates. _____
4. The atomic nature of nitrogen and oxygen are very similar. _____
5. The atmosphere is to determine whether a wavelength of light is harmful or harmless to the living beings on our planet. _____
6. The properties of air molecules in the atmosphere results in its properties of being a shield for the Earth. _____



III. UNDERSTANDING CONCEPTS

Write a short answer for each question or statement.

1. Which layer of the atmosphere is home to the International Space Station?

2. Which layer of the atmosphere houses the ozone layer?

3. List two raw materials that are used to construct an air purifier.

4. How do you know that there is a Hidden Hand behind the formation and maintenance of the atmosphere (connecting the atmosphere to its Maker)?

5. List two hidden messages in the atmosphere from its Maker (communication through creative acts).

6. Why is it necessary to assume that air particles have consciousness if they are the true cause of the atmosphere?



IV. APPLYING CONCEPTS

Write a paragraph to answer each question.

1. How is the design of the atmosphere different from that of a man-made filter?

2. Describe how your life would be different if the ozone layer was severely damaged?

3. Why do you think nature or material causes such as electrons, protons or neutrons could not create the atmosphere?

4. The One who creates the atmosphere has to be the Creator of the Earth. Why?

5. Why do you think the atmosphere is an extremely valuable gift? Describe two things which make you appreciate the value of this gift.



6. How can you show your gratitude to the One who granted you the gift of the atmosphere?

V. THINK-THANK GAME

In this “think-thank” game, we want you to think about the atmosphere and give thanks to its Maker. We also call it the “play to praise” game. The goal of this game is to think of at least five things about the Earth atmosphere that you are thankful for.

Number of players:

At least two.

Directions:

Player 1 repeats an appreciation phrase loudly and quickly. Player 2 responds, without pausing, with something to be thankful for. This is repeated five times.

To win:

Player 2 needs to respond five times (without pausing) with different things about the Earth atmosphere to be thankful for in order to win the game.

Here is an example of two rounds of this game:

1. Player 1 repeats the appreciation phrase loudly and quickly. For example: “Thanks to the Maker of the atmosphere “
2. Player 2 responds, without pausing, with something about the Earth to be thankful for. For example: “For making a shield to protect us from harmful UV!”
3. Player 1 repeats the appreciation phrase again loudly and quickly. For example: “Thanks to the Maker of the atmosphere!”
4. Player 2 responds, without pausing, with another thing about the Earth to be thankful for. For example: “For keeping right amount of oxygen for us to breath!”

This should be continued for another three rounds until Player 2 wins or loses.