Sheet # 17

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Environment is a word that is so commonly used but little know what it means !

* What is the environment ?

Its everything surrounding us , effected by us ,and effects us ( how , why, and what can we do is what made it a worldwide issue ).

* What is chlorofluorocarbonغاز الفريون ?

It is a gas used in :

1. fire distinguishers
2. insulating buildings because it protects against heat gain and lost from them (injection of a card containing chlorofluorocarbon between two layers)
3. Plates for food backing which are paper injected by chlorofluorocarbon
4. cooling systems : air-conditions , refrigerator …
5. hair sprays

so it is so commonly used but still not a lot of people know that much about it !

* What are the bases that people use in the selection of a certain material from a group of materials that can do the same job?

1. Cost ( people like to buy the less costly material )
2. Availability ( the way you store , keep , and handle it )
3. Safety ( lest thought of )

So people like chlorofluorocarbon because it seems safe, easy to handle, and yet it is cheap ! for that reason it became a worldwide used material .

Ex : when your cars air-condition is no longer giving cold air what is done is an injection of chlorofluorocarbon gas into the car and the man that does so doesn’t wear gloves or mask or any protective mean so it is relatively safe !

In the seventies a scientist studied the effect of chlorofluorocarbon on the Ozone layer and concluded that chlorofluorocarbon reacts with the ozone causing great damage to it ! (he was given noble prize for it )

The U.S.A Than created a plane that can cross different stratospheres Without being affected and they were supplied with cameras which toke photos of the ozone layer which showed horrible things about the damage that happened!

Two scientist came out with the fact the chlorofluorocarbon doesn’t react 1:1 with the Ozone but actually 1 molecule of chlorofluorocarbon reacts 1000 times with the ozone and damages it .

So the amount of damage is much more than that expected .

* What is the effect of damaging the ozone layer ?( will be discussed later )

The main effect is more skin cancer .

After the eighties worldwide people started to be concerned about the environment so we see for example people which are called the greens which are scientist that are trying to take care of the environment and protect it from the damages we are making .

* What are the components of the environment ?

1. Living components >>> human , plants, animals and microorganisms
2. Non- living >>>
3. physical factor : temperature (north and south poles are extremely cold areas where little numbers of people live , so are the equator area where there is very high temperature and humidity ), heat ( some plants grow in hot areas other grow in cold areas ), and humidity any of these decides where , what kind of creature, and the way that creature survives in a certain environment .

* The ebola virus is found in Africa cause it needs high temperatures and humidity and so is the ( African semi sickness ) .The environment contributed in the distribution of these diseases .
* How many types of malaria do we have ?( to be discussed )

We have 4 types each kind is found in a certain environment .

* How many people live on high altitude areas ?

Very little , why ? because as you go high there is less oxygen so your body won't tolerate it .

We can notice that people who live in these areas have big chests compared to their body that's because their lungs are big on the other hand places like (الاغوار ) it's okay for people living there to have small chests and not that large lungs .

Also the hemoglobin levels of your blood will be effected so it's okay to have high hemoglobin levels ex; 17 for those living in high altitude area ( But other people who do not live in high countries if their hemoglobin level is 17 , the doctor might start thinking about a disease like polycythemia ) and on the other hand having low levels for those living in the (الاغوار) area .

Note : as a doctor you should know where your patient lives in order to know if these levels of hemoglobin are normal or not and not to mistake your diagnoses .

b. chemical factor : Alaska is full of oil which made it a livable environment .the U.S.A bought it from Russia and constructed it to make it a suitable environment for living after they found pools of oil there .

also for example apples grow in Jordan is an area called (الشوبك ) but not in the dessert which grows dates and cactusصبار) ) that’s because of the temperature and different soil composition (minerals and chemicals ) and availability of nutrients in it there for different kinds of vegetables, trees, and fruits grow in different environment .

**so chemical factor plays a role that might be with or against the physical factor** ! to explain take this example the golf countries (دول الخليج) have very bad temperature and humidity but because of the petrol found there and their air conditioned houses , cars , and working places it became possible to live there . so they manipulated the temperature factor in order to live there !

c. nature : the eco ; the place where the previous 3 factors (living , physical , chemical ) are living .

we shouldn’t play with these which together make the environment because by so we damage our environment .

* The ecosystem is further divided into smaller system some examples are :

1. Forests
2. Oceans
3. Small pool of water ( it rains then water is accumulated than grass grows after that creatures come like viruses , bacterial and so on and now we have a system)
4. Desserts.
5. ect.

* What are the ecosystems that are present in Jordan ?

We have 5 systems which are :

1. Al gour area (منطقة الاغوار ) >>> hot , low rain ,good soil , people differ in their shape from other places
2. Mountains >>> people differ in their shape too
3. Dessert
4. Marginal areas >>> which are between the mountains and the dessert (it is used for raising cattails and sheep because it has grass and little rain )
5. Marine life >>> we have two seas the dead sea and the red sea ( one is dead and the other one we die to reach it !! )

There is a resent project held to connect the red and the dead sea which is being done for the following reason :

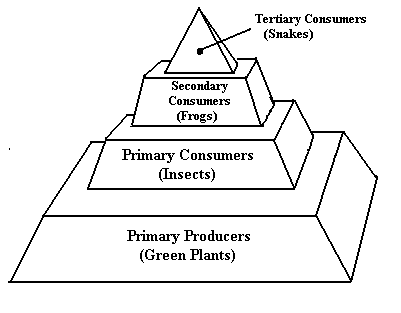
In order for the dead sea to remain; since its being used by 3 countries which are taking water and salt from it , there is no rain and its shrinking with time so this project aims to increase in its water levels by the passage of water from the red sea .

* one of the students asked if it is possible to supply the salty water of the dead sea with the less salty water of the red sea ?

the doctor said that its exactly like how the rain supplies the dead sea with water ! on the other hand there is a high level of evaporation so the water will stay as it was .

* The evaluations of the impact of this project on the environment (EIA : environmental impact assessment ) take in consideration all sides of this project , its effect on the creature and what is going to be done to prevent that . so there is a lost and at the same time there is a gain !
* On the other hand they are trying to couple to this project the nuclear reactor since the dead is at a lower level then the red accept at an area where there are mountains so you either go through the mountains or you can pump the water up than let it go down ( this can help in the production of electricity which is another gain for the country ) so having water go through pipes is used to cool this nuclear reactor (which is a must for it to work ) and this way I will gain energy lowering the need of other countries to supply us with it .

This project has been signed with Russia and Korea helping the country build up this project .

* What is a food chain (food pyramid ) ?

The way creatures feed on each others .

* What is the base of this pyramid ?

Producers : plants , algae , planktons in the ocean etc .

Next in the pyramid we have consumers ( primary , secondary , tertiary )

The food pyramid can be defined as the mood in which energy is transferred from a level to another .

* If energy keeps on moving upward the pyramid what will happen ??

Energy will be depleted ; so we need decomposersمحللات (microorganisms ) which bring energy downward the pyramid .

* What are decomposers ?

They are microorganisms that breakdown plants ,animals ,and humans when they die into a more simple form that can be utilized by the soil helping the plants to grow again and so on .

To help complete the picture we have what are known as sweepers .

* What are sweepersكانسات ?

If you get a piece of meat and leave it on the ground of your kitchen, even if your kitchen had never seen any ants previously, the next day you'll see millions of ants 🐜on that piece of meat :D .

دخلت النحلة ، و قال الطبيب الدكتور: أنَّ بعض الأشخاص من الممكن أن يموتوا من أول نحلة تقوم بلسعهم، و آخرون يستطيعون احتمالَ أكثرَ من ألفِ لسعة!، و لكن بجميع الأحوال لا تجازف بفحصِ و اكتشاف قدرات جسمك على الاحتمال ‎;)‎

* examples of sweepers: Ants, hyena and big birds, those will eat any creature that dies , even its bones. And what remains will be tolerated by decomposers and a very small amount will remain.

In ocean we have a huge black fish 🐟 called the fantom fish, it acts as a vacuum and cleans the bottom of the ocean from the wastes and remnants of other creatures.

* Something bad about this food pyramid is that it allows for routes of entry of bad things to our food like:

Radioactive materials ; in a very small amounts in certain area, which will be absorbed by certain plants like Brazilian nuts which will absorb uranium as calcium and then we feed on it , also throwing chemicals in the ocean which are then eaten by small fishes then larger fishes then when we eat these fishes, it will contaminate us and harm us.

* There must be a relationship between living and non living components, and this relationship should be in harmony, and this is what we call **environmental balance** OR **eco-balance**, this harmony will keep the system alive.

In Barada we heard about a river, but now if we go there, we won't see anything there; because the river is dead now! And that is Because of the lost of balance there , which lead to the lost of life , in addition to this is the Zarqa'a river which has the same story .

* How do we make this balance?

If we take any of the previous systems, we will find that There are a group of growth factors and reducing factors , and those factors may be :

1-biological ,ex: reproduction ; which increases the number of creatures "growth factors" but on the other side we have diseases and death 💀 "reducing factors".

2- non biological , ex: migration "the organisms aim to go away from any harm that exist in their environment (so that they can survive) so it is a growth factor .... in this case if we remove the harm, these organisms will come back to their homes.

Also high temperatures are non-biological reducing factors because creatures will die in high temperatures, and on the other hand normal temperatures are a biological growth factors.

* We have to make balance between growth and reducing factors, for e.x.: If a family has 12 child this is considered as a "growth factor", But if the infectious diseases were a lot we will have "reducing factors".
* Now a days we have vaccines and antibiotics so the number of humans became larger "growth factor", so we made family planning to reduce in their numbers .

لا تَعِشْ على الهامشِ في هذا الكون، و إنما كُنْ صاحبَ المَبْدأ القوي الذي يهتَزُّ لحديثه كُلُّ مَنْ هم حوله، و آمِنْ بالفكرة إلى حدِّ اليقين، لتوصِلَ مَنْ هم حولك إلى ذاك اليقين ‎;)‎