

## Episode-6

### Resources of Earth

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(Sound of water falling)

Vivek : (shouting) Manav don't waste water. Close the tap.

Manav : Bhaiya let me take my bath first. (irritatingly) Sometimes you say I should take bath properly and now you won't let me use water. How can I bathe properly without water.

Vivek : (Explaining patiently) Manav, I am not stopping you from taking a bath what I am telling you is that don't unnecessary waste water.

(sound of opening of latch and the door)

Manav : Now are you happy? And my wasting water is the only reason for all the draught.

Vasudha : Now stop it both of you and Vivek why are you lecturing him so early in the morning.

Suryaprakash : Arrey vivek is fulfilling his responsibility of being the big brother. Manav will learn from him only.

Vasudha : Okay...Okay, Now come and have breakfast and Manav do call Shrishti.

Manav : (Calling) Shrishti didi breakfast is ready.

Shrishti : (Calling from far) Coming....

(Sound of utensils)

Manav : Pakode Hmm.....with pudina chutney..hmmm.....wonderful mummy.

Vivek : (speaking while eating) Mummy you make the best Pakoda's in the world.

Manav : But today the pudina chutney is so hot give me water, Arrey mummy give me water.

Vasudha : Here son, water.

Vivek : Now you realize the importance of water.

Manav : What's to know? It is quite simple when we feel thirsty or eat something spicy we need water to drink.

Suryaprakash : But if you misuse it when you need water you won't have water to drink.

Shrishti : And if there is no water there won't be any life on the planet earth., no plants no us nothing will be there.

Manav : Meaning life on earth is solely due to water.

Vivek : Earth is the only planet on the solar system with life on it. One of the main reasons of this life on earth is the favorable environment and the presence of resources for sustenance of life on this earth.

Shrishti : And water is one of these resources. On earth only it is found in its liquid state.

Vivek : Correct.

Shrishti : Vivek Bhaiya, What are the other resources on the earth which are needed for life.

Vivek : You tell me.

Manav : Vivek Bhaiya. Should I tell?

Vivek : Yes, Yes... Manav, you tell.

Manav : Food.

(Everybody laughs)

Vivek : Manav is absolutely right though it is another matter that Manav is always thinking of food only and nothing else.

Shrishti : Oxygen is also very necessary for life is it not, Vivek Bhaiya?

Vivek : Yes, absolutely correct. But there is a process behind the origin of the oxygen.

Suryaprakash : All the resources needed for our survival is limited that is why we should use them with respect and value them.

Manav : Sure, and I think Pakode are also limited so intelligence lies in eating them as quickly as possible.

(Everybody laughs)

**(Music for Change of scene)**

- Manav : Vivek Bhaiya I am going to the park for a game of cricket. Will you come with me?
- Shrishti : Come Bhaiya, I'll also come for a walk. (Shouting)  
Mummy..... All of us are going to the park.
- Vivek : Okay lets go.....May be I'll meet Alok there.
- Shrishti : And may be Shweta didi too. (laughs)
- Manav : (calling) oye Bunty.....I've also come. I'll also play.
- Bunty : But Manav Shivi has not come as yet and ball is with him.
- Manav : Arrey yaar.....this shivi is such a.....Now what shall we do?
- Shrishti : Manav, Until your friends come you can join us for a walk
- Manav : Okay sure. But Bunty why hasn't Shivi come today.
- Bunty : His granpa is not feeling well. He is being given oxygen.
- Manav : Do you know Bunty oxygen is very essential for our survival and is present in appropriate percentage on our earth only.
- Shrishti : Very good Manav. Vivek Bhaiya what are the other resources needed for sustenance of life on this earth.
- Vivek : Look, Ability to produce food is only present on the earth. In presence of sunlight the green plants make food.
- Shrishti : And this process is called photosynthesis.
- Vivek : Absolutely right Shrishti.
- Sharma : It seems some serious discussion is going on children.
- Vivek : Namaskar Sharma Uncle.
- Shrishti, Manav, Bunty : Namaste Uncle.
- Sharma : Namaste children. What are you discussing today?
- Vivek : Uncle we are discussing the resources that are present on this earth and how they help in the sustenance of life.

Sharma : Very good. If you want I can also join you I may be able to give you some interesting inputs.

Vivek : Uncle you have just made my day. It will be so much more interesting and knowledgeable if you will explain everything.

Sharma : Let me start from the beginning. There are many systems which work in coordination to make life possible.

Manav : What are these systems Uncle?

Sharma : Land, atmosphere and oceans have a delicate balance between them which makes life possible.

Vivek : Meaning that all these systems are tied together with a thread or are linked and work together so that life can flourish on our planet. And if in any way this thread is broken due to our interference, life will be at risk.

Manav : Don't make me anxious. So Uncle you were saying.

Sharma : I'll start from photosynthesis. I think you were discussing that only when I joined you.

Shrishti : Yes, Uncle.

Sharma : So tell me what is what is the most important thing that is needed for the origin of life.

Manav : Food what else?

(Everybody laughs)

Shrishti : Uncle, Manav gives the same answer for all the questions.

(Everybody laughs again)

Vivek : I think it is water, Uncle.

Sharma : That is also true. But first comes energy, which are its availability and its use.

Bunty : My dadaji says milk gives us a lot of energy.

Sharma(laughs): Your dadaji is right, but here we are talking about the whole biosphere. Where does it get the energy from?

Vivek : From the sun.

Sharma : You are absolutely right Vivek. The main source of energy on earth comes from the radiation of the sun. Though earth gets its energy from an outer source that is the sun, it replenishes again and again.

Shristhi : In presence of sunlight only the green plants synthesise food.

Sharma : Very good. The interesting thing is that plants utilize only one percent of the radiation coming from the sun and this one percent is more than enough.

Manav : Uncle, how do these plants make food?

Sharma : See Manav green plants contain a pigment or color that is chlorophyll and have the ability to change the light energy coming from the sun into chemical energy in plants.

Vivek : And water plays a very important role in this process.

Sharma : You are 100 percent correct vivek.

Manav : (enthusiastically) and green plants besides food give us oxygen too.

Sharma You are absolutely right Manav. Manav I am really impressed. You definitely know a lot

Manav : (Proudly) I also know that mummy is going to make some sweets too.

(everybody laughs)

Vivek : Manav, don't take the discussion in another direction.

Sharma : It seems Manav wants to go home. Don't you Manav?

Vivek : Yes uncle I think we should make a move it is getting late. Thank you for the interesting inputs. Thank you Uncle.

Sharma : Okay children.

Shrishti : Bye Uncle.

(Music for change of scenes)

Vasudha : It took you long.

Manav : Sharma uncle was telling me that how plants make food with help of sunlight.

Vasudha : That must have been very insightful. He is Professor of Botany at the University. Do you know recently he had gone to France for a conference to deliver his lecture based on his research? He is also a good friend of Dr. Vishwas who was won the prestigious young scientist award for his his work on life science.

Shrishti : Daddy, Sharma uncle told us that in presence of sunlight plants make food. This process needs water and releases oxygen in the atmosphere.

Manav : And if oxygen is not released then what will happen?

Suryaprakash : There will be no life on this earth.

Vivek : I have read somewhere that before the origin of plants and photosynthesis there was no free oxygen available in the atmosphere.

Manav : So what does exactly oxygen do?

Shrishti : Arrey Manav we breath in oxygen and this oxygen binds with hemoglobin present in the red blood cells. These red blood cells transport the oxygen to various parts of our body.

Vivek : Oxygen is chemically very reactive and has the property to bind with almost all natural elements. This process of oxidation regulates the rate of metabolism.

Manav : You sound so bookish vivek Bhaiya.

(Everybody laughs)

(sound of door bell ringing)

Shrishti : I'll go and see.

(sond of door opening)

Shrishti : Oh Shweta didi. Hello.(shouting) Vivek bhaiya Shweta didi has come.

Vivek : Bring her here. Mummy is here only.

Shweta : Hello vivek.. Oh Hello Aunty. Actually our Vigyan Club is presenting a play "Earth my Home" and I have brought passes for Vivek, Shrishti and Manav. Here shrishti , here are the passes.

Shrishti : Oh Thank you didi. We'll definitely come Won't we vivek  
Bhaiya.

(Change of scene-music)

Shrishti : Manav hurry. It seems the play has started.

Shweta : Come shrishti, vivek. Shrishti do you know this is not exactly a  
play but a docudrama.

Vivek : Look there are some seats vacant at the very front let's sit there

Manav : Who is that man on the stage.

Shweta : He is the Sootradhar or the narrator who will take you through  
the whole story.

Narrator : Welcome everyone to the stage of "Earth my Home". Today  
mother earth will be telling you about herself and will be asking you  
some questions.

Earth : My dear children for so long I have been nurturing life and my  
uniqueness lies in life itself. But my powers and resources are not  
unlimited and my resources are recycled again and again for the  
sustenance of life.

Narrator : Would you all like to know more about mother earth?

Audience in unision : Yes.

Narrator : So I'll call Dr. Vishwas on stage who will be telling us about  
the resources available on our mother earth.

Dr. Vishwas : Today life is still possible on this planet because there is  
appropriate amount of water, minerals and gases in addition to the  
radiation of the sunrays.

Narrator : Children if you want you can also ask questions to Dr.  
Vishwas.

Shrishti : Manav You wanted to know about the resources of the earth so  
this is a very good opportunity for you to avail it.

Manav : Uncle, My name is Manav, please tell us in detail about the  
earth's resources.

Dr. vishwas : Children the resources of the earth have been mainly divided into two categories. First is the living resources and the second is the non-living resources.

Shrishti : Uncle the living resources are what we get from the plants and other living things, Are they not?

Dr. Vishwas : Yes, what is your name?

Shrishti : Shrishti, Uncle.

Dr. Vishwas : Yes shrishti, living things which include trees, shrubs, grasses etc. provide us with the living resources. And Manav can you tell me some examples of living resources.

Manav : Sure Uncle, Why not? One of the most important example of living resources is food.

Vivek : (laughs) For once you have struck bull's eye. Food fits here absolutely as an example of living resources.

Shrishti : Actually uncle, whenever someone asks Manav any question he gives the same answer that is food. It seems for once he is right.

Dr. Vishwas : So Manav you are right. Apart from food living resources provide us with the breathe of life that is oxygen..

Manav : Do we get something else apart from oxygen and food from the living resources.

Dr. Vishwas :Children we also get medicines from the plants and animals also.

Shrishti : Medicines that too from organisms!!!

Vivek : Shrishti,Though plants are the major source of medicines but modern medicines use a variety of medicines made by organisms.

Manav : I just hate the name of medicine they are so bitter yuck. Listen Uncle is telling something else.

Dr. Vishwas : Children Products derived from living resources are used as raw material in the industry which make them into consumables or things of our use.

Shrishti : Uncle I think the biggest contribution of living resources is that it makes our home that is planet eart so beautiful.

- Dr. Vishwas : You are right shrishti. There are many different types of plants, colorful butterflies, animals of different color, shape and sizes making this earth so very beautiful.
- Vivek : Shrishti, Uncle is right living resources has made this earth a beautiful and unique place.
- Manav : Uncle, it seems our life is wholly dependent on the living resources as they give us food and oxygen, which are necessary for life.
- Dr. Vishwas : you are right though living resources fulfill all our basic necessities. Our other necessities are fulfilled by the non-living resources.
- Manav : Which are the non-living resources and how are they important to us.
- Dr. Vishwas : Though the the list is long the main or important one are resources used for generating energy.
- Shrishti : Energy resources include fossil fuels such as coal, petroleum, and natural gases.
- Dr. Vishwas : Apart from the fossil fuels there are some renewable resources such as the hydro-electric energy, geothermal energy, wind energy, tidal energy which are also examples of non-living resources. We can't imagine industry and modern lifestyle without these energy resources.
- Vivek : Yes, Uncle-we can not imagine the big buildings without the non-living resources such as cement, iron, stones
- Manav : That means non-living resources are equally important to us.
- Dr. Vishwas : Children the non-living resources are not only necessary to make our life more comfortable but also for the sustenance of life.
- Manav : How is it so Uncle?
- Dr. Vishwas : Our body needs minerals for its proper functioning and these minerals are part of the non-living resources.
- Shrishti : Without these essential minerals our body will become weak or will die.

Dr. Vishwas : Children, different metals are also found from the earth which are very useful. Shrishti, can you name some metals

shrishti : Yse, yes, gold,silver,copper etc.

Manav : Today I've realized how much the earth gives to us.

Dr. Vishwas : Do you all want to know more about the resources of the earth?

Vivek : Do tell us about the chemical resources on which life is so dependent?

Dr. Vishwas : life is found in two different forms. Which are they

Shrishti : Plants and animals

Dr. Vishwas : Right, Animal and plants are both made of different chemical resources. these chemicals are found in both living and non-living resources.

Narrator : That is why the living are dependent on the non-living.

Dr. Vishwas : In all the living things carbon, hydrogen and oxygen is present in the major amount.

Narrator : And those elements which are used for the building of the enzymes they are called nutrients. These also are present in the earth's crust.

Dr. Vishwas : Almost all the nutrients present in rocks, water or atmosphere enter the plants and animals. And from plants and animals they reach us and then again return to the earth.

Earth : (sadly) In this process of transfer of nutrients from earth-plant to humans, man interferes by spraying weedicides, pesticides on crops which disrupt the cycle of life.

Narrator : So friends for your own benefit maintain a balance between life and nature.

Shrishti : Bhaiya, the play is over.

Vivek : Shweta Can we meet Dr. Vishwas

Shweta : Sure,sure,why not. Vishwas Uncle these are my friends vivek, shrishti and Manav.

Dr. Vishwas : Hello all of you

Vivek : We have heard a lot about you. Sharma uncle always tells us about you. You recently won some award congrats.

Dr. Vishwas : Thank you, You know Prof. Sharma. He is a great scientist.

Vivek : Dr. Vishwas, you told us about nutrients and their recycling but how does this recycling occur?

Dr. Vishwas : Look Vivek, all mineral elements are involved in different cycles of nature.

Shrishti : But the energy from the sun can not be recycled.

Dr. Vishwas : That is not true Shrishti. Energy is neither created nor destroyed but it keeps changing its form. but almost all minerals move from rocks, atmosphere, water and plants so that in presence of sunlight they can be utilized.

Vivek : And with rain some minerals travel from atmosphere to the surface of earth.

Dr. Vishwas : Later when the living thing dies these minerals gets again absorbed by the surface of the earth. and this cycle keeps on going.

Manav : As long as this recycling of minerals will take place we will keep on getting food.

Shrishti : It seems you are feeling hungry again.

Dr. Vishwas : Actually Manav is right. The day this cycle stops life will stop.

Shrishti : So we should be more careful in what we do and be cautious not to interfere this cycle.

Vivek : For that what should we do.

Dr. Vishwas : For this Manav or humans will have to use the resources very carefully.

Manav : That means Manav will have to use his Vivek that is intelligence.

Laughter

Dr. Vishwas : That is right or else the balance between different cycles of nature will be disrupted.

Shrishti : Which will lead to deadly effects.

Narrator : Some results are in front of us like global warming.

Manav : Now stop I have understood the importance of all the resources. and I promise to take good care of them.

Dr. Vishwas : It seems Manav has become more aware and intelligent.

Manav : But one of the resources which mummy is making I would use it wholly.

Shrishti : Food is what you never forget.

Laughter

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