

# Story of Life on Earth

Research & Write-up  
English Translation

Dr Anurag Sharma  
Sharmeen Khan

Vasudha	Come on now all three of you, get up! Vivek!!! Vivek, what's the matter, today you are sleeping so late. If you sleep like this than your younger brother and sister will also keep on sleeping. Get up...
Vivek	Mummy, I am awake, but I feel like not getting up on Sundays. Hey, Manav, Srishti get up.
Srishti & Manav	Let us sleep, bhaiya.
Vivek	Just wait I will sprinkle water on you both.
Srishti & Manav	(laughing—together) No, no, bhaiya we are awake.
Vivek	Go and greet mummy and papa, go.
Suryaprakash	(all three greet their father) That's great, all three are awake. Vivek, there was no water again in the morning, just go and find out.
Vivek	Okay papa.
Srishti	Ohh!! What's that bad smell?
Manav	Yes mummy, this bad smell is very intense.
Vasudha	(getting irritated) I don't know the sweeper has also not come to pick up the garbage. Vivek, son just find out about the sweeper also.
Vivek	Look Srishti, yesterday the sweeper did not come, so the garbage has been lying for two days and is now stinking, do you understand?
Srishti	(thinking) Yes bhaiya, you had said that there is a limit to which the earth can hold things.
Suryaprakash	Very good Srishti! Vivek taught you something good.
Manav	But what has earth's tolerance limit got to do with our garbage?

Srishti	See, that is why he did not tell you, you understand little and speak too much.
Vivek	For instance, we are going on increasing the amount of garbage. There will come a time when the earth will run out of ways to dispose it...what happens then?
Srishti	(closing her nose) Ohh...everywhere dirty odour!
Vivek	Very good, did you understand Manav! (laughing)
Vasudha	Come on, first think about getting rid of the dirty odour in our house, then think of the earth's dirty odour.
Vivek	Come on, you two brush your teeth, then we will go out to dispose off the garbage. Come on!! (sound of scene change)
Vivek	Mummy we are taking this garbage in the bag.
Manav	Oh, such dirty smell!!! I am not going, the garbage dump would be stinking.
Vivek	Very god, Manav! You create the garbage and somebody else will clean it up for you? Come on get going fast.
Manav	Srishti, you always stay with Vivek bhaiya, but okay I will accompany you lest something happens to you.
Srishti	Yes, yes! Even when Vivek bhaiya is with me, you will protect me. You yourself will cling to Vivek bhaiya all the way lest the dog bite you. Come on get going now.  (All three depart laughing)
Suryaprakash	Vasudha, I feel very satisfied seeing the love and understanding between these three.
Vasudha	Vivek is very mature, along with his studies he takes good care of his brother and sister. He teaches them new things.
Suryaprakash	Yes, Manav is a little naughty, but Srishti is very mature. Before the three of them come, get the breakfast ready.

Vasudha	That is ready, but you go and take your bath. (change of scene)
Manav	(afraid) Vivek bhaiya, that dog is looking straight at me.
Vivek	Hey Manav! It is looking at you but at the garbage bag. Don't be afraid, just keep walking straight ahead.
Srishti	Vivek bhaiya, is it true that one day the entire earth will be full of garbage?
Vivek	Srishti, judging by today's situation it looks possible. We have already started tinkering with the earth's delicate balance.
Manav	(afraid) Vivek bhaiya, the dog is still looking here.
Srishti	Oh, Manav, keep quiet. If it is looking at you, you also look at it. Yes, bhaiya, what does earth's delicate balance mean?
Vivek	Look Srishti. The sun rises everyday and we get energy and light from the sun. With help from the sun's light, water, carbon dioxide and chlorophyll plants prepare their food.
Srishti	Yes, yes, bhaiya, I know all this. It is known as photosynthesis and plants convert the carbon dioxide into oxygen and release it into the atmosphere. This happens daily, what is so special about it.
Manav	(afraid) Vivek bhaiya, now the dog is following us. This definitely is special.
Vivek	Manav, I told you look ahead, forget about the dog. Yes, Srishti, all this <i>is</i> special. We give out carbon dioxide which is of use for plants and they give us oxygen. This means our lives are dependent on one another. Now just think, when all life forms help each other then every living being must be very important.
Srishti	Yes bhaiya, that is true. Our teacher told us that even microorganisms are also very important.
Vivek	That's right. These microorganisms make the soil fertile. They suck nitrogen from the air and make it usable for plants, then plants are eaten by animals. We also eat fruits, vegetables etc. These animals

	are then eaten up by carnivorous animals and when they die all the nutrients return back to the soil, and these nutrients are once again broken down by the microorganisms and made usable for the plants.
Srishti	Yes bhaiya, that is true. These microorganisms are also helping in decomposing all this garbage.
Vivek	Yes, Srishti, very right.
Manav	Vivek bhaiya, if the microorganisms are already doing their job, then why do we have to throw this garbage so far, let's leave it here. Some of it will be useful for the microorganisms and some for these dogs who are walking behind us in a queue. (afraid) Bhaiya, now there are...six dogs, and this black one barks at me daily.
Srishti	But you also throw stones at it while coming back from school.
Vivek	Look Manav. If you irritate someone then he will also teach you a lesson. And this is true for the earth as well.
Manav	(laughing) Does this mean that if we throw this garbage on this earth it will also throw garbage at us?
Vivek	That's true, all these new diseases, earthquakes, storms, tornadoes etc are all earth's angry responses.
Srishti	But Vivek bhaiya, all this has been going on since ages. Not because of dumping of garbage by us. Besides, the garbage has not come from somewhere outside, it has been generated on the earth itself.
Vivek	Okay, all this garbage is returned back to the soil by the microorganisms but there is a limit to which this can happen. For instance, it takes more than 100 hundred years for microorganisms such as pseudomonas to decompose plastic. But we are piling up so much garbage daily that the microorganisms are unable to finish decomposing them, and that is why dangerous garbage is just piling up.

Srishti	Meaning before one pile of garbage is finished another pile is added. Obviously despite the microorganisms working hard it will keep on piling. Isn't it bhaiya?
Vivek	Very true, Srishti. Once you understand how the earth came into being, how the atmosphere was formed then you will yourself know how this garbage is disturbing the delicate balance of nature.
Srishti	Wow, Vivek bhaiya, your story will be really interesting. Here! We have reached the garbage dump.
Manav	Bhaiya, throw this garbage immediately into the dump, these dogs are just about to jump at us.
Vivek	Manav, on the one hand you have captured these dogs' home and on top of that you throw stones at them. Give me the garbage.
Manav	(amazed) But bhaiya this home is papa's.
Srishti	Stupid. Before papa and grandfather there was a jungle only where all these animals used to stay. Now that we have constructed our home where will these dogs go?
Vivek	Very good Srishti. You are the first to get an idea of the disturbed balance of nature. Now let's go home, we will discuss about it there.
Srishti	Vivek bhaiya, shall we race up to our home?
Vivek	Yes come on, one, two...
Manav	(shouting in between) No bhaiya, I am younger, and both of you run fast, what if the dogs start chasing us?
Vivek	(laughing) No, no Manav, you keep throwing stones at them. Me and Srishti are going. Come on Srishti, one two, three... (Laugh—sound of running)
Manav	Bhaiya, Srihsti, stop, I am also coming. (sound of dogs barking) (sound of scene change) (sound of Srishti and Vivek laughing)

Vasudha	(laughing) What happened, what was did you find so funny in dumping garbage? And where is Manav?
Manav	(in complaining tone) Mummy, Vivek bhaiya and Srishti left in the midst of the dangerous dogs and ran away.
Vivek	(laughing) No mummy, he hits them daily. The dog didn't trouble us, just made Manav run for some distance.
Srishti	Yes mummy. Otherwise also manav is getting too fat, some running will only do him good. (laugh)
Suryaprakash	Vivek and Srishti, you both left your younger brother alone, this is wrong.
Vivek	No papa, how can I ever leave Manav alone? I just wanted him to get rid of the fear of dogs. I want him to love all animals, but he remains in a world of his own.
Suryaprakash	Manav, you must listen to what Vivek bhaiya says. Come on now take a bath and eat your breakfast.
Vivek, Srishti, Manav	(together) Okay. (scene change)
Srishti	Okay, Vivek bhaiya, now that we have had our breakfast and are now back in our room, now tell me about the coincidence related to nature. Did everything happen by coincidence?
Manav	Coincidence?...What does coincidence mean?
Srishti	Oh...well, it is just a coincidence that a stupid like you was born in our home.
Manav	Mummy, mummy...Srishti is irritating me again.
Srishti	Okay, for example it is a coincidence that today morning the sweeper did not come and we had to go to dump the garbage, and we got to listen to so many new facts from Vivek bhaiya and finally dogs chased you. All this is coincidence.
Vivek	(laughing) Yes, some events happen by coincidence, but the dogs did not chase Manav by coincidence. He used to irritate them, that

	is why they cornered him today. (laughing)
Srishti	Okay, Vivek bhaiya, now tell me about the coincidences related to earth.
Vivek	Okay, let me tell you. But first Srishti and Manav tell me what is the distance between the sun and the earth?
Manav	(thinking) Vivek bhaiya, the sun is near Chintu's house, because the sun is visible but Chintu's house is not visible.
Srishti	(laughing) Look Manav, now you will again ask how your being born into this house is a coincidence. You keep going to Chintu's house with bhaiya on his motorcycle, but have you ever gone near the sun?
Manav	No, never, but I will definitely go.
Srishti	(laughing) When you go do let us know. Okay Vivek bhaiya, the distance between the sun and the earth is about 14 crore and 96 lakh kilometers.
Vivek	Very good, Srishti. Did you see, Manav, how far the sun is? But Srishti have you ever thought how this distance of 14 crore and 96 lakh kilometers from the sun is appropriate. It is due to this that the third planet from the sun, that is, earth became suitable for life. But if this distance had been less or more what would have happened?
Srishti	Vivek bhaiya, if we were not the third planet from the sun but the fourth, that is, at the distance of Mars then our earth would have been so cold that everything would have frozen.
Vivek	Very good, and if we had been close?
Srishti	Then just like the second planet Venus our earth's temperature would have been more than 500 degrees Celsius and everything would have been burnt and destroyed.
Vivek	Very good. So you also agree that the present distance from the

	sun is just right for life to prosper.
Srishti	Absolutely.
Manav	Yes bhaiya, I also feel like that.
Srishti	Well, it is good that Manav at least agrees with me on this.
Vivek	So Srishti, this distance is just a coincidence, had it been slightly here or there it would have been difficult for life to prosper. That is why until now we have not been able to find life on any other planet.
Manav	Yes, I had not thought about this. Vivek bhaiya, what else happened due to a coincidence?
Vivek	Manav, you know that our earth is tilted at an angle.
Srishti	Yes, Vivek bhaiya, that is why we have various climates and seasons.
Vivek	Yes, also different forms of life, that is, biodiversity. But have you ever wondered that the cloak of gases enveloping the earth, that is, the atmosphere is held on with a delicate balance and coincidence.
Srishti	Atmosphere, how?
Vivek	Look Srishti, the atmosphere is composed of 78.08 percent nitrogen. 20.95 percent oxygen, 0.03 percent carbon dioxide and almost 0.96 percent other gases. The proportion of these gases is just right for all forms of life to prosper.
Manav	That is true, otherwise everything would have been finished.
Srishti	Okay, at least you agree that if these gases had not been present in this amount then there would have been no life.
Vivek	So Srishti, this <i>is</i> a coincidence. Now look, how important oxygen is for us. It provides energy to our tissues. It is by digesting the food that we eat that we get energy. But what would happen if the percentage of oxygen becomes more than 21?
Srishti	Then Vivek bhaiya, there would be lots of disturbances in our tissues. All their functions would come to a stop. Isn't it!

Manav	Bhaiya, how can oxygen harm us? Everybody is asking for oxygen all the time.
Vivek	Look Manav, water is H <sub>2</sub> O, which means water has two hydrogen atoms and one oxygen atom. If there are two oxygen atoms it becomes H <sub>2</sub> O <sub>2</sub> , that is, hydrogen peroxide, it does not remain water. We clean our ears with H <sub>2</sub> O <sub>2</sub> . Similarly, in the tissues a specific amount of oxygen functions optimally—neither less nor more.
Srishti	Did you hear? Now listen carefully. Okay Vivek bhaiya what will happen if the quantity of oxygen reduces?
Vivek	If the amount of oxygen reduces below 20 percent then we will face difficulty in breathing. All our metabolic activities will come to a standstill and once energy is not available life will be wiped out.
Manav	But bhaiya, abundance of oxygen is not harmful.
Suryaprakash	(entering) Manav, when Vivek is telling you why don't you agree? You are in fourth class and Vivek is in college, so there will be some difference in the level of knowledge.
Vivek	Papa, that is the problem with Manav, he doesn't agree. Okay Manav, now listen with your mouth shut.
Suryaprakash	Son, oxygen is a very inflammable gas. If its quantity increases then all jungles will burst into flames—there will be fire everywhere. Understand?
Srishti	Papa, he will definitely listen to you, you also sit here.
Suryaprakash	(laughing) No, no, son, you listen to Vivek, he is able to explain more clearly than me. Okay the three of carry on, and Manav, listen carefully. (departs)
Srishti	Okay bhaiya, now tell.
Vivek	Yes, so similarly the fact that 78.08 percent of nitrogen is found in

	the atmosphere seems appropriate because at this percentage nitrogen is able to counter the inflammable characteristics of oxygen.
Srishti	Vivek bhaiya, this percentage of gases in the atmosphere is also useful for photosynthesis in plants, isn't it?
Vivek	Yes Srishti, the delicate balance of nature means that every object in some form or the other is working towards maintaining life.
Srishti	Vivek bhaiya, is the amount of carbon dioxide also okay?
Vivek	Yes, why not? Carbon dioxide is also necessary for life. The quantity of this gas is also appropriate because at this proportion it prevents the energy of the earth from getting lost, in other words carbon dioxide helps maintain an optimum temperature suitable for life.
Srishti	But what happens if the level of carbon dioxide increases?
Vivek	Then this whole world will start getting warm, the temperature will increase so much that it will be difficult for life to survive.
Srishti	Which means global warming, isn't it?
Vivek	Absolutely right.
Manav	But Vivek bhaiya, this carbon dioxide is okay for plants.
Vivek	Yes, that is right, but increased levels will trouble them also. As you know, plants continuously convert carbon dioxide to oxygen, almost 190 billion tones daily. Now if the oxygen-using, carbon dioxide producing animals perish then how will plants be able to make their food?
Srishti	(amazed) 190 billion tonnes of oxygen every day!! One can easily make out the immense benefits that plants are bestowing on us.
Vivek	Yes Srishti, the level of all these gases remains constant based on their interactions and in this manner life prospers.
Manav	Bhaiya, what were the other coincidences that made life on earth possible.

Srishti	Then were born people like you who are enemies of life, sometimes killing ants and insects and sometimes troubling birds and dogs. Such people have been born now only, not earlier. (laugh)
Vivek	Yes Manav, apart from the gases in the atmosphere the shape of the earth is also very appropriate. Okay tell me Manav if the shape of earth or its mass had been more than the present then what would have happened?
Manav	Meaning if the earth had been bigger, isn't it?
Srishti	Yes, yes.
Manav	If the earth were bigger it would have been good. We would have got more space to throw garbage. Isn't it, bhaiya?
Vivek	(laughing) Oh, Manav, move out of the mould of the garbage and think. If the earth's mass had been slightly less then it would have had lesser gravitational attraction too and due to the lack of this attractive force the entire atmosphere enveloping the earth at present would have just spilled out into space.
Srishti	And if there is no atmosphere then there is question of life?
Vivek	Yes, and if this mass had been more or the earth had been a little more bigger then all the gases would have got concentrated on the earth making breathing impossible, then would have been no Manav to dump the garbage.
Srishti	Bhaiya, if the force of gravitation had been less then water would also have been lost into space.
Vivek	Yes Srishti, do you know during the last 10,000 years the amount of water on the earth has been constant. Which means some water is trapped in ice and some in clouds and lots of it in the oceans. But even then the quantity of water has not changed even by a drop.
Manav	What are you saying, bhaiya? There is no water at home and you are saying that the quantity of water has not changed.

Vivek	That's it, it is one of the wonders wrought by man. Of the total amount of water coming down on the earth as precipitation, 40 percent is through rainfall and it is our misfortune that we are able to save only one or two percent of this water. The rest of the water flows down into the seas. Understand?
Srishti	Yes, that is why water harvesting is being undertaken.
Manav	What does water harvesting mean?
Srishti	Saving the rain water.
Vivek	Okay now listen. Similarly, if the surface of the earth had been thicker it would have absorbed more oxygen from the atmosphere and had it been thinner then volcanoes would be erupting continuously and there would have been so frequent earthquakes that it would have been difficult to live. (laughing)
Vasudha	Vivek, where has your story about the delicate balance of the earth reached?
Manav	And of coincidences also.
Srishti	Mummy, bhaiya was just telling what would have happened if the earth's surface had been thicker.
Suryaprakash	There would have been lots of damage. It is just right the way it is. Vivek tell them about ozone.
Vivek	Papa, I was just about to tell them.
Manav	What is ozone, papa?
Suryaprakash	Okay, then sit with me also for some time. (sound of cups and plates)
Vasudha	Here, take tea, and Manav here's your milk.
Suryaprakash	So, Manav. One more important example of delicate balance is the level of ozone in the atmosphere, which is also known as earth's umbrella. If the quantity of ozone had been more than the present then the earth's temperature would have been very less and if the

	quantity had been less then the earth's temperature would have been more and also more of ultraviolet rays would have struck the earth.
Manav	The atmosphere is very useful.
Vivek	(laughing) Yes Manav, when the sun's rays pass through the layers of the atmosphere, it absorbs the dangerous rays and excess energy.
Srishti	By which the temperature of the earth is maintained and there is not threat to life too.
Vasudha	Very good Srishti. It seems you have understood the information given by Vivek bhaiya very well. Very god!
Srishti	Yes mummy, our entire life is dependent on this delicate balance of nature where every system is linked to the other. We have got this earth by such a coincidence. We need to recognize this fact and with all the respect for our earth try to save it.
Srishti	Wow, our Srishti has become so intelligent in just the ninth class.
Suryaprakash	Yes, the entire life is dependent on mutual love and cooperation.
Vasudha	Manav, why are you not drinking the milk?
Suryaprakash	Hey, where are you going with the glass of milk Manav? Manav, he is not listening to anyone?
Srishti	Papa, just watch from the window what Manav is doing.
Vasudha	Hey, he is giving the whole milk to that black dog. Hey, get back...it will bite.
Vivek	Let it be mummy, today Manav has learnt a lot.
Suryaprakash	Vivek, congratulations, today Manav has learnt the true meaning of life, love and mutual understanding. Come on, Vivek, bring him up. It's good that Manav has learnt the importance of other animals.
Vasudha	Manav!! Come up, son.
Manav	Mummy I am not afraid of dogs. Just like us they are also life

	forms on this earth and a part of this delicate balance. Now, if we have captured their living space we can at least give them milk to drink. Ask bhaiya to bring some more milk, there are many dogs here.
Vivek	Hey Manav, how much milk will you give them, come up, they have become your friends now.
Manav	Okay bhaiya, but please come down, these dogs are not leaving the glass, I am afraid to snatch it from them. Bhaiya...
Vivek	There goes, he is again afraid, this Manav...mummy I will just go and get him. (laugh)
Suryaprakash	Well, the fear will go away slowly, but Srishti, it is good that Manav has begun understanding the meaning of life.
Srishti	Life also, and its balance and coincidences also.

--End--