

KUMARI ARIVIAL PERAVAI
YOUNG SCIENTISTS PROGRAMME 2014- 2015
SCIENTIFIC AWARENESS CAMP

08-11-2014 AND 09-11-2014

C.S.I. INSTITUTE OF TECHNOLOGY, THOVALAI

Reports by

1. R. J. RESHMA, 2. PRADHEEPNARAYANAN 3. S. DANIROVAS 4. N. SRINIDHI 5. G. BYATEE



CSI Institute of Technology, Thovalai
SCIENTIFIC AWARENESS CAMP

FOR
YOUNG SCIENTISTS 2014-2015
SUSTAINABLE ENVIRONMENT

08-11-2014 & 09-11-2014
PROGRAM SCHEDULE



8-11-2014

6.30am Bus Pickup from Marthandam Bus stand
 7.20am at Near UDUPPI hotel, Vadasery
 7.40am Reach College campus
 8.00am Breakfast
 8.30am Team Discussion
 9.00am Planting Trees

9.15 am INAUGURAL SESSION

Presided by :
Dr. R. Christu Paul.

Principal, CSI Institute of Technology.

Introductory Address :
Shri. Mullanchery M.Velaian

Organiser, Kumari Arivial Peravai

Inaugural Address
Shri. L.LOUIS SAM TITUS

Chief General Manager, ISRO Propulsion Complex.

KEY NOTE ADDRESS :
ENVIRONMENTAL MONITORING THROUGH SPACE TECHNOLOGY

Shri. S. INGERSOL

Group Director, ISRO Propulsion Complex, Mahendragiri

10.40am Tea Break

11.00 am **SESSION-I**

Theme talks

Management Thoughts

Smt. C. Subatra

Asst. Prof. Pioneer, Kumaraswamy College, Ngil

Personality Development

Shri T. M. Sahajan IPRC Mahendragiri

Time Management

Shri. M. C. Shubin Tad

NI University, Kumarakovil

Forest in Kanyakumari Dist.

Shri V. Sundararaju

Dist. Forest Officer Rtd., Kanyakumari Dist.

Positive Thinking

Shri. M. John Rabikumar IPRC Mahendragiri

01.00 PM LUNCH

2.00 PM **SESSION-II**

College Lab Study:

Mechanical, Electrical, Electronics

Faculties:

Prof. R. Sajan Rajesh HOD Mechanical

Prof. N. M. Spencer Pratap Singh HOD-EEE

Dr. J. Shekaina HOD-ECE

04.00 PM : Tea Break

04.30 PM **SESSION-III**

FIELD STUDY & REPORTS

INTERACTION - YOUNG SCIENTISTS ,

Co-ORDINATORS & TALENT MOTIVATORS

06.00am Theme Talks

Environmental Protection

Shri. J. Joepakash Coordinator, National Green Crops

Environmental Challenges in Kanyakumari Dist.

Dr. A. D. Sobanaraj Environmental Scientist

Useful Traditional Practice

Shri. C. Sajeev

08.00 PM Dinner

09.00 PM **Cultural Program**

10.00 PM Prayar

9-11-2014

5.00am : Wake up

6.00am : **Breathing practice & yoga**

Shri. R. Satish Kumar,

Headmaster, PPM, H.Sc., Aunducode

7.00AM Theme Talk : **Healthy food Habit**

Dr. Y. Sri Ram

Medical Officer Primary Health Centre, Agastees

08.00am : Breakfast

08.30am : Group Discussion

09.00am : Loyalty

10.00am : **SESSION IV**

Indian Space Technology

Smt. S. Rajeshwari Dy. Manager, IPRC, Mahendragiri

Wetlands, Forests & Seashore in K.K. Dist

Er. A. Benzigar Rajan Dy. Manager, IPRC, Mahendragiri

Mars Exploration

Shri. N. Subramanian, Manager, IPRC Mahendragiri

12.30AM LUNCH

01.00PM **SESSION V**

Topic Preliminary Presentations

LAND & FOREST : PRAISON

WATER : FATHIMA HASIMA

AGRICULTURE : A. S. LEKSHMI

ENERGY : S. VARSHA

TECHNOLOGY : J. JESWINI

03.00 pm. **Valedictory Session**

Feedback by Young Scientists

Presided By : **Dr. R. Christu Paul.**

Principal, CSI Institute of Technology.

Special Address

Shri. Mangavilai D. Rajendran,

All India Radio Nagercoil

: **Dr. T. James Wilson**

Chairman, Sigma College of Architecture College Moodood

Valedictory Address

Mullanchery M. VELAIAN



I.R.J.RESHMA,
MAROON TEAM LEADER.

DAY - 1 (08-11-2014)

We all gathered on the verandah of the college. The organizer of KAP, Mr.Mullanchery. M.Velaian told us few things. He told about the importance of planting trees. Then he told that all the students should be active in the feedback session. The reports are expected to be prepared in hints and then frame sentences. There shouldn't be comments about the person who talked and only the points what the person told should be written in the report. Finally, we should include the thing which inspired us most in the speech.

Then we had planting trees session at 9:15 a.m. The coordinators of KAP included in planting trees. We planted them in the college garden. Shri.S.Ingersol, Group director of ISRO Propulsion Complex Mahendragiri was the eminent person who joined us in the session. Then Jeshwini, the former young scientist emphasized the importance of trees. She suggested that the trees are the lungs of the Earth as it gives us fresh oxygen and trees like teak have great economic value. She also said that the trees have medicinal value in them which do not cause any side effects when in taken by us. Then she told that the forests have been converted into cities. Thus, KAP grows our Earth green. 'GO GREEN, KEEP THE EARTH CLEAN'. We were asked to explain a few points about the importance of the trees. The leader of green team, Gby Atee came forward with few points. She said that trees provide us oxygen to breathe, it brings rainfall to our Earth, it gives us shade, it prevents our Earth from soil erosion, it is used to make furniture and it also increases the ground water table. Next the leader of yellow team, B.Abhirami came forward with few points. She gave us an example of a medicinal tree, the cinchona. The bark of the tree is used to cure malaria. Then she said that trees help in maintaining temperature of our Earth. She ended her speech by saying save trees. Then the leader of blue team, Jefin.R.Wensely told about trees. He stressed the point that the trees are shelter to many varieties of birds and animals. Then he told us that the trees reduce global warming and also it gives us shade. Then the member of green team, Sourya Vijay came up with few points about trees. She told that trees help in maintaining biodiversity. She then gave a few more points about trees. Next many other students like Dani Rovas, K.K.Prabin Kumar and so on spoke about trees.

Next Shri.S.Ingersol, Group director of ISRO Propulsion Complex Mahendragiri gave us some points about trees. He made us feel that the trees are really very important. Some of his points include, the trees release oxygen, they prevent soil erosion, they are required for all the living beings, and they are used

for commercial purposes and so on. He instructed us to celebrate our birthdays and other special events by planting trees. He also instructed us to understand the true value of trees. Then we all dispersed from the garden of the college and gathered in the seminar hall. It was the turn of red team to organize the session. The leader of red team, S.Abina anchored the session. She first welcomed all the dignitaries to the Dias. She welcomed the Chief General Manager of ISRO Propulsion Complex Mahendragiri, Shri.Luis Sam Titus; the organizer of KAP, Mr.Mullanchery.M.Velaian; the Principal of C.S.I. Institute of Technology, Dr.R.Christu Paul and finally the group director of ISRO Propulsion Complex Mahendragiri, Shri.S.Ingersol. The programme began with Tamil Thai Vazhthu. Then she welcomed the gathering. She then invited the member of the red team, M.Sabrina Lynette Fernando to deliver the welcome address. She welcomed the correspondent of C.S.I. Institute of Technology, Adv.A.Salin but he was not present in the meeting. Then she invited all the eminent personalities, guide teachers, consultants, talent motivators, scientists and finally all the KAP students. Then S.Abina glorified CS.I. Institute of Technology and then invited the brain of KAP, Mr.Velaian. He welcomed everyone present there and glorified the atmosphere of the college. He felt happy about selecting a best place for conducting the scientific awareness camp. He compared Shri.S.Ingersol to Karnan and that was because the activities which his right hand do will not be known to his left hand. Then he appreciated Shri.Luis Sam Titus that he is a hard working person right from his young stage. He made us feel happy by saying that the year will be a very successful one and also about the daughter of principal who joined KAP when she was young like us. The scientific awareness camp was held at Lord Jaganath College in the last five years and this year we have selected the good place. Then Shri.Luis Sam Titus was honoured by giving Ponnadi according to the Tamil tradition. After that Mr.Velaian told about Shri.S.Ingersol who was the main person and played a major role to bring out young scientists from KAP. Ponnadi was given to Shri.S.Ingersol. KAP has become a well organized programme and each of us should know the need of conducting the scientific awareness camp. He said that the organizers and members appointed in KAP are very active and helpful. He ended his speech. S.Abina thanked him and welcomed Dr.R.Christu Paul who is the father of former young scientist, Ashika.

He thanked God Almighty for being with us to conduct the two days camp. He then glorified Mr.Velaian by saying that his name would often appear on the southern newspapers and he has his own responsibility. KAP has contributed more things to bring out the hidden talents of the students. He then honoured Shri.Luis Sam Titus and Shri.S.Ingersol. He specified that the ISRO scientists dedicate

their time to bring out success for our nation. He instructed us to excel in our life and the studies should be uni-directional. He appealed KAP that it does selfless work and then he gave us a short introductory address. He read a verse from the Holy Bible and said that if God visits our Earth now, He would say that the Earth has got fever. Chemicalization of food causes more disaster which kills numerous people and hence our nature has been destroyed. So it is our responsibility to save nature. He shared us an example about the South Africa. It is a colonial country and every countries like to be a colonial country but they can't due to their petroleum resources. Nigeria is well known for its production of petroleum. In 1916, when we compare organic chemicals there is 117 times increase in it this year. Every year we are increasing 0.4 chemicals in per hectare. From every seedling there is chemicalization. Thus, we should look for organic fertilizers. We should save the world by protecting the soil, air, water and environment. He gave us some tips to save our Earth.

- Use public transports for long distances rather than using private transports.
- Use non- conventional energies like solar, wind, tidal and other natural resources.
- He shared us an example for waste management. If we cut a fish, there would be micro chemicals and plastics. This says that there is no decomposition of waste and so it directly enters the seas and then the fishes intake them. Finally, the fishes are being in taken by us.
- He said that we should reduce the amount of carbon so that our Earth can be saved.

We have to give awareness to the people like the Swachh Bharat mission which came into existence by Narendra Modi, the Prime Minister of India. He said that these types of missions can only be achieved by schools, colleges and other organizations and not by the political parties.

Then he told us that KAP can mould us. We should have a better vision and mission. Once again he welcomed all of us on behalf of C.S.I. Institute of Technology. S.Abina thanked him and welcomed Shri.Luis Sam Titus. He welcomed everyone and he felt honour and privilege to be a member of KAP. He was extremely glad to see the enthusiastic young scientists. Then he came to his point that the environment is being polluted. It is not polluted by any external agencies and that is we who are responsible for the degradation of our environment. He requested us to take as a challenge to keep our Earth clean and bring it equal to heaven. He shared some of the things in past. There were no water bottles before 20 years. And today we all carry water bottles everywhere so that we don't have to

drink water from public places which can lead to stomach upset. Then he told that we can live for many years by in taking fresh water and hygienic air. Rivers get polluted by industrial and household wastes. Water treatment plants are not operating properly even though Tamil Nadu has more than 1400 water treatment plants. We should take some simple steps to protect our Mother Earth. He stressed two main points.

- ▶ Garbage should be made as manure for plants.
- ▶ We should ensure that we eat healthy foods.

Foreign countries have three or four waste boxes on the road side to dump wastes. The population of India has become a lame excuse to maintain our Earth clean. But it is not in case of the population and we people can take steps to make our Earth clean and green. He said that we are supposed to be a role model to our family and neighbours in cleaning the environment. After that he shared some of his inputs. South Africa was once considered as a black part of the world. That was because the people were not educated. Many people have rated for innovative index. India ranks 76 out of 150 but South Africa ranks 51. This is because the Indians are self-motivated and are not innovating. Unless we find a love for mankind, we can't innovate, he said. Before 10 years, India ranked around 40 in innovative index. So every year India is being pushed back. Now Switzerland ranks first in innovative index. He told that many Velaians were there in Switzerland and they motivated school children by giving more opportunities. They have defeated many developed countries like USA and England. We should bring up India by innovating many things. The best idea is to bring out a competitive product and we should continue with the same spirit so that we can rise the Indian flag up. Then he came to his next point about planting trees. He said that he remembered a Tamil lesson of his second grade. The Tamil lesson said that the kings planted trees roadside. One day he visited every place he ruled to see the people dwelling there. At that time, he saw an old man planting coconut trees. The king was surprised to see him and asked 'Why are you planting coconut trees in this old age?' He replied by showing the coconut trees on the either side that these trees were planted by my forefathers and I was benefitted by these trees, so let my generations also get benefitted by the trees. We understood the moral of the lesson that we should grow trees everywhere. He ended his speech by wishing all of us a good luck.

Then we had a feedback session. S.Abina welcomed Shri.V.Sundararaju IFS, retired forest officer and Mr.Joe Prakash, the headmaster. Then she invited Induja to propose the vote of thanks. She thanked all the dignitaries and the KAP books 'Nurture Nature' were given to some of them. S.Abina welcomed Sir.S.Ingersol who was the guiding star of young scientists.

He gave us a presentation on the topic 'ENVIRONMENTAL MONITORING ON SPACE TECHNOLOGY' which was otherwise known as sustainable environment using space technology. First he congratulated all of us for being selected as the young scientists. Entry is not only the intention of us and we have a great responsibility to carry the messages of KAP worldwide. He stressed the topic 'Sustainable Environment' and instructed us not to have any sort of negative thinking. He began his presentation by telling that the growth in technology has brought much advancement in space and also have resulted worse in our environment. Sustainability is a process and biosphere is an example of it. Recycle is the key to sustainably. The nature has done the recycling process and science and technology should also be recycled. Then he said that space technology is a beautiful 'eye on the sky'. We will come to know about all the natural resources and degradation by using the space technology. Space technology provides us a global vision through an observer on the sky. He stressed the point that the space technology is not the solution to save nature but can find the ways to save nature. Space technology helps in statically accounting the harm we have done to the Earth. We get information about what is ailing our Earth and nature through the space technology. He said that if once all the people come to know about the impacts, then everyone will work on it. Space technology is a very good technology which has become the single most developing thing to save the mankind. The most important thing that we should keep in our mind is the new dimension in human vision, he said. The Earth is the only planet where life exists and has come into existence before 450 crore years. And we humans came late to the Earth. Space science has been investigating everything that is found on Earth and the things around it. Then he raised to a question us. Can our activities here on Earth benefit from human efforts in space? We spend huge amount of money to send satellites and rockets to space. He said that the money is not a big matter when compared to the information we received. Then he made us to think about the following questions:

- Where do we come from?
- What will happen to us in the future?
- Are we alone in the universe?

He told us that if we have to get the answers for the above mentioned questions, we have to learn space science and apply it. There are many other solar systems but we don't know whether life exists or not. The sole reason to send Mangalyaan was to find out whether life exists on Mars or not? Before many years Mars had plenty of water but now it's totally bare. If we continue to destroy our nature, then definitely our Earth will become like the present situation of Mars, he said.

We humans make mistakes but we should not repeat it. Then he told us that Mangalyaan is a victory for our nation to know about Mars.

We learn more things because of our curiosity. We are curious and so we study space. He mentioned the following things which are included in space science.

- + Rockets
- + Artificial satellites
- + Space probes
- + Space stations
- + Space shuttle
- + Remote sensing devices
- + Space suits
- + Radar
- + Computers
- + Fuel sources
- + Landing modules
- + Materials that can survive heat and pressure
- + Solar panels
- + Living quarters
- + Biomedical equipment
- + Air purification devices
- + Telescopes and many more.....

He said that we humans are greedy because all the storage of nature has been plundered by us. We deplete the resources so fast and so the Earth has been destroyed. He insisted that we should think about the future generations who are going to live on this Earth otherwise we can't bring out sustainability. We should be selfless people. He added 'Nature is the best teacher' so we should learn from it.

He then told that there are lots of problems to learn space science. He emphasized the importance of the atmosphere which is a very big umbrella that has been given by God. It saves us from the ultraviolet rays of the sun but we humans damage it. Some difficulties of space science include:

- ✓ Radiation exposure
- ✓ Lunar dust
- ✓ Food and nutrition
- ✓ Exercise
- ✓ Different levels of pressure, atmospheric condition and gravity
- ✓ Sleep loss
- ✓ Risk of bone fracture

- ✓ Reduced muscle mass
- ✓ Reduced aerobic capacity
- ✓ Mental disorders arising from extreme, confined and isolated conditions

To overcome these difficulties, we humans have found ways. Without solving these problems we can't learn space science because even our blood circulation depends upon the gravity of Earth. If we go to the outer space, there is no gravity. Therefore the humans have found solutions. Then he shared us some information about the objects in space. Mars is 22.7 crore km away from Earth. We can't reach Mars directly because gravitational influence is involved in it and that is science, he said. The scientists in the 17th century had said about the route of orbits but we've technology today. Galileo viewed planets through telescope and drew these images on a paper. Now we have wonderful cameras. This shows the growth in technology. The humans need to be ready and educated for the space travel of the future. The space science and technology is a science tool which help us to understand the nature. We degrade our environment day to day. We can't see the butterflies, insects, animals and birds which were living before few years. As a result, we have lost our biodiversity. We think we are ultimate and so we go down, he said. Science and technology should make our life broaden. He told us to keep in mind that science can be used for both destruction as well as construction so we should use it in a way. He said that there was a marvelous Earth with a sustainable environment years ago but now we have lost everything. We make products only for our own satisfaction and we don't even think about the future of that product.

Take, make, waste is the present technology. We have made products that never went back to our mother Earth. The science and technology has given more machine power to us. Thus we have power to extract and consume resources, produce waste and modify our world in ways that threaten both our continued existence and that of many organisms with which we share the planet. He stressed the point that we can't match intelligence with nature. We should understand the working of nature and that is the motive of the scientific camp too, he added. Huge animals depend upon small fungus. Interlinks exists in nature and there is a beautiful spectrum of life. The biodiversity is present in seas and oceans like in our nature. We face many environmental problems every day. Nearly 7.2 billion people now occupy the Earth and we are adding about 100 million more each year but the resources remain the same. At present rate, we need 13 Earths to make it sustainable, he said. We can survive only if we understand the environment problems but we keep on polluting everything present on the Earth. He stressed the point that we are the culprits of destroying the biosphere. "Technology has the

potential to connect each and every citizen of the country and that is why we want to realize the mantra of unity with the help of 'Digital' India". - Narendra Modi, Prime Minister of India

Next he told the uses of satellites. Satellites help us to know about the condition of each and every place.' No humans can survive in Delhi' because of pollution says the science. Satellites help in measuring the quality of air and pollution levels. It also helps to search and rescue operations. Satellites are used for GPS technology. SARSAT helps in searching and rescuing operations. Satellites are best used for detecting and tracking forest fires. Satellites have technology to combine the wind direction data and also predict it. Then he said about Kalpana Chawla, the first woman of India to travel to space. She was a global citizen. She lost her life in space. Then he showed us few images of satellites that have been sent from India. He also showed some images that the satellites have taken like the cyclone Thane, Katrina, Pacific Hurricane Marie, volcano eruption and tsunami in Nicobar on December, 2004. Then he explained a wide topic about 'Mars Mission Orbiter' which is shortly known as MOM. The reason for sending MOM to Mars is to know whether the history of Mars will be found in Earth. Then he said that methane is an indication of life and if the presence of methane is there, then there is a possibility of life. The whole Earth is surrounded with lot of dangers due to environmental degradation. Then he described about Mars. Mars has often sand cyclone. It is a red planet and has got many minerals. There are many rovers in it. It has got 630 days per year. Mars too has seasons like Earth. If we go to Mars, we will be 3/8 of our weight because of the gravity. The average temperature of Mars is from -53°C to -128°C . He said that we should know about the neighbours of our Earth. The days taken to reach Mars is 300 days which is nearly equal to 10 months. Nearly 54 attempts were taken to reach Mars. He proudly said that India is the only country which succeeded in its first attempt to send the rover to Mars. So we young people have been given a golden opportunity to understand nature. So we should make use of it and save our mother Earth. He ended his speech by giving confidence to us. S.Abina thanked him. Then we had a tea break.

The next session began sharply at 12:00 a.m. The first theme talk was given by Mr.V. Sundararaju.IFS Dist.forest officer rtd. He wished us a fine good morning. He gave a clear cut definition about sustainability. Sustainability means judicious and efficient use of natural resources but we should not exploit them. Future generations should also be able to enjoy their lives. Then he explained about the noise pollution. According to WHO, noise during daytime is 55dB and night is 35dB. When we burst crackers, it is 140dB. Due to this, the people and other organisms get greatly disturbed. People use chemicals to manufacture crackers.

When we burn the crackers, the chemicals inside them burn and the soil is polluted. These chemicals are washed away to the water bodies like lakes, rivers, ponds and finally to the seas. They release harmful gases like CO. So the atmosphere totally gets polluted. So he requested us to take a decision that we should not burn crackers hereafter. Sivakasi is considered as a mini Japan but 100 of lives are destroyed mostly in cracker factories. Then he said that we should have a positive attitude. Today's students are tomorrow's pillars and we should convert all the obstacles into stepping stones to success.

He glorified Kanyakumari district. He said that Kanyakumari is a good district and we have got monsoon rains in this year when compared to the previous years. Then he told us about the forest areas. The urbanization has been resulted in the destruction of forests. Once upon a time there were forests such that the sunlight cannot penetrate into the forest. We should have 1/3 of the total land are as forests. We should increase the forest cover but we have got many areas of wasteland. We should plant trees in every available wasteland. Now the forest cover is 23%, he added. 'Do not ask what the country has done for you, ask what you have done for the country'

- John.F.Kenedy

He shared as an incident. The smugglers and woodcutters have destroyed the forests. So the government sent them to the prison. So their children began asking to the mother that why are they sending our fathers to prison. By hearing the incident, the children brought awareness and thereby the mindset of the people changed. Now there is protection for the forests and we should come forward and strive for the development for our country. Then he clearly explained about the HACA. Hill Area Conservation Authority (HACA) is an authority brought by the government to maintain the ecological balance of the hills. If we take an example of the forest, the producers are consumed by the herbivores; the herbivores are consumed by the carnivores and omnivores. If any one of these is improper, then there would be an ecological imbalance. We need to obtain permission from HACA to construct buildings on hilly regions. HACA is found everywhere in the places situated in the foothills of the Western Ghats. Hills also play a major role in maintaining sustainability. Next he also shared us an example. Then he explained about the Tamil Nadu Private Forest Act (TPFA) which is an act that was implemented in 1949 but it was implemented in Kanyakumari district in 1979. When the forests are removed, the soil is exposed and the land becomes barren. During rain, there would be soil erosion. It takes 1000 years for the formation of topsoil. The he said that there is no district like K.K. district which is rich in natural resources in Tamil Nadu. So we must be thankful to God. But what do we do? We

do injustice to God. So we should take steps to protect forests. Then he shared us an example about the Shakuntala Mountain. Next he told that the coastal regulating zone can be utilized only for fishing and not to build any hotels or other buildings. Then he explained about the low tide line and the high tide line. After tsunami in 2004, the high tide and the low tide lines have been changed. Then he said that there is a mysterious world under the soil. They do wonderful things to mankind. The wastes dumped by us in the soil are broke down by the bacteria from the dead organic particles into smaller substances. So bacteria help us in various ways. In turn, we apply chemical pesticides and fertilizers and kill these bacteria. Our forefathers led a harmonious life with nature. Nowadays, even the new born babies have get several diseases because of the chemicals. 'Arise awake and stop not till the goal is reached'. - Vivekananda.

He ended his speech by instructing us to work hard to achieve our carriers. S.Abina thanked him and then invited Shri.M.John Rabikumar, IPRC Mahendragiri to give a presentation on 'POSITIVE THINKING'.

He began his speech by saying that every normal and abnormal human thinks. Normally, a person thinks nearly 50,000 times. It may vary according to our age, behavior and experience. There is positive and negative thinking. Positive thinking is the thinking related to success but negative thinking is the thinking which is related to failures and past. Positive thinking is a mental and emotional attitude that focuses on the bright side of life and expects positive results. Negative thinking is when we have bad thoughts. He expected all of us to have positive thinking right from the day. Then he told an example by taking two persons named Allan and Jim. The positive attitude determines the success in our life. Our friendship, spending our leisure time determines our character. He shared us an example about his son who always had negative thoughts. After few days, he started thinking positive and achieved in his carrier. He instructed us to choose a best friend who can come forward and we shouldn't compare us with lower people.

'Our thoughts are our words

Our words are our actions

Our actions are our habits

Our habits are our character

Our character is our destiny.'

Then he differentiated an optimist and a pessimist. An optimist says that 'My tumbler is half full but a pessimist says that 'My tumbler is half empty'. Our Prime Minister Narendra Modi says that 'Neither half full nor half empty. The half is filled with water and other half is filled with air.' We should think positive that we

can do everything. Then he shared some positive statements which began with ' I can.....'. Next he shared some quotes and sayings on positive thinking.

'The pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.'

Winston Churchill

'We are all stars, and we deserve to twinkle'. - Marilyn Monroe

'Don't compare yourself with anyone in this world. If you compare, you are insulting yourself'.

'The future belongs to those who believe in the beauty of their dreams'.

'Some people are always grumbling because roses have thorns; I am thankful that thorns have roses. 'We should overcome the difficulties which come in the way when we set our way to success.

'Everyday may not be good, but there is something good in everyday'. We should stop thinking of what could go wrong, start thinking of what could go right. He told about the life of Steve Jobs, the owner of Apple Company who was the first man to introduce iPhone concept in the world.

'No matter how good or bad the situation is, it will change'.

'Anywhere is paradise; it's up to you'.

'Every successful person has a painful story. Ever painful story has a successful; ending. Accept the pain and be successful'.

'Don't take people's words on heart. Speak in front of them'.

'Heart is not a basket for keeping tensions and sadness. It's a gold pot for keeping flowers of happiness'. We should replace the negative thoughts with positive thoughts.

'Heal the past, live the present, dream the future'.

'The best is yet to come'. He ended his presentation by telling us to think always positive. S.Abina thanked him and welcomed Mr.Joi Prakash. He told about the glory of KAP since 1999. The reason for choosing 'Sustainable Environment' as the topic of the young scientists programme is because today we don't have it. He mentioned the five elements which combine to form our environment. They are:

⊕ Water

⊕ Land

⊕ Air

⊕ Sky

⊕ Fire

He honoured the former young scientists. He ended his speech by saying a tongue twister.

'This is the house that Jack built.

This is the malt that lay in the house that Jack built.

This is the rat that ate the malt that lay in the house that Jack built.

This is the cat that killed the rat that ate the malt that lay in the house that Jack built.

This is the dog that worried the cat that killed the rat that ate the malt that lay in the house that Jack built'. S.Abina thanked him and welcomed Shri.T.M.Sahajan, IPRC Mahendragiri to give a presentation on the topic 'PERSONALITY DEVELOPMENT'.

He mainly told about personality, leadership, attitude and interpersonal relation. The combination of characteristics or qualities forms an individual's character. The qualities of a person's character make them interesting and attractive. The word personality comes from its Latin origin 'Persona' which means the mask an actor wore to suit the role he was playing.

'Stop talking to people about what you will do; show them instead what you are doing'.

-Robert Holden

Success is the realization of a worthy model.

'Study while others are sleeping; work while others are loafing; prepare while others are playing; and dream while others are wishing'.

William.A.Ward

He listed some characteristics required for maintaining a good personality:

- Belief in oneself
- Good setting
- Positive attitude
- Facing the truth
- Constantly improving on our own abilities
- Unleashing the power of our mind
- Time management
- Stress management.

He also listed three success factors:

- Drive(Eg: Arise and shine- Bible verse)
- Attitude
- Confidence

Next he explained about the personality tree. If appearance, talents, likes and dislikes of us are good then our personality will be good.

S.Abina thanked him. Then we had a lunch break. The canteen provided us healthy food.

After the lunch break, sharply at 2:30 p.m. we went to visit the labs in the college. The first lab was the ELECTRICAL MACHINES LAB.

The lab incharge is Proff.Rajesh and the H.O.D. is Mr.Spencer Pratap Singh. Proff.Rajesh explained us about the machines in the lab. The first machine he explained was the transformer. It is a stationary device. It is AC device and transfers energy from one circuit to another. It has no electrical connections and is linked by flex. He gave us a clear cut definition for the transformer. The transformer is a stationary device which transfers energy from one circuit to another circuit and it works on mutual connection. It has windings on it. The primary windings are for input while the secondary windings are for output. The windings are made of copper. Then he showed us the main switch consists of indicator, fuses, lamp load, terminals and so on. Next he described about the ammeter and voltmeter. The ammeter is used to measure current and the voltmeter is used to measure voltage. The reading can be taken when the pointer moves. The function of motor is to convert electrical energy into mechanical energy whereas the function of generator is to convert mechanical energy to electrical energy. Then he showed us another machine where a motor and a DC generator was combined together. He explained the working of it. When the motor rotates, the generator rotates and produces electricity. The device tachometer is used to measure the speed of the motor. Then he showed us a machine known as AC generator. It supplies power to the synchronizing panel. We saw the lights blinking alternately on the synchronizing panel. AC means alternate whereas Dc means direct current. The feedback was given by me, R.J.Reshma, the leader of maroon team.

Then we moved on to the POWER ELECTRONICS LAB. The H.O.D. is MR.Spencer Pratap Singh and the lab technician is Mr.Jawahar. He showed us some components. The rectifier converts AC to DC and an inverter converts Dc to Ac. The converter which is an AC voltage controller converts fixed AC into variable AC. The chaper converters fixed Dc to variable DC. Next he said about frequency. Our country has a frequency of 50 Hz. The frequency charger circuit which is known as cyclo converter, converts fixed frequency into variable frequency. The converter has 1 phase that gives 230 volts and 3 phase that gives 415 volts. The Cathode Ray Oesioscope (CRO) shows the flow of current in wave form. Integrated circuits 9IC) are used in home to run appliances. It is of two types- Analog (AC supply) and digital (Digital supply). The microprocessor is said to be the heart of the computer device. In computer, it converts typing text to digital form. He explained some components by showing us the models. The function of resister is to oppose the flow of current. The function of capacitor is to store the energy. The function of

thermistor is for thermal resistance. The feedback was said by S.Dani Rovas, the co-leader of maroon team and the yellow team member, J.S.Edin Jijo.

Then we moved to the ELECTRICAL SIMULATION LABORATORY. The lab incharge is Mr.Sam Harisson. He described about the power system. The power system is the combined operation of generation, transmission and distribution. The electrical simulation laboratory analyzes the drawbacks of the generators. The evaluation of power system is called power system analysis. Three things which are needed to cultivate good quality powers re maintaining the voltage, frequency and phase sequence. The Indian standard frequency is 50 Hz and the American standard frequency is 60 Hz. The medium frequency is considered to be from 45 to 51 Hz. He told about the phase sequence R, Y and B. The Tamil Nadu Generation Distribution Company (TGDC) increase power generation at minimum cost and gets profit. The Independent System Operator (ISO) maintains the power transaction between generation side and the distribution side. The lab uses packages or software to analyze the generator. Some of them are my power, C++, mat lab and AUP (Anna University Power lab). The feedback was given by Abila, the maroon team member.

Then we moved on to the INTEGRATED CIRCUITS LAB. Mr.Prakash explained us about the machines in the lab. The function of CRO is to analyze and display the wavy forms of current in on and off condition. Then he explained about step-up and step-down transformer. The primary windings on it can be used in houses and the secondary windings can be used to take small quantity of voltage like 1 volt.

Then we moved on to the MANUFACTURING TECHNOLOGY LAB. The persons in the lab are Mr.M.Isaac and Mr.Ebi Oliver Jose. Mr.M.Isaac explained about the machines in the lab. The first machine was known as the lathe machine. Its function is to remove the metal in the form of small chips form from the work piece in the required shaped and sizes. It helps to reduce the diameter and length of the metal and is made of high speed steel. It consists of a toll cutter. We saw the working model of the machine. Then he described about the drilling machine. It is used to make many varieties of holes in wood, metals and other objects. The drill bit is made up of high speed metal known as the mild steel. Then we saw milling machine which is used for gear cutting and is made up of high speed metal. Next we saw the surface grinding machine which is used to grind the top surface of a metal and next the shaper machine which is used for converting the metals into slots, grooves and keyways.

Then we moved to the THERMAL LAB -II. Mr.R.Sajan explained about the machines. The first machine was the wind tunnel which showed the aeroplane lifting

function with aerofoil design. Then we had a look over other machines such as the cut section model of refrigerator and air conditioner, water cooling tower and boiler which produces steam.

Then we moved to the CGD CAM LABORATORY. The lab analyzes working of machines and the designs the engine. When the commands from the computer are given to the lathe, It does the process in our required shapes and sizes. The drawing format is used to sketch the engine design and auto cad should be learned to do drawings. The lab is used to do miniature models.

Then we saw CAM LABORATORY (Computer Aided Machines). We saw CMC lathe machine there. Then we went to the THERMAL ENGINEERING LAB -I. Mr.David Paul Daniel explained us about the machines. We saw petrol and diesel engines. He explained about the single cylinder 4 stoke petrol engine with electrical loading. The machine obtains electricity within two stokes by using petrol. Next we saw two stokes diesel engine. The feedback was given by Jenisha of maroon team, Prabin Kumar of maroon team and Argineshia of yellow team. Then we had a small tea break.

The next session began at 4:35 p.m. It was the turn of maroon team to anchor the session. R.J.Reshma, the leader of maroon team anchored the session. First Dr.Sobanaraj, environmental scientist and former principal of Scott Christian College was welcomed to give a presentation on the topic 'Environmental challenges we have to face in the near future'. He said that Earth is the only home and we may pass through but once. He emphasized that the Earth is the home of generations to come so let them enjoy. Our surround is known as environment. We should not waste water. It is precious. He stressed the point that soil is solid gold and water is liquid gold. We have to make our people understand the past, present and future to design our development programmes. We have to plan for sustainable civic improvement programmes throughout the country and our districts, especially in all our villages. He made us understand that the insects are more cautious about the environment but we are certainly not. So we should watch everything in nature. The ecological awakening of the early 1970s which culminated in the United Nations Conference on the Human Environmental in Stockholm in 1972 was the result of scientific research which proved the state of our environment. In 1972, reports were made on marine pollution, wildlife conservation, pesticides and its problems, industrial and domestic wastes and its problems, land reclamation, architectural heritages, urban decay, economic and technical changes and finally need for public environment in environmental policy making. If we are not keeping our environment clean, our future generations will be affected. The recommendations made after the reports were to promote a convection to restrict dumping of harmful

substances in the oceans. The report also stated to minimize the release of notably dangerous pollutants, such as the heavy metals and organo- chloride compounds. The report suggested to organize worldwide monitoring of atmosphere and to promote gene banks to safe guard the existence of all species of animals and plants (biodiversity). It also stated to halt all commercial whale catching for ten years and to set up an international exchange service for information on the environment and finally to increase emphasis on population control. If we are polluting our environment, we are violating the right of others. He told some blueprints for survival:

- ❖ Minimum disruption of ecological processes.
- ❖ Maximum conservation of materials and energy
- ❖ A population in which recruitment would equal loss(stable)
- ❖ A social system in which the individual could enjoy rather than feel restricted by the first three conditions.

Then he said that anthropogenic activities have changed the Earth. The exploitation of physical and biological resources increased rapidly and the deterioration of the environment also simultaneously followed. He said that he did a research in the Kothaiyar basin on water resources in 2006 and that brought tears in his eyes. So we should protect our environment. He explained briefly about the butterfly effect. We depend upon nature for all our needs.

'Nature has everything for our need and not for its greed'. -

Mahatma Gandhi

Then he shared his views about the biosphere and the biological and mineral resources and also about the modern living model, natural and basic resources. He gave us more tips to cultivate sustainable development. We should give awareness to schools, colleges and general public. He said some Chinese, Tamil and Malayalam slogans. Finally he told us a story and cleared our doubts. He taught us a song lyrics about our mother Earth and nature. He mentioned 5R method if anyone force us to use plastics. The 5Rs are:

- Refuse
- Reuse
- Reduce
- Recycle
- Replace

The feedback was given b by S.Dani Rovas, the co-leader of maroon team and thanks was told by R.J.Reshma.

At 6:15 p.m. we had a theme talk from Shri.M.Shibin Tad, Ni University, Kumarakoil on the topic 'TIME MANNAGEMENT'. He told that basically we are

very lazy, so we should manage our time. Time is very much important from kitchen to space science. To keep up time management he told us follow the RAC model.

R: Record- Casually Record all the basic activities in the life.

A: Analyze- Analyze the time which we have utilized properly and the time which we have wasted.

C: Change - The time wasted should be changed into useful time.

He told us that we should know about our weakness and strength. We should analyze everything and concentrate on it. He shared us few examples. He ended his speech by saying us to keep up time. The feedback was given by Mary Sushmija of maroon team and thanks was said by Dani Rovas.

At 6:30 we had a presentation by the former young scientist, A.S.Lekhmi on the research topic of maroon team 'SUSTAINABLE AGRICULTURE'. She first gave us a clear cut definition of environment. Environment is our surrounding and the natural environment is being affected by us. Agriculture is the systematic way of producing goods. She told us a proverb 'Health is wealth' so we should be healthy in our day to day life. She suggested the need for agriculture. They include:

- Need to produce more yields
- Limited resources
- To satisfy the expects of global population
- To increase food production in agricultural practices
- Crop rotation
- Modern farming methods
- Ancient farming methods
- Fertilizers
- Genetically modified crops

We had a small debate for modern and ancient farming methods'. The geographical area of agricultural land in India is 329 million hectares and the cultivation area is 145 million hectares. She told about the threats to agriculture. The threats were the increase in population, demand for more food, shrinking resources and more environmental degradation. She explained about the organic farming. It can be done using vermi compost, green leaf manure, crop rotation, biological management, animal husbandry, biofertilizers and other manures. She said about the green revolution. Norman Borlaug is known as the father of green revolution. It resulted in technology transfer initiatives and rapid increase in agriculture production. 'Without agriculture, there is no culture'. All the development should be made sustainable and to do so new laws must be introduced and implemented. The feedback was give by the maroon team member, Jenisha and thanks was conveyed by Prabin.

Mr.Velaian told us about the next meeting which will be conducted at MACET(Marthandam College of Engineering and Technology) on November 22. He informed about the essays and PowerPoint presentation which should be done by us in the next meeting. Next we had a dinner break and had delicious food. At 7:55 p.m. Shri.C.Sajeev gave us a presentation on the topic 'USEFUL TRADITIONAL PRACTICES'. Some practices were done by our ancestors and they are also done by us and will also be done by our successors. The first traditional practice he listed was the women moving around the peepal tree. Trees have many benefits while moving around the peepal tree, especially for women. The scientific name of the peepal tree is *Ficus religiosa*. The peepal tree is considered to be the king of all trees. Many diseases of women can be cured when we follow this practice. It gives out oxygen. Its medicinal value will spread up to 10 km distance. The root, bark and seed of the peepal tree is very rich in medicinal value. He said us that there is a meaning in every traditional practice. The next practice was drawing kolam and the other name of it is rangoli in northern states. Before drawing kolam, we clean all the surrounding areas. Kolam is usually drawn with rice flour. Drawing kolam avoids the entry of insects into homes as people believed that the insects would go away and would not enter the house after eating the rice flour. According to Tamil tradition people have the habit of giving food to all living beings. The third practice he listed was the lighting of lamp. It also had several meanings. This practice is practiced by people before starting any auspicious events or rituals. When we light a lamp, the darkness turns into light and also keeps our surrounding clean. Lighting lamps are better than lighting candles because lighting candles can create some disease like asthma and cancer to the people. The oil used in lighting lamps give us lot of benefits and acts as a good pesticide. He said about the vegetarian food practices. He listed the six tastes: sweet, sour, salty, bitter, pungent and astringent. He also shared few examples of these six tastes and their benefits too. He told about the oldest traditional treatment system, siddha. Adding tulsi in tea is good to health. Tablets may cure diseases but it causes some side effects whereas medicinal plants cure disease without any side effects. The feedback and thanks was given by R.J.Reshma, the leader of maroon team. The second feedback was given by Abirami from yellow team followed by Gby Atee from green team, S.Abina from red team and Sreemeera Subramaniam from blue team.

After that we had a small group discussion about performing the cultural programmes. The cultural programmes began and we had dances, skits, songs and so. It was really very interesting and all of us were given opportunities to perform. The cultural programmes got over by 10:20 p.m. Mr.Velaian divided the topic to the students who were going to be the chief guest on November 14. He glorified C.S.I

Institute of Technology about the biodiversity, hospitality, plantation of trees and the canteen which provided us snacks and healthy food at regular intervals. By the way, the session of maroon team was over. He informed us clearly about tomorrow's function. We had a prayer and dispersed from the seminar hall. We refreshed ourselves and went to bed.

DAY - 2 (09-11-2014)

The next day began. We sharply woke up at 4:00 a.m. We got ready for the day. We kept our books in the seminar hall at 5:55 a.m. We all gathered in front of the college and became ready to go for a walk at 6:00 a.m.. We were arranged group-wise. We went to walking around Thovalai. We went through some rural areas and to a temple on a hill. We saw farmlands and the Western Ghats. We returned to college at 6:50 a.m. and sat under a tree. After a short feedback session, we had a discussion with Dr.Y.Sri Ram, medical officer primary health centre, Agasteeswaram. After discussion, we gathered in the seminar hall. It was the turn of the green team to anchor the session. Gby Atee, the leader of green team anchored the session and welcomed Smt.S.Rajeshwari, Deputy Manager IPRC Mahendragiri, Mr.Velaian and Dr.Y.Sri Ram. The welcome address as said by Sreenithi of green team. Dr.Y.Sri Ram was invited to give a presentation on the topic 'HEALTHY FOOD HABITS'. He gave us a clear cut idea about food science. The study related to food is called food science. It plays a vital role in our day to day life. Every part in our life is science. We brush our teeth with neem sticks in early days which were practiced by our ancestors and it came into existence 7000 years ago. Toothbrush that we all use today came into existence only 100 years ago. He told that neem sticks keep our gums healthy and instructed us not to skip our morning diet. The breakfast is our first meal of the day. It breaks the fasting in night. Due to the hat, we feel hungry and so night we don't feel hungry. The biological clock is the thermo regulation system present in our body. If we skip it, we get diseases. Breakfast is very important because it helps us to concentrate school work and makes us wake up in the morning. According to a report of England, teachers found that the students who didn't intake breakfast has low concentration in class. We should make a healthy breakfast. It should consist of pulses and carbohydrates. The traditional breakfast in Kanyakumari district came into existence 7000 years ago but the international breakfast classification came just before 25 years. If our diet is not proper, we may face constipation. To avoid this we can intake banana. Bananas are rich in vitamin A. It prevents hypertension and peptic ulcer. It is rich in proteins and decreases the risk of cancer. People often get confused that which type of banana should be in taken. The best choice is the full ripen bananas. One full ripe banana can increase and boost immunity;

bananas are made of many vitamins and has 12% of calcium. The tennis players intake bananas because sports person require lot of energy. We get different types of bananas in Kanyakumari district.

Then he told about the biodiversity hot spot. The British ecologist Norman Myers defined the biodiversity hot spot concept in 1988 to address the dilemma that conservationists face: what areas are the most immediately important for conserving biodiversity. The mother of genius- biodiversity Western Ghats is the oldest biodiversity hotspot in India. The biodiversity hotspot is automatically created by the nature. The genetic modification will be taken from the plant and will be identified in which species do it belongs to. He told us that the rock samples of Western Ghats and America are same. There are several unidentified species in Western Ghats. Himalayas were formed during the land formation. The plates which were not connected properly leads to the natural disasters like earthquakes. The British and Japan government have made strict rules that everyone should intake banana in morning and should not skip the morning diet. The rules also include that the food should be eaten mindfully and an afternoon snack can be eaten. The main point was to go to bed early. He told that eating bananas warm up the digestive system. Then he explained about the cumin seed. ITS USES ARE:

- Antioxidant
- Antiseptic
- Antiparasitic
- Cancer fighter
- Energy booster
- Facilitate digestion
- Immunity power
- Fatigue fighter
- Kidney health
- Lower blood pressure
- Natural laxative
- Sleep aid

He moved on to the topic 'water'. Our body is composed mainly of water. We should drink water regularly, especially during summers. Our body loses water when we go to toilet, through sweat and respiration. The indicators for lack of water are headache and urine excretion in dark yellow colour. We fell very thirsty during summer seasons. The person who drinks cold water drinks more whereas the person who drinks hot water stops drinking without two or three times. Lack of water in our body causes diseases. He said the steps to prepare jeera water. First we should take some water and small spoon of cumin. Heat it and it turns to yellow

colour. Filter the water and drink so that it is healthy to our body. The PH value of mineral water is 6.9. It is mild acidic and so it is free from germs. The PH value of lead is 7.2. The hot water without adding cumin will be of no taste and every minerals will evaporate. So jeera water can be used for demineralization. The hot water with jeera has a pleasant taste. This can be tested by an experiment using litmus paper. Then he moved on to the topic 'Horse Gram'. Horse gram powder reduces the fat in our blood. Soaking horse gram in a glass of water for overnight and drinking that water in morning makes us healthy. The role of kidney is to maintain potassium and sodium. Then he told that rivers and lakes maintain the ground water level. It prohibits the entry of high concentrated salt or sea water. This is similar to the process of osmosis. There are 3,300 lakes in our district. Micro irrigation is required for the ponds to maintain the ground water level. He went again back to the topic that we should consume horse gram for weight loss. The next topic explained by him was 'Fiber'. Fiber is the structural part of plants which is required for our body. Fiber is of two types- soluble fiber and insoluble fiber. Spinach consists of fiber so that the extra waste from our body can be eliminated. Insoluble fibers can help to avoid constipation, hemorrhoids etc. Horse gram has fiber content in it. He stressed the point that fiber is very much essential and it gives pain relief. A person should intake 2000 calories of diet in on a day and 14 grams of fiber. Fiber is very good for our health. Aflatoxin is the chemical which causes cancer. He instructed us not to intake any roasted food items. We Indians intake more liquid items so it can easily be digested. We shouldn't give over load to our kidney and enzymes. Pickles contain more amount of sodium so that we feel hungry as soon as we eat it. It can lead to the formation of stones in kidney. He said another important point. We should eat by sitting on the floor. It increases the digestive power and keeps the vertebrae straight. It is known as asana. It will not lead to knee problem in the future. If we sit on a chair while eating, we may face knee problem soon in the future. His final talk was given on the topic 'Coconut Milk'. Lactic acid is only found in mother's milk and in coconut milk. The coconut milk relaxes our muscles and nerves. It maintains blood sugar and contributes to strong and healthy bones. It also reduces joint inflammation. He ended his talk. We cleared all our doubts related to food science. We had our breakfast at 8:20 a.m. Then from 9:05 a.m. to 10:40 a.m. some of the students including me went to a chapel service. The other students went to the seminar hall. After the service, we went to the seminar hall at 7:15 a.m.

Then Er.A.Benzigar Rajan, Deputy Manager IPRC Mahendragiri was invited to give a presentation on 'LANDFORMS'. He told ten types of landforms. They include:

- ⊕ Plain
- ⊕ Mountains
- ⊕ Island
- ⊕ Oceans
- ⊕ Coast
- ⊕ Rivers
- ⊕ Desert
- ⊕ Plateau
- ⊕ Valley
- ⊕ Lake

He gave a clear cut definition for all the ten types. As we went to chapel service, we were not able to listen all the definitions. We listened carefully from the topic lake. Lake is a water body that has land around it. Oceans are the largest bodies of water on Earth. The largest ocean is the Pacific Ocean whereas the smallest is the Arctic Ocean. A coast is the area where the ocean touches the land. Canada is the country which has the highest coastline and Singapore is the country having the lowest coastline. In India, the Sunderbans in West Bengal and the Rann of Kutch of Pakistan stretches to about 5540 km. In India, Andhra Pradesh has the highest coastline. He said that Kanyakumari is blessed with 68 km coastline and 41 coastal regions. It stretches from Nerodai to Vattakotai. There are 11 lakhs fishermen in Tamil Nadu and among them 3 lakhs fishermen are in Kanyakumari district. A desert is a hot dry place with little or no rain. The largest desert in the world is Sahara with stretches approximately 50 lakhs sq km. The Gobi desert is 1/10 of Sahara. The Thar Desert is the largest desert in India and it stretches about 2 lakhs sq km. He told about the Kalahari Desert. Oasis is found in deserts. Rameshwaram is considered to be a semi desert. River is a long flowing body of water. It originates from mountains and glaciers. The largest river in the world is Amazon. The longest river in the world is the Nile. In India, Ganga stretches about 2000 km. The biggest tributary in India is Yamunotri. Rivers flow from west to east. Some rivers drain in Arabian Sea, Tapi and Narmada. Others drain in Bay of Bengal. He named five rivers of Kanyakumari district. They are Tamarabharani, Valliyar, Pazhayar, Paambar and Panni Vaikal. Next he told that the volcanoes are enriched with minerals. He ended his speech. Gby thanked him and feedback and vote of tanks was given by Srinithi.

Then Smt.S.Rajeshwari, Deputy Manager IPRC Mahendragiri was invited to give a presentation on the topic 'INDIA IN SPACE'. First she congratulated all of us for being selected in the young scientists programme 2014- 2015. She began her

presentation. ISRO(Indian Space Research Organization) is located in Mahendragiri in Tamil Nadu. Other than this there are many other ISRO research centers. Dr.Vikram Sarabhai is known as the father of space. ISRO began to help people apart from space exploration. INCOSPAR(Indian National Committee for Space Research) started in 1962. Next it began in Thumba which came to be known as ISRO. It began in St.Mary Mgadalena Church in 1962. They changed the place because the Earth's magnetic equator passes through Thumba. She explained us about the principal of rockets. It is based on the third law of Newton which is known as action and reaction. Oxidation and fuel combustion takes place. Rocket is used to send a satellite or an object to a particular height. Rocket is technically known as launch vehicle. The escape velocity required for a rocket is 11.8 km/s. She listed the Indian launch vehicles. They are sounding rockets which was used to study surface of an object or planet, SLV3(Satellite Launch Vehicle 3), ASLV(Augmented Launch Vehicle), PSLV(Polar Satellite Launch Vehicle), GSLV(Geosynchronous Satellite Launch Vehicle) and GSLV MK III(Geosynchronous Satellite Launch Vehicle MK III). Currently only PSLV and GSLV are in operation. Rohini-75 was the first rocket which was launched from Thumba in 1967. She told the uses of each type of rockets. PSLV rockets are used to launch remote sensing satellites. GSLV rockets are used to launch INSAT satellite for communication purposes. IRS is used for management of natural resources. PSLV is used to go around the poles of the Earth. It uses IRS types of satellites. She explained stages present in rockets. GSLV has three stages in it. First solid stage, then liquid stage, then solid stage and then finally satellite will be placed. PSLV launches 1000 kg weight in the polar orbit of 800 km. It has four stages in it namely solid stage , liquid stage, solid stage and then again liquid stage. Satellite is placed inside the heat shield. ISRO assembles and tests the liquid stage. The launching centre is in Sriharikota, Andhra Pradesh. Solid stage consists of HTPP. The propellants are sent through tanks from ISRO, Mahendragiri to Sriharikota. The rocket has an engine called vikas engine. Then she explained about GSLV. It launches 2000 kg weight spacecraft in GTO. It has three stages. The first stage is the liquid stage which has HTPP and is made in Sriharikota. The second stage is the liquid is EH25 and it is made in Mahendragiri. The third stage is the cryogenic stage. The liquid hydrogen is used as fuel and liquid oxygen is used as oxidizer. There are strap and around the solid stages named L14. The launch pad is of two types- first launch pad and second launch pad. Then she described about the GSLV MK- III. It launches 4000 kg weight satellite. IT has only two stages namely liquid stage and the cryogenic stage. It has twin vikas engine known as L110 and uses liquid oxygen and hydrogen. The twin engines fire at the same time. The three stages in assembling

method of rockets include full stage handling, containerization and transportation. The test facilities available in Mahendragiri include auxiliary system test stand, high altitude test stand, vikas engine test stand and so on. She told about Aryabhata which was launched in 1975 and Bhaskara which was launched in 1979. The INSAT is used for urban planning, finding water resources, forestry, agriculture and coastal agricultures. The INSAT applications include TV broadcasting, radio networking, tele- education, meteorology imaging and disaster warning system. EDUSAT is used for remote classrooms. SARSAT is used to search and rescue operations. SRE (Space capsule Recovery Experiment) is a test done which makes satellites to return back to Earth after its work. IRNSS (Indian Regional Navigational Satellite System) is used for GPS(Global Positioning System). It helps to locate our place. Chandrayaan- 1 is the first satellite to moon. Mangalyaan is the Mars Orbiter Mission which was carried by PSLVC25. World space week is celebrated from October 4 to 10 in ISRO. The UN outer space treaty was on October 10, 1967. Sputnik- 1 was the first satellite launched into space. She ended her speech after clearing all our doubts. Gby Atee gave the feedback and conveyed thanks to her.

At 11:15 a.m. we had a presentation by the former young scientist, S.Varsha on the topic 'ENERGY'. Energy is the ability to do work. The SI unit of energy is joule. Energy underpins modern life and we consume energy 24 hours in a day. Energies are of two types- renewable energies and non- renewable energies. The renewable sources of energy include the sun, wind, flowing water, biomass and so on. The non- renewable sources of energy include coal, petroleum natural gas and so on. The sun is the main source of energy. The energy from the sun is called the solar energy. In the interior, nuclear fusion takes place and the solar energy is not uniform. The wind is a large mass of moving air. It possess kinetic energy and that kinetic energy is called the wind energy. The water possesses kinetic energy and that kinetic energy is called hydroelectric energy. The biomass is a mixture of dead remains of living things. It contains carbon compounds and the chemical energy stored in it is called the bio energy. It is prepared in the absence of oxygen. The coal is mined from the underground. The petroleum is also called crude oil and is not obtained in the pure form. It is refined by the process of fractional distillation and is weightier than water. The natural gas is found above or below the petroleum reservoirs. It consists of 95% of methane and small amounts ethane and propane. She listed the forms of energy.

- Heat energy
- Light energy
- Chemical energy

- ↯ Hydro energy
- ↯ Electrical energy
- ↯ Nuclear energy
- ↯ Geothermal energy
- ↯ Wind energy
- ↯ Sound energy
- ↯ Magnetic energy
- ↯ Mechanical energy

Then she explained about the power plants. The solar power plant is a power plant in which heat energy of the sun is obtained and electricity is produced. The hydro power plant is a plant in which water is made to flow to great depths and turn the turbine. This rotates the generator and then the electricity is produced. Kothaiyar power plant is found Kanyakumari district. Nuclear power plant heats the uranium by the process of nuclear fission. The heat energy evolved from and the water mixes and produces steam. This steam is allowed to rotate the turbine and electricity is produced. The Kudankulam nuclear power plant was constructed on March 31,2002. Two reactors are present in the power plant. One is of 1200 mw and other is of 2400 mw. The windmill is found in Aralvaimozhi in Kanyakumari district. The wind blows at a great speed. This makes to rotate the blades of the windmill. By the way the turbines and shafts rotate. This makes the generator to rotate and the electricity is produced. She gave us some tips to conserve energy.

- ▶ Turn off lights and fans when not required
- ▶ Use CFLs
- ▶ For short distances use bicycle
- ▶ Use solar panels to conserve energy

'Think conserve energy, think go green, green planet forever'. The feedback and thanks was said by Gby Atee of green team. We had a lunch break at 12:17 p.m.

At 12:53 p.m. we had a presentation by Mr. Subramaniya Pillai. He told about 'MANGALYAAN- THE MARS ORBITER MISSION'. It is an interplanetary mission. The space program began in 1950. The rocket carries the satellite and put it in different orbits. He told us about Kepler, Galileo and Newton who were some pioneers. He explained us clearly about centric classifications.

Geocentric orbit - an orbit around the Earth and moon

Heliocentric orbit - an orbit around the Sun

Areocentric orbit- an orbit around the Mars

The rockets are launched from MST(Mobile Service Tower or MSS(Mobile Service Structure). Satellites consist of usable and supporting payload, transponders and transmitter receiver. The Mangalyaan consists of Mars payload, Mars colour

camera, methane sensor, TIR spectrometer, Lyman- Alpha photometer and neutral composition analysis. He gave us some information about the Mars Orbiter Mission

Science payload weight : 14.49 kg
Fuel pad : 850
Launch date : November 5, 2013
Tans Mars orbit injection: December 1, 2013
Mars orbit insertion : September 24, 2014
Orbital period : 77 hours
Structure : Aluminium and CFRP(Composite Fiber Reinforced Plastic)
Thermal system : Passive thermal control system

The major challenges of Mars orbiter mission were:

Radiation environment

Thermal environment

Propulsion system

Power system

Communication system

Spacecraft autonomy

Navigation

MSM(Methane Sensor for Mars) is designed to measure methane in the Martian atmosphere within PPB accuracy and map its resources. MCC(Mars Colour Camera) gives images and information about the surface features and composition of Martian surface. Phobos and Deimos are two natural satellites of Mars. LASP(Lyman Alpha Photometer) is an absorption cell photometer. TIS(Thermal Infrared Imaging Spectrometer) measures the thermal emission and can be operated during both day and night. MENCA(Mars Exospheric Neutral Composition Analyzer) is also used in satellites. The satellites are covered with yellow paper to protect it from ultraviolet and cosmic rays. He showed as an animation video. The thanks was conveyed by Abirami and the feedback Edin Jijo. The vote of thanks was proposed by Argineshia.

Next at 01:52 p.m. we had a presentation by the former young scientist, Praisin Lino on the topic 'LAND AND FOREST'. Land is a part of the Earth's surface where water is not found. About 29% of the Earth is covered with land and 71% with water. The uses of land are for farming, building houses and constructing other buildings. Land degradation is a process where the value of the biophysical environment is affected. To bring out sustainability in land, green towns and cities should arise. It means that the process of changing to an eco- friendly manner. The

reason for conserving forests include to protect wildlife, to maintain climate, to protect ozone layer and to keep the world green. Deforestation is the process of cutting down trees. The advantages of deforestation are to extend the cities and to construct buildings. Its disadvantages are the wildlife is destroyed, climate changes and so on. Satellites can be used to conserve forest by finding the places of forest fire. Maintaining and managing the forest according to the rules and laws can make it sustainable. He listed down the sustainable forest management principle and policies. They include:

- National policy and legal framework
- Ecosystem
- Communities
- Management

India is the leader of promoting renewable energy. The thanks was said by Abirami and the feedback was given by Mereshiya.

At 2:30 p.m. we had a presentation by another former young scientist, Fathima Hassima on the topic 'Water'. Water is the research topic of yellow team. Water is a transparent fluid. About 71% of the Earth is covered with water and only 3% of Earth's water is freshwater. She explained about the Chemistry and Physics of water.

Chemistry:

- ❖ Water is combined of two hydrogen molecules and one oxygen molecule.(H₂O).
- ❖ Water is an universal solvent.
- ❖ Water is neutral and its PH value is 7.
- ❖ Water is colorless and tasteless.

Physics:

- ❖ Water is a bad conductor of electricity.
- ❖ Water has high specific heat capacity.

Then she explained about the water cycle. Water cycle is a delicate balance of precipitation, evaporation and others steps involved in between. Nearly 11 countries have negative underwater table and 9 countries in Europe are in the beginning stage of water shortage. For suitability in water, water efficient systems can be used and low- flow showered with switch off button can be utilized. Water pollution is the contamination of water. Watershed is the smaller version of a river basin. Water scarcity means there is no adequate amount of water. Every 20 seconds, a child dies due to lack of water and many people are suffering from water borne disease. Diseases like cholera and diarrhoea are caused due to lack of water. If the temperature is high, there will be more evaporation and the glaciers

will melt. According to a report of Washington, droughts, floods and lack of fresh water may cause significant global damage. If there is third world war, it will be only for water. On Earth, 70% is used for agriculture, 22% for industries and 8% for industries. The green building is eco- friendly and rainwater harvesting can be used for irrigation. Water stewardship is the management or care of water. Thanks was given by Abirami. The feedback was said by Rishwi and vote of thanks by Leena Sajeev.

At 02:20 p.m. we had a presentation by Smt.C.Subathra, Assistant Professor Pioneer Kumaraswamy College, Nagercoil on the topic 'MANAGEMENT THOUGHTS'. Her main contents were management concept, clean note policy and awareness. Management = manage + men +t(tactfully). The word management can be taken as noun, process and discipline. The person who involves in managing the works is called a manager. Management refers to all that a manager does. Management refers to a body of knowledge, a practice and discipline. The objects include:

- Optimum utilization of resources
- Minimizing the element of risk
- Improving performance
- Planning for the future
- Growth and development for business
- Better quality goods
- Mobilizing the best talent
- Research and development

'Every individual works in the organized group to achieve what he can't achieve individually', Management is an essential part of any group activity. The group can be a family, play group, work group, school, business firm or a government. Management is a universal process. Wherever there is human activity, there is management. Then she explained about the clean note policy. The RBI(Reserve Bank of India) introduced the clean note policy. RBI created an awareness about the use of currency notes in a proper manner and full fill our nation objectives on the line with RBI's directions.

- ✓ Don't stapler the currency instead we can put the paper bands.
- ✓ Don't damage the notes because ATM, can't function with such notes.
- ✓ Don't scribble on the currencies.

Indian government loses Rs.2,638 crores each year because of writing or unwanted signatures on the Indian currencies. She stressed the point that the management is a very big concept. She cleared our doubts. We had a group discussion about the next meeting. We got our management concepts and thirukkural. At 3:17 p.m. we

assembles in the seminar hall. Mr.Mullanchery.M.Velaian introduced some of the new dignitaries who arrived evening at the college.

Next Shri.Mangavilai D.Rajendran, All Indian Radio Nagercoil gave us a talk. He shared some of his experiences. First he told about two Sikkim girls who stayed in his house. They visited the sea and found the white sand there. The white sand was found above the black sand due to their low density. Black soil has radiation in it. So the white sand above it obstructs the radiation. Nowadays, we take away the white sand for our own use so that the radiation increases. So we should avoid doing that. Then he said that we should thank God for giving us salty water in the sea otherwise we may have polluted the sea water also. Then he shared us an example about the Muthukuzhi field in the Western Ghats. He said that the forests are not protected by the forest conservation team and they are protected only by the wild animals. The forests should be a cauliflower forest so that it provides us rain. He then ended his speech.

Then Dr.T.James Wilson, Chairman, Sigma College of Architecture Moododu gave us a talk. First he appreciated all of us for being selected as the young scientists. He said that our talents will be improved in each and every KAP meeting. KAP provides opportunities to the children in rural areas. The programmes like KAP will surely improve the personality and increases the awareness in people. He stressed the point that rising doubts and questions should be the main way to the way of success in the programmes.

Then Shri.L.Edwin Sam gave us a talk. He said that the scientific awareness camp has brought a very good beginning of the young scientist programme. Our scientific attitude and aptitude should be increased. Our knowledge can be increased when we increased the information gathering skill and listening skill. KAP has been the basement for our success in the young age.

Next Shri.P.Balakrishnan gave us a talk. He welcomed all the dignitaries present on the Dias, then the team coordinators and guide teachers. Many experiences may be gained by us in this scientific awareness scamp.

Then Sreemeera Subramanian and A.S.Lekshmi told about the hospitality and the facilities provided by the C.S.I. Institute of Technology, Thovalai. Next Mr.Velaian told about the facilities provided by the college. He thanked Mr.Santra Babu and the woman who provided tea for us. Finally he thanked C.S.I. Institute of Technology, Thovalai.

Then Dr.R.Christu Paul, the principal of the college told that the camp was very innovative. He told that the camp may be provided a situation to the students in which they were away from the home. He said that the staff members and the H.O.Ds gave a good feedback about the students. He increased the level of

confidence in us and told us to bring out more innovative ideas. He told us to think positive and excel in life. He congratulated for nurturing good talents in children and he told that the students of KAP had excelled in their higher studies. He instructed us to respect our parents, teachers and elders. We should know how to adapt to any environment. He ended his speech by saying that the KAP has become a step stone to the future. Finally, KAP books 'Nurture Nature' were given to some of the dignitaries. The meeting ended with National Anthem. We dispersed from the seminar hall and gathered in the verandah of the college. We got into the bus and began our journey by 04:30 p.m. We reached Marthandam and happily went to our homes. The camp was not only informative but also gave us lot of experiences. We gained lot of knowledge about space, health, landforms and so on. I express my deep sense of gratitude to KAP organizer, Mr.Mullanchery.M.Velaian and other members of KAP.

THANKS TO KAP.....

2.PRADHEEPNARAYANAN
RED Team

"There are no secrets to success. It is the result of preparations, hard work and learning from failure"

Collin Powell

With great excitement and lot of dreams and expectations, myself along with a few of my friends reached Vadsery bus stand near Udupi Hotel in Nagercoil for the scientific awareness camp in Young Scientist. This camp was highly informative and fantastic. At the previous days, I was eagerly waiting for this camp as this is my first experience in scientific camp. I made myself ready there by 7:00 am punctually in the bus stand. We got into the bus along with our bags and luggage and the bus started moving. Inside the bus, I was chatting with my friends about this camp. A few minutes later, I was so relished to hear that my previous report has come in the KAP website. It took just half an hour to reach Thovalai.

The journey to Thovalai was extremely pleasant and green. The climate surrounding the region was cool and pleasant.

In Thovalai, we entered C.S.I Institute of Engineering and Technology. It was a quite good atmosphere. The infrastructure of the college was also very good. We were welcomed by the principal of the college, staffs as well as non-teaching

staffs. After a short while, we went to canteen and we had our breakfast. It was delicious. Then we kept our bags at the staying room. Then we were seated under a tree and we were asked to give a short talk on Significance of trees. A few of us gave it. Then we were waiting for the arrival and the esteemed presence of the Chief Guest and Ingersol Sir.

Velaiyan Sir gave a short speech. He asserted that we have to be punctual always and we should take notes always which would be beneficial for writing reports. He said that we should not hesitate to approach the coordinators for a better interaction.

The chief guest arrived. Louis Sam Titus, CGM of IPRC was the chief guest of this camp. Ingersol Sir also arrived.

Then we went to the seminar hall and were seated along with some **prominent dignitaries** like **Mr. Louis Sam Titus**, **Ingersol Sir**, **Velaiyan Sir**, **Edwin Sir**, **Thiruvencatam Sir**, **John RabiKumar Sir**, **Balakrishnan Sir**, **Krishnakumari Madam**, **Radhika Madam**. The programme commenced with Tamil Thai Vazhthu. Inaugural segment was done by Red Team. Introductory address was given by Abina, the Leader of Red Team. Welcome speech was given by Sabena, one of the team mates of Red Group. I was so glad to see some of the eminent personalities who have come over there in spite of their busy schedule.

Shri Velaiyan in his address said that it was a rare opportunity provided by KAP and to utilize these two days in a useful manner. CSI college has given enough facilities and proper response and, so we have to be thankful to them.

The principal of the college, **Dr. Christu Pal** gave a short talk. He thanked the god for the college's contribution with KAP. He congratulated the students who were selected as Young Scientists. He also narrated that it is a good opportunity given by KAP. Then the chief guest was covered with a shawl as a sign and reflection of respect. Ingersol Sir was also covered with a shawl. He had been a source of inspiration to all of us. He said that he takes the pleasure to contribute with KAP. From 1999 onwards there was a little contribution of CSI Institute with KAP. He also emphasized that the job done by KAP is service-oriented. He narrated a Tamil quote depicting the spiritual devotions to god.

He pointed out that economic growth in the field of Science and Technology has created an exploitation of nature. Nigeria is the country producing large quantities

of petrol. He said that, from 1960-2014, there is an increase in usage of chemicals to 70 times which had possessed a threat to the human life. Every year there is an increase in the usage of 0.4 tones of toxic chemicals. He didn't forget to suggest some of the remedial means to be sustainable which are as follows:

- Use public means of transportation.
 - Use non-convectional source of energy resources like solar energy, wind energy tidal power hydro-electricity.
 - Proper management of wastes.
 - Refrain the usage of plastics.
 - Avoid burning of fossil fuels to prevent Global Warming.
- We too agreed ourselves to enjoy this camp as an innovative and an interactive session as mentioned y him. His speech was very beneficial to me.

Followed by him, **Mr. Louis Sam Titus** began his speech. First he thanked Velaiyan sir and honored him as the brain of KAP. There was a feel of enthusiastic energy in his speech.

He asserted that our environment is being polluted at every corner, which becomes a major concern nowadays. Our biodiversity is drastically declining. It is our own responsibility to make our earth sustainable and clean like a heaven. He listed out some of the challenges we have to take to ameliorate the society. Some of them were as follows:

- Toilet wastes, effluents, toxic chemicals should be disposed in a proper way. In Tamilnadu, we have more than 1000 water treatment plant ,but are uncoordinated and improper.
- Every individual must contribute in solving the problems of fast degradation of nature.
- Should not leave the garbage undisturbed and can be allowed to dump into the pit and can be made to decompose, which in turn, can be used as manure.
- In India there are 350 people per sq km. But in Singapore, there are 7000 people per sq km, which is maintained clean. So the population is not a major concern.
- India ranks 76 among 150 countries in the innovative index. So adequate measures should be taken to bring our nation to a great extent of progress in this field.

- Switzerland, being a small country stands No1 in innovation and exploration.

Unless we admire and have the true spirit on mankind, we cannot bring our nation in a right way. And thus we should innovate and explore in all the fields to make India to stand No1 in innovative index. Then he narrated a short story between a king and an ordinary old man, which was quite interesting.

From his speech I gathered a lot of information and facts regarding Conservation of nature.

Next to arrival of Mr.Sundar Raju, the Retired IFS officer and Mr. Joe Prakash the golden words of **Ingersol Sir** began. First he revealed his pleasure to congratulate the selected Young Scientist. Then he raised a question whether it is possible to make our earth a sustainable one? Certainly Yes, the students screamed. We should serve as a flat barrier and backbone of our nation. His power point presentations realistically depicted the informations.

His topic was Sustainable Environment using Space Technology. Wide development in the advancement in technology has certain advantages as well leads to the depletion of the valuable natural resources.

He stressed that recycling is the key to sustainability. He coment on Space Technology as "eye on the sky" is really true and wonderfull. To understand what type of resources do we have and how much amount of the resources has degraded can be detected by space vision. It gives a lot of data on management of resources. But it does not form the complete solution for the depletion of resources and enables us to monitor and understand the features of our earth.

Single most enabling technology has lead to the civilization and the improvement in standard style of living which has possessed various threats to the existence of life environmentally. The same technology has to be its solution.

Earth is the only planet that sustains life. The humans surviving in this auspicious earth have started altering the sequences. Satellites enables us to understand how the cosmos has evolved, thus plays a major role in our daily life. Report from the satellite Mangalyan says, Like earth, once planet Mars also supported life due to the presence of water and atmosphere.

He stated that Cause for understanding is curiosity. For space exploration we should have knowledge about rockets, satellites space shuttles, landing modules, telescopes, remote sensing devices. Some of the challenges for the voyage to space are radiation exposure, lunar dust, food, nutrition, levels of pressure, atmospheric composition, gravity, reduced aerobic capacity and oxygen. But, however there are technologies to overcome these obstacles.

He stated that the evidence is relentlessly increasing and we are consuming the resources in an unstoppable rate. Biodiversity is now under the risk of extinction. Fertile topsoil is washed away. River sand ponds are polluted with untreated sewage waste and effluents. Thus we should understand the science and technology in right aspects.

We should follow the principle of 3r's reduce, re-use and recycle.

Early human resources were not enabled as present. With the passage of time, our needs changed and humans and we transform our nature and destroy it.

He listed some of the facts and informations which were as follows:

- 95% of the resources of the earth, which are useful for making various products are not recyclable.
- We should use efficient methods to solve the disastrous attitude of environmental problems.
- The present population of the world is 7.2 billion. So due to very dense population, there are lot of needs, thus the resources gets depleted.
- If the present rate of consumption continues, we need 13 earths.
- Destruction of forests, rivers, releasing toxic chemicals, pollution reduces the quality of nature.

"Technology has the potential to connect each citizens of country and that is why we want to relies mantra of unity with the help of digital India".

- Narendra Modi

Next he gave a short lecture on satellites.

Satellites help in monitoring the conditions of the earth. Records, scientifically says that within few generations, Delhi has to face a lot of difficulties. It is also significant for the prediction of meteorological problems and disasters. Several

researches are being carried via Mangalyan. It says that the gravity of mars is 1/10 to that of the earth. Average temperature of mars is -60 centigrade. Mars orbit mission (MOM) was the first and an extreme attempt by India which became successful.

His speech was very knowledgeable and was very significant to me in gaining knowledge on the Space and technology.

Then the mike was handed over to **Sundar Raj Sir**. His speech was informative in the aspects of forests.

He said that Judicious use and efficient usage of nature is the Sustainable Environment.

He listed the significance of forests and the benefit we gain from the forests.

When we use crackers, the harmful chemicals like nitrogen oxide, carbon-monoxide present in it is released into the atmosphere and the sound exceeds 140 decibels which leads to the Noise Pollution.

Then he said a Tamil quote which emphasized the need of gaining knowledge.

He asserted that 17.59% of the earth remains as forests, but the forest coverage to satisfy the needs of the future should be 35%.

Then some of the notable points in his seminar were:

- We should plant more trees.
- Severe actions should be enforced on the wood cutters and the smugglers who exploit the forests.
- Come forward and strive hard to make the whole earth green and sustainable.
- Stable balance of all living organisms is known as ecological balance.
- He stated the importance of Food chain or the interlink of animals for food and its consequences.
- Even the ants are more cautious and aware about the environmental hazards.
- It takes 1000 years for the formation of nutrient rich and fertile soil.
- Tamilnadu private forest act was passed in 1979 by DFO committee which aims at increasing the forest cover

- We are blessed to live in Kanyakumari district.

Then he said that Be ambitious to achieve something. Take some of the measures to advocate all the people to sustainability.

He finished his speech with a quote

"Arise! Awake, and stop not till the goal is reached.

- Swami Vivekananda

Then it was over to **John RabiKumar** Sir. His speech was on Positive Thinking. He stressed that everyone should have a positive attitude. He said that there are 4 types of thinking.

They are :

- Positive Thinking - It is connected with positive qualities.
- Negative Thinking - Connected to negative qualities that leads to failure.
- Routine - Usual thinking
- Waste - think of past

Positive thinking is a mental and an emotional attitude that focus the brighter sides of life.

Negative thinking is when all you have in bad thoughts an you think that you are the only one who is different that leads to failure.

- Be an optimist.
- Always think in positive aspects.
- Be positive always.
- Have the heart to accept the failures.
- Replace the negative thoughts with positive thoughts.

He narrated some inspiring quotes

**"Pessimist sees difficulties in every opportunity;
An Optimist sees opportunity in every difficulty".**

- Winston Churchill

"The future belongs to those who believe in the beauty of dreams"

"Don't compare of what could do wrong

Start thinking of what could go right”.

Steve Jobs was first an ordinary person, but because of his positive attitude and now he is the owner of Apple company.

“No one will manufacture a lock without a key. Similarly god won't give problems without it's solution.

If you think positively,

Sound becomes a music

Movement becomes dance

Smile becomes laugh.

Then followed by him **Joe Prakash Sir** gave a short speech.

He gave a definition for the word “Sustainable” that it is the wise management of the resources at the present while maintaining the capacity to meet the needs of the future.

Then he said a Tongue Twister

This is the house that Jack built

This is the malt that lay on the house that Jack built

This is the rat that ate the malt that lay on the house that Jack built

This is the cat that killed the rat that ate the malt that lay in the house that Jack built

This is the dog that worried the cat that killed the rat that ate the malt that lay on the house that Jack built

We all tried to tell this correctly but in vain.

Next it was the turn of Shri. **Sahajan** to give a short presentation on Personality.

The word Personality was derived from a Latin word “persona”. Combination of characteristics or the qualities form an individual's distinctive character.

Some of the qualities needed to develop one's personality are

- Believe in oneself
- Positive Attitude
- Setting goal
- Improving abilities
- Unleashing the power of own mind
- Time Management

Factors of success

- DRIVE - Arise and Shine

- ATTITUDE - The power of positive attitude
- Confidence - Self-confidence

Then we went for lunch.

After Lunch, we were taken a visit to the laboratories inside the Institute.

First we went to the Manufacturing Lab.

We saw Lathe which is used to cut the metal in the form of chips from the workpiece, according to the required size and shape.

Then we saw Drilling machine which is used to put holes in the metals

We also saw Shaper which can be used for making key way slot groove and can be used in the manufacturing of locks.

Then we saw Hack saw, grinding machine and milling machine.

Subsequently, we went to Smith Lab.

Then we saw Carpentry mechanism. I also understood the principle of Sheet metal and welding machine.

In the Thermal Lab. Sir Sajan Rajesh explained in detail on several equipments and tools. There was a proper demonstration of the working model of wind tunnel which made us to understand the concepts in an ease.

Next, we visited Computer aided machine (CAM) Lab to analyze the functions of the engine. We also had a look over advanced and the latest version of the computer.

Followed by this, we entered in the Electrical machine Lab. There Mr. Joseph and Rajesh gave an elaborate explanation on motor, generator and transformer. To prove that electromagnetic effect generates electricity, he showed a demo. In that there was no electric connection between the primary and secondary device. Due to the electromagnetic effect the electricity passes and it made a bulb to glow.

The Royal Enfield engine and a bike engine kept there which made me fascinated because I had never seen a bike engine.

Later, we arrived Power electronics and Drives Lab. There Mr. Prathap Singh gave us some information on Rectifier which converts alternating current (AC) to Direct current (DC) and he explained the 2 types of phases - Single phase and triple phase and it's voltage.

Straight away from there we were led to Power system simulation Lab where we gained some information given by Mr. Sam Harison. He said that India's frequency range is 50 hertz. Frequency is the number of rotations per second. The input voltage of single phase is 230 volts whereas the input voltage of triple phase is 415 volts.

From this visit, I gathered a lot of information, mechanism working principles of various tools and equipments used in Engineering..

Later, we came back to Seminar Hall. A seminar on the" Environmental challenges we have to face in our future" was given by **Shobhana Raj Sir**.

He stated that Earth is the only planet that supports life because of the presence of water and atmosphere. Everything that surrounds us collectively is known as environment.

He emphasized some of the factors responsible for deradation of environment:

- Land and Marine pollution.
- Urban decay.
- Land reclamation
- Economic and Technical changes.
- Effluents and domestic wastes.

Recommendations

- Promote a convention to restrict dumping harmful substances.
- Minimize the harmful impacts of pollution and organo-chlorine compounds.
- Organize world wide monitoring of atmosphere and land.
- Safeguard the existence of all animals and plants species.
- Should provide an awareness on the Sustainable Environment to all the people.
- Should use the natural resources judiciously.
- The existing trend leads to catastrophic scarcities and also leads to pollution, but the global equilibrium can be achieved by implementing scientific as well as physical means.

Blueprint for survival.....

- Minimum disruption of ecological process.
- Maximum conservation of energy.
- We should facilitate sustainable use of biodiversity and resources.
- Development of natural resources is essential for the economic development too.

Then he gave explanation on Renewable and non-renewable resources.

He concluded his speech by narrating a quote.

"Nature has everything for man's need but not for his greed"
- Mahatma Gandhi

The next seminar on Time Management was given by Shibin Sir. He asserted that the foreign services have a second tragedy and preparedness.

Time Management plays a vital role from kitchen to space station. And so time is very precious and priceless.

He explained about RAC Model (Record, Analyze and Change). According to this model we have to record the time for a day and then analyze the time you have utilized properly and the time you have misused. He said that we should always be punctual whatever may be the circumstances.

"Time and tide waits for no man"

Next we had an interaction with the former young Scientist, **Lekshmi** who gave a seminar on Agriculture in an energetic mood.

She said that Agriculture is the science of cultivation of crops for food. It involves some of the series of steps known as agricultural Practices.

Needs of sustainable Agriculture

- To increase the yield of crops.
- To satisfy the needs of Global Population
- For more production of crops.

India's Geographical Area : 329 million hectares (ha)

Cultivated Land : 145 million ha

India ranks second world wide in farm output.

Increase in population leads to shrinking of resources and more demand for food, thus leads to environmental degradation.

Improvements done in Agriculture

- Organic Farming
- Proper Irrigation Facilities
- Proper use of land
- Drip irrigation system and sprinkler irrigation

Then she gave some data on Green Revolution

- Founded by Norman Borlaug
- Resulted in technological transfer initiatives
- Rapid increase in agriculture production

Finally she concluded with a quote

"Without agriculture, there is no culture"

After having the dinner, we got seated in the seminar hall to hear Sajeev Sir's speech who gave a brief talk on useful traditional practices.

Women moving around the Pipal tree

It's leaves have a wonderful laxative as well as tonic for the body. It also treats the heart disorders. Ayurveda makes use of it extensively. It spreads around 2400 kg of oxygen and it also has some beneficial effects on health.

Practice of drawing Kolam

Before drawing Kolam, we spread water to the surroundings which is one of the means of Cleaning the environment. It consists of rice flour which is a food for ants and to feed the living organisms, it was taken as a traditional belief.

Lighting of Lamp

Gingili oil that we pour in the lamp acts as a pesticide. When it's flame stands straight, then it is the mark of a successful living.

The Importance of Vegetarian Food Practices and the oldest traditional system Siddha are wonderful to hear.

Then in order to make us relaxed there was a cultural programme . Many of us voluntarily participated.

Subsequently, we went for sleep. After a short sleep, we carried out usual activities and got ready at the corridor by 6:00 am for a morning walk around the regions of Thoivalai. It was a good landscape covered with a lot of trees, plants, animals, scenery and streams and the climate was cool and pleasant. We also visited a temple at the top of the hill which was a nice experience to me.

By 9:00 am, we got seated in the seminar hall. Introductory speech from Green Team was given by Gibi and welcome address was given by Srinidhi **Mr. Shreeram**, a Siddha doctor and Mrs. Rajeshwari, scientists from IPRC were given a red carpet welcome.

"Health is Wealth"

We had an interaction with Mr.Sriram . He too confirmed that this was a rare and a golden opportunity provided by KAP.

He asserted the importance of food. In fact, the early food habits are the best to eat. He emphasized the importance of the need for the morning Breakfast. It means that - Breaking the overnight fast. The statement- Skipping the breakfast help you lose weight is exactly false. Skipping the breakfast may cause ulcer. The food that we consume gets digested completely within 23 hours.

Then he stated some of the benefits of eating banana

- Helps in overnight vision
- Vitamin A
- To boost up immunity
- Reduces blood pressure

Banana contains 3g of protein, 6g of starch, 8g of glucose and 7g of fiber.

Even the tennis players eat banana for instant energy. Releasing the healing power of bananas is the best way to warm up the digestive system

Norman Myers, a British ecologist defined the concept of biodiversity hot spot in 1988 at first.

Then he underscored the importance of Cumin seeds.

Some of the benefits we gain from the consumption of Cumin seeds are:

- Energy booster
- Helps in reducing the blood pressure
- Immune system booster
- Anti-septic
- Sleep-aid

He said that 75% of the body is filled with water. Dehydration may reduce the resistance in our body or the immunity. An individual should drink 8 glasses a day. We have to drink Jeera water. Ph of Jeer water is 7.2, while the Ph of mineral water is 6.9. Thus Jeera water has a lot of benefits.

Consumption of soaked horse gram in the water and drinking it in morning and overnight is good for health. It releases excess calcium in our body. It also helps in burning calories. We should intake spinach and leafy vegetables. Do not eat curd with pickle because pickle has large concentration of sodium which can cause Stone. And even the consumption of coconut milk has a lot of health benefits because it contains Lactic acid.

Then we sat under a tree and we asked a lot of questions to him. He gave the clear explanation and answers for the questions. One of the notable points that he emphasized was Mebamba effect. Hot water when kept in a freezer cools faster than that of the ordinary water when kept at the freezer at the same time. And

the another one is the Silent valley got it's name because there are no Chickasaws (an insect that makes a sound).

He named some of the widely used and standard instruments and scales like Brits scale which is used to measure the sweetness, braine scale- to determine the amount of salt, International bitter unit to detect the bitterness.

He gave a lot of tips on one's health consciousness which are very essential for a healthy and a peaceful life.

Followed by him, **Benzigar Rajan Sir** gave his presentation on Landforms.

Different types of Landforms are:

- Mountains
- Valley
- Plain
- Plateau
- Lake
- Ocean
- Coast
- Desert
- River

Mountains are the high regions that are located above the plains above 600 m. Mountains are classified into three types: Fold mountain , Hill , Volcanic mountain . The highest peak in the world is Mount Everest (8848 m) located in Nepal. Godwin Austin is the second highest peak. In Kanyakumari , 22% of the landforms is found as mountains.

Valleys are the low elevated areas found between the higher lands. The biggest valley is Edhiampia (64000 sq km) found in Mozambique.

Plain is a flat area on the earth's surface. These are the fertile lands. The largest plain is located in Siberia around 1 Lakh km. Yangtze river generates 1500 gigabyte of hydropower.

Plateau are the low elevated tableland which is higher than the land surrounding it. The largest plateau is located in Tibet around 25 Lakh sq km. Deccan Plateau is the largest plateau in India.

An Island is the land which is surrounded by water on all the sides. Largest Island is Greenland

Lake is a water body surrounded by land. Deepest lake in the world is Baikal. In Tamilnadu, the largest lake is Chenbara Paccar. Theroor is the largest lake in Kanyakumari District.

Oceans are the largest water bodies. 70% of the earth is covered by oceans. Largest ocean in the world is Pacific Ocean whereas the smallest ocean in the world is Arctic ocean.

Coast is an area where ocean comes in contact with land. The longest coastline is 4,44,000 km in length located in Canada. The longest coastline in India is Ghana Kutch in Gujarat. Tamilnadu's Coastline is 1073 km.

Desert is the hot and dry with little or no rain. Largest desert in the world is Sahara desert in Africa around 50 Lakh sq km.

Rivers are the large flowing body of water. Largest river in the world is River Nile. Kaveri is the largest river in Tamilnadu.

Next, there was an interesting talk by Mrs. **Rajeswari** on Rockets. Vikram Sarabhai is the man, who is the founder of ISRO. It was first formally started in 1869 in Thumba.

Newton's third law is used in rockets. When the fuel and the oxidizer combines, it undergoes a combustion and sent through a nozzle and the thrust develops and the rocket goes to outer space and injects the satellite and it rotates which makes the communication possible.

She shared her views on different stages of rockets, PSLV, GSLV, GSLV MK III. Pay loads are the instruments in a satellite. Testing Facilities are done in Principle Test Stand (PTS). There are remote sensing satellites, monitoring satellite, meteorological satellites, Indian regional Navigational Satellite System.

Then she showed some of the pictures and images of the stage in both PSLV as well as in GSLV, Test stand Mangalyan which made us to understand in an ease.

Mangalyan is the first satellite which is sent to Mars in 5 Nov by PSLV C25 y India. Chandrayan was the first satellite which was sent to moon y ISRO.

Oct 4 - Oct 10 is celebrated as the space week because the satellite Sputnik which is sent in this day is the first satellite to be sent to outer space in the world.

Her seminar on Rockets was very informative and interesting.

Next it was over to Varsha who gave a brief talk on energy. The ability to do work is called energy. S.I unit of energy is Joule.

She gave a brief explanation on Renewable sources that it can be replenished easily and it is not affected by the human effects and added that Non-renewable sources are formed over a long geological period.

She explained some of the means of renewable sources like solar energy, wind energy, hydro electricity Biomass and how the energy is extracted from these sources. She also explained about the non-renewable sources.

Conserving energy

- Turn off the fans and lights whenever not in use
- Use CFL bulb
- Use public mode of transportation
- Use renewable sources and efficient systems.

Next, it was Shri. **Subramaniyapillai** to give his talk on Mangalyan.

He said that MOM (Mars orbit Mission) is the first satellite to reach Mars and added that it is the first satellite to be successful in reaching Mars in first attempt. Satellites have a lot of uses. Regional navigational purpose, meteorological purpose, monitoring purpose and so on. Geocentric orbit is the orbit around earth while Areocentric orbit is the orbit around Mars and Heliocentric orbit is the orbit around Sun.

He detailed that PSLV can hold 1000kg satellite and the length of it's heat shield is 3.2m and mentioned about the stages. The total weight of Mangalyan is 1350 kg and the weight of Scientific Pay Load is 850 kg.

Some of the informations he gave us include

- Mars Colour Camera
- Methane Sensor for Mars
- Thermal Infrared Imaging Spectrometer
- Mars Exospheric Neutral Composition Analyzer (MNECA)
- Medium Antenna
- MOM Simulation Modules

We had our lunch

Then **Praisan** gave his brief presentation on Land and Forest which is the research topic of my team. He said that 29% of the earth's surface is covered by Land. The present days activities including urbanization, increase in population has lead to the land degradation. He explained about the sustainable concept of land. Green town cities are very eco-friendly.

Then he underscored the importance of conservation of forests

- To protect the wildlife
- To make our earth green
- To prevent the depletion of ozone layer
- To prevent Global Warming

Deforestation is the process of clearing the forests or cutting down the trees for some purpose. If this trend continues, then the future generations have to face disastrous impacts. He also explained about Sustainable concept of forest,

Sustainable initiative by India, Sustainable forest management principle and policies. Conservation of land is needed to maintain the ecological balance.

"Water is the driver of nature"

Next it was **Fathima** to give an account on water. 71% of the earth surface is covered by water. It is a transparent fluid which is an elixir to all living organisms. It is found in solid, liquid and gaseous state. The chemical name of water is H₂O. It has low electric conductivity, high specific heat and she also demonstrated on Water Cycle.

Global world scenario

- 48 countries have to face the acute water scarcity within 15 years
- There is an increase in 40% of water demand
- 9 countries in Europe are facing water scarcity

Water Crisis

- Even at present, there is a shortage of water

18% of the population doesn't have proper water resources

Insulated technological Shower has been innovated which conserves 50% of water.

- Every 20 seconds, a child dies from shortage of water
- 50% of the hospitals have patients suffering from water borne diseases
- 1 among the 7 people do not have a proper water to drink

70% of the water is used for agriculture, 22% of the water is used in Industries and 8% of the water is used for domestic purposes.

Conservation of water

- Green building and water conservation technology
- Bringing up Rain Water Harvesting
- Establish water budget and maintain a record
- Make the judicious utilization of water

Then it was over to **Subathra** madam's share her views on Management. She stressed that Management as a noun, process and discipline

Some of the points that she highlighted were

- Optimum utilization of energy and resources
- Shrinking the elements of risk
- Well planning for future
- Mobilizing the best talent
- Objectives of Management

To create an awareness about the use of currency notes Reserve Bank of India (RBI) has introduced.

Because of stapling, writing something and using rubber bands over the rupee note, India loses 2638 crores of money

The best way is to use the paper bands over the currencies.

This camp almost came to an end. We were seated in groups and were discussing about next meet for 15 minutes. After the discussion, we went back to the seminar hall.

The concluding speech was given by Velaiyan Sir, thanking the college for providing all the facilities and also for kind and immediate response. Dr. James Wilson, Mr. Rajendran also took part in this concluding session and they gave their speech by defining the concept of Sustainable Environment, natural resources and also by congratulating us. A short feedback for the whole programme was presented by Lekshmi. Finally national Anthem was sung and we departed.

CONCLUSION

In line with our anticipation, the Scientific awareness camp was not only an enjoyable & fun-filled event, but a unique opportunity to acquaint ourselves with the latest technology that would pave the way toward a sustainable environment for the future. Eminent Scientists from a spectrum of disciplines gave us insight into several nuances of Environmental engineering which I doubt as to whether one could source from open literature. We could also sojourn over Aerospace engineering and the marvels that the nation could reap from Space technology for amelioration of the society. In tune with the information that we gathered, we also experienced the ecological balance that exists in the premise of CSI Institute of Technology, Thovalai. The cleanliness maintained in the premise by the staff and students of the Institute is a standing testimony to the prompt implementation of "Swatcha Bharat" scheme promulgated by the Prime Minister Shri Narendra Modi on 02/10/2014. The faculties of the institute received us with a deep sense of hospitality and treated us with home-like logistics and sumptuous food. We had an arena where we could mingle among the fellow Young Scientists with more intimate fervor. When we left the camp, we felt like missing something and look forward to another platform where we could relish with similar gathering.

3.S.DANI ROVAS
CO-LEADER, MAROON TEAM

.....'Experience is the best teacher'.....

The Scientific Awareness Camp, which I was eagerly waiting for was held at C.S.I Institute of Technology, Thovalai on 8th and 9th of November to develop environment related knowledge within us.

The journey to the college began at 6:30 am from Marthandam and we reached the college with excitement at 7:40 am just as planned before. As soon as we reached the college campus we had a red carpet welcome from the principal and the also the security guided us properly to the hostel. We arranged our things in the shelves and refreshed ourselves. Then we were called for a having our breakfast.

We, the Young Scientists, along with our guide teachers, team coordinators, team supporter and the organizer of the program assembled in a place in the surroundings of the college where the organizer of KAP, Mr.Mullanchery M.Velaian, gave spoke on the report and feedback. He also mentioned that our report should have an introduction of when the program started and where, then the body with what was spoken and finally the conclusion with how it inspired us.

From there we went to place in the campus of the college where we had the session of planting trees. The chief guest, Shri.Luis Sam Titus, the Chief General Manager of ISRO Propulsion Complex, Mahendragiri was also introduced from there. It was nice having him there to plant the tree.

After the plantation, Miss.Jeswini, the team supporter of Blue Team, gave a brief talk on the benefits of planting trees. In her talk she included that trees are the lungs of the planet that are of great economical value and has many medicinal values. Present young scientist students were also given chances to share their ideas on the benefits of growing trees. A few students including me shared our ideas on the importance of growing trees.

Then Shri.S.Ingersol, the Group Director, ISRO Propulsion Complex, Mahendragiri too shared his thoughts of planting trees. He shared that plants are the lungs of the Earth that process CO₂. They also replenish groundwater level. But nowadays we are deforesting the, so it is the responsibility of every individual to plant trees.

Then we all went to the hall for a meeting. Firstly we were seated team wise. Since it was the session for **Red Team** the anchored the session.

The dignitaries who were seated on the dais for the meeting were:

- ✚ Shri.Luis Sam Titus - Chief General Manager, ISRO Propulsion Complex, Mahendragiri
- ✚ Shri.S.Ingersol - Group Director, ISRO Propulsion Complex, Mahendragiri
- ✚ Dr.R.Christu Paul - Principal, C.S.I Institute of Technology
- ✚ Shri.V.Sundararaju - District Forest Officer Rtd

✚ Mr.Joyprakash

✚ Shri.Mullanhchery M.Velaian - Organizer, Kumari Arivial Peravai

The welcome address was given. Then Shri.Mullanhchery M.Velaian, the organizer of KAP gave an introductory talk. He started by welcoming the chief guests once again with ponnadai. A good beginning has a good ending; similarly, the commencement of the program with the presence of the guests would make this year a successful and joyful one, he added. He also said that whatever we do, we should have a full involvement towards it and should also function systematically.

Then he handed over the mike to Dr.R.Christu Paul, the Principal of C.S.I Institute of Technology. He started his presidential address with gratefulness to God. He continued saying that each one of us have some social responsibility that we should fulfill. He stated that KAP brings out our hidden talents and also helps to improve our knowledge. The art and science of asking questions is the source of all knowledge, said Thomas Bergrer. So, listening only is not important, but clarifying doubts is the most important. He also verbalized that God created everything for mankind and expects him to guard it. But we don't guard instead spoil it by chemicalisation of food leading to fever of our planet.

Advancement in Science is to use it in a right way and to sustain our environment but we are using it greedily and are spoiling our environment. For example, with the advancement in technology for the extraction of petroleum, we are demolishing the lands for it. He also said that, with the improvement in the technology for farming, we are nowadays getting away from Organic Farming and are reducing the fertility of the soil.

The easiest way to escape from a problem is by solving it. The steps to be followed to keep our environment sustainable is by

- ✓ Using public transport
- ✓ Using sustainable energy
- ✓ Waste management
- ✓ Reducing the emission of CO₂
- ✓ Creating awareness to schools and colleges

He finished his talk by congratulating us. His talk was really helpful for me and my teammates as he shared points related to agriculture, our research topic.

Then Shri.Luis Sam Titus, the Chief General Manager of ISRO Propulsion Complex, Mahendragiri gave the Inaugural Address. Environment is being polluted by, we humans. We don't even care of polluting them but are only suffering from the impacts due to such acts. Our ancestors have said Heaven on Earth but instead we are developing Hell on Earth. One of the most essential resources, Water is being

polluted by us by dumping waste into them. Air is being polluted by waste into them. Air is being polluted by sending harmful gases into atmosphere. It is necessary to identify the problems and to involve whole heartedly in solving them. We cannot solve any problem directly. So let us all work step by step in solving the problem.

To solve this problem it is very necessary to innovate something. That is why Thorstein Heins said 'Never lose the innovation spirit'. Even KAP aims at letting students innovate, Shri.Luis Sam Titus said. Plants are needed to be planted with a good intention to benefit our future generation. Feedback session was given held next. Though I stood first, Abhirami gave the feedback.

Next Shri.S.Ingersol, the Group Director of ISRO Propulsion Complex, Mahendragiri presented a PowerPoint on ENVIRONMENTAL MONITORING THROUGH SPACE TECHNOLOGY. Problems faced by our environment are because of Science and Technology and the solutions are also Science and Technology just like Diamond cuts Diamond. To make our environment sustainable all our resources should be made regenerative. The key to sustainability is to recycle. Space Technology is the eye on the sky in his point of view. Space Technology enables to the summing up of resources and to degradation through a Global Vision. Space Technology provides us with essential data to ail our environment and its impact. Space Technology that was developed after World War II has improved lifestyle but we are benefitting from it in a wrong way. We are making our wonderful irreversible.

Spending a lot of money for Space Technology is beneficial for us as it let us understand our planet. To answer the questions like 'How did our Earth come?', 'What would be the future of our planet?' and 'Are we alone in the Universe?' space exploration is necessary. From the recently send artificial satellite Mangalyan we are able to know that Mars once had flowing water and atmosphere. Further study can let us know on 'Why life forms do not exist now in Mars?' So, this can let us take some steps to not let our planet have the same condition. Just as Albert Einstein said 'I have no special talents but I am passionately curious', only curiosity has lead to the development on Space Exploration.

In olden days only Science was available. Only now we are developing Technology. If we still keep on growing in Technology, we would travel greater distance and extend stays. For this not only development in Technology necessary but every individual should be educated too. Space Technology is only a tool. Constructing and destroying building with the tool depends upon the person who uses it. We should technology for the usage of resources only when it is needed to dos o. But due to our greediness we are depleting the resources. He also mentioned

some satellites like SARSAT for tracking devices, ENVISAT for the observation of Earth and air, satellites to find out lost things and so on. He concluded saying us to improve human life through Space technology. His presentation let m know many things on space exploration and space technology.

Then Shri.V.Sundararaju, the District Forest Officer Rtd, gave an inspiring talk on Sustainable Environment that provides a quality life for humans. We must always have a wise use of resources. Our mother Earth does not end with us. So, it is very much necessary to save resources for future generations. It was very shocking for me to hear that, bursting crackers cause noise pollution that would affect insects, animals and even humans. They also cause land pollution when unexhausted chemicals used to manufacture crackers reach the soil. They cause water pollution when the chemicals in the land are washed away by rain into rivers. They cause air pollution when harmful gases are being given off into the atmosphere. He also suggested that 'Today's children are the leaders of tomorrow'. Future depends on we children. So, we should develop our skills. To overcome whatever huddles we face in our path we should build self-confidence to and change them into stepping stones. For this positive attitude is very essential. He then focused on planting trees. Due to urbanization we have changed forest into cities for our settlement. To increase tree cover we must plant trees in our surroundings and in the waste lands available. Do not ask what the country has done for you instead ask what you have done for the country. As students it is our responsibility to create awareness regarding planting trees to our family and friends.

We must manage environment sustainably. To maintain them hills will help us a lot. We should have a stable balance of eco-system. To do this first we should have a mind to conserve our environment. We must also understand that when deforested soil is exposed soil will be eroded during rain.

God has blessed us with four types of land except desert in Kanyakumari District. But by destroying them we are doing injustice to nature but also to God indirectly. We must try our level best to protect our environment including the coastal region. We should have a burning fire inside us to make our environment sustainable also.

We are again consecrated with a wonderful planet with 29% of land containing many different kinds of soil. They do many services to us but we do nothing except for killing them by adding chemicals. He concluded his talk with the famous words of Swami Vivekananda. Arise awake and stop not till the goal is reached. I would like to thank Him, for having influencing us with his inspirational talk.

Then Shri.M.John Rabikumar, ISRO Propulsion Complex Mahendragiri amused us with a presentation on POSITIVE THINKING. Sir started differently with a fact that states as 'Every human thinks normally 50000times a day'. Thinking is of four types.

- ✚ Positive Thinking : thinking that everything will happen good
- ✚ Negative Thinking : thinking of weakness
- ✚ Necessary Thinking : thinking of routines
- ✚ Waste Thinking : thinking of the past that is not needful

Positive thinking focuses on bright side and invites only positive results. Negative thinking focuses on the dull side and will always have a thinking of **cannot**. Positive thinking lead to success whereas negative thinking lead to failure. Friendship is precious said Thomas Jefferson. So choose good friends who can lead you to high positions. Our aim is decided by our thoughts. We should not be empty minded but should have positive thinking with only three words: **I CAN DO**. Being an optimist is very necessary and we should also develop some behaviors like seeking help, limitations, working step by step and finally to help others. Another important character to be followed is not to compare. Everyone cannot be perfect at everything. So work hard in the fields we want o achieve.

He inspired us with a plenty of quotes like Future belong to those who believe in the beauty of their dream; some people are always grumbling because roses have thorns, I am thankful that thorns have roses; everyday may not be good but there is good in every day; no one will manufacture a lock without a key, god won't give problems without solutions, so defeat your problems with great confidence; no matter how the situation is, it will change; every successful person has a painful story every painful story has a successful ending, accept the pain and get ready for success; and many more quotes. I would like to thank sir for influencing me to develop positive attitude.

So, I would like to thank sir.

Then Mr.Joyprakash has a talk. Usually we talk on things that are not there. We also talk on Sustainable Environment since it is not there and we want to rebuild it. He also said that the 5 elements are also being destroyed nowadays. So, it is necessary to protect our environment for the future generations. Due to lack of time sir did not speak much but finished by teaching us a tongue twister as a part of entertainment.

Next Shri.T.M.Shahajan, IPRC Mahendragiri showed a PowerPoint on PERSONALITY DEVELOPMENT. He first started with an activity to checkout our stress. Personality is the combination of characteristics that form an individual's distinctive character. They also include the qualities of a person's character that

make them interesting and attractive. Success is the realization of a worthy model. William A Ward clearly stated the formula to success in his quote. Characteristics necessary to achieve success are belief in us, goal setting and positive attitude, facing truth, time management and stress management. The success factors are Drive that involves adds the will to skill, Attitude that is the step to move towards success and Confidence that involves self-belief. To project personality we should be active, be lively, be enthusiastic honoring and helping others and so on. He also said that we can draw a personality tree to analyze how we use time efficiently. I would like to thank him for making me understand that the key to success is hard work and determination.

After the session we had our lunch and then we had campus visit. First we went to the Electrical Machines Lab. There Mr. Rajesh, the lab in charge. There we first saw Transformer Device. It has no moving parts and it transfer energy from one circuit to another. It has no electrical connection between two circuits and is linked by flex which produce magnetic field. Its main purpose is to reduce or increase Volts. The circuit is made of copper. Ammeter measures current and Voltmeter measures Volts. I also came to know about direct current motor and generator. Generator converts mechanical energy into electrical energy. Motor converts electrical energy into mechanical energy. The speed of the motor is measured using Tachometer. When load increases the electricity produced is also increased. We also saw alternating current motor and generating.

We next went to the Power Electronics Lab where we were guided by Mr.Spencer Prathab Singh the H.O.D. We saw a converter that converts fixed alternating current into direct current. We also saw an inverter which that converts direct current into alternating current. We also came across the devices like choppers and rectifiers. A chopper is a static device that converts fixed dc input to a variable dc output voltage directly. A rectifier is an electrical device that converts alternating current, which periodically reverses direction, to direct current, which flows in only one direction. We also saw cathode ray oscilloscope (CRO) that obtain the wave-form from different signals applied to it. We also got a chance of understanding on Integrated Circuit (IC). It is present in every home appliances like TV's, computers and so on. Finally we glimpsed at resistor that oppose the flow of current.

Next was the Electrical Simulation Lab where we were directed by Mr.HariSam. Power system is the combined operation of generation, transmission and distribution processes. Evaluation of power system is called the power system analysis. The quality of the power can be analyzed by maintaining voltage, maintaining frequency and by maintaining phase sequence. According to the demand

the generator can be switched on and switched off. TANJET is a private sector business that maintains the generation and distribution process. ISO is a public sector business that maintains the power transmission. Finally we studied on CRO that can be used to analyze and display wave. We also came to know some packages to analyze data.

Then we had a look at Integrated Circuit Lab. There we came to know on the wave forms of alternating and direct current from Mr.Prakash.

Then we set off to Mechanical Lab branches. In Manufacturing Technology Lab we were assisted by Mr.Issac and by Mr.Ebi. The first machine we saw was Lathe to remove metal in the form of chips from work piece in the required shape and size. We should use safety glasses while operating this machine. It reduces the length and the diameter of the metal. It is used to produce machine parts.

Next we saw the drilling machine used to put a variety of holes in various sizes. The drill bit is made of high speed steel. After that we saw Power Hacks that is used to cut metal. Milling machine is used for gear cutting. Its milling cutter is made of high speed steel. Surface grinding machine is used to level or polish the top surface of wood or metal. Shaper machine is used for machining, to key way and to slot.

Subsequently we then went to Thermal Lab II. Mr.Sajan Rajan led us. Wind tunnel is used to design blade and aerofoil. Refrigeration is used in functioning alternating current. Cooling Tower is to heat or cool water. We also saw many more models. The boiler is to produce steam. We also saw many more working models and a few non-working models.

Afterwards we saw CAM lab which is used to analyze and design using computer using some special software. Here no manual operation is necessary. CNC lathe give commands. We also saw a machine that does the work.

In Thermal Engineering Lab Mr.Daniel Paul showed us many engines like petrol engine and diesel engine. We also saw a machine in the lab that is used to find out how much fuel is used. We also saw a cut model engine.

In each lab after the explanation given by professors, we have feedback and thanked them. We assembled in the hall again for a meeting. Then it was the session of **Maroon team**, so we compeered the session.

MrSobanaraj sir an environmental scientist showed a presentation on ENVIRONMENTAL CHALLENGES WE HAVE TO FACE IN THE NEAR FUTURE. Earth is our habitat and is the only living place we have. It has limited resources that have evolved through millions of years. Though we have advanced technology, we are to face problems due to our dishonest acts like pollution in the near future. Not only us but also our future generation should enjoy the fruits of sustainable

environment. So, we must not deplete resources, May it be water or soil as water is liquid gold and soil solid gold. Every people should understand that we must plan systematically for a sustainable civic improvement and work carefully to achieve our goal.

We humans depend on natural resources to enrich our life. To enrich our life development is also necessary. But nowadays in terms of development we are misusing our resources because if it is misused it would lead to environmental imbalance. It is the responsibility of each and every individual to wake soon to create sustainable environment. For this we should report on Marine pollution, resource depletion, wildlife conservation and land reclamation.

He also mentioned that we must reduce the usage of pesticides and must also understand the need for public involvement in environmental policy making as mother Earth is our home and it our invaluable responsibility to take care of it.

To prevent the problems faced by our environment, he recommended some tips.

- Minimize the release of dangerous pollutants

- Promote conventions to restrict dumping of harmful substances in oceans

- Safeguard bio-diversity

- Halt whale catching as they are becoming extinct

- Create awareness on sustainable agriculture

Man has a responsibility to improve environment for the present and future. Everyone should understand that our environment is in danger and something should be done. By polluting our planet we are violating the rights of others. If we continue depleting our resources we will have to face scarcities and severe pollution levels.

To survive in this polluted world we must not waste any resource, use renewable resources than using nonrenewable ones, stable the environmental stability and to dispose waste.

We should aware about the impact that our future generations would face by we depleting resources. Nowadays groundwater level is depleting. The modern science is exploiting our nature by our wrong way of usage. Nature has everything for man's need but not for its greed said Mahatma Gandhi. Changes always go on and we must try our level best in controlling it. Low level shallows need immediate study and protection as they are being endangered. He also said that we should reuse, reuse, reduce, recycle and replace plastics.

To achieve sustainable development we must promote bio-diversity conservation, managing forest sustainability and so on. To achieve this we must create awareness in school, colleges and to the general public.

Then Shri.M.C.Shibin Herbert, NI University Kumara coil gave a talk on TIME MANAGEMENT. We should be prepared to do something useful that would cause no damages to our country. Time is precious so it should not be wasted. To utilize time properly, we must schedule time. We should analyze ourselves with the time we schedule and concentrate on our weakness and focus on our strength. We should not be lazy in whatever we do and should be perfect at it. We should have a RAC (Record, Analyze, and Change) model of managing time he suggested. We should all the activities in our life. We should analyze on how we are utilizing time, properly or wasting it. Time wasted should be changed and should be utilized properly.

Then Miss.A.S.Lekshmi, the team supporter of Maroon team amused us with a wonderful PowerPoint on Sustainable Agriculture, the research topic for Maroon team. We and our future generation cannot live without environment and so we need to protect it for us and our future.

The systematic way of producing food is agriculture. Health is wealth. So, we should have healthy food to eat and that is possible only with Organic Farming. We need to produce more quality food with limited resources to fulfill the demands of people. We have limited resources for cultivation as the land is being damaged by urbanization, industrialization and globalization. As the population is increasing the demand for food is also increasing. We fulfill these demands by using agricultural practices.

Some of the agricultural practices include, Crop Rotation (growing two or more crops in the field to make the land reusable by making it fertile), modern farming methods (harmful to our environment) and Olden farming methods (Organic Farming).

Modern farming techniques produce food in a short period of time but at the same time, it uses artificial fertilizers that are harmful to plants, soil and even to us when we consume them. The olden farming techniques produced food naturally even the manures for the plant were natural though the yield would be low.

The geological land area for India include 329 million hectare. Among that the cultivable land is only 145 million hectare. She also gave a clear idea on Genetically Modified Crops. They are plants used in agriculture, the DNA of which has been modified using genetic engineering. The threats to present day agriculture are real estate, globalization, pollution, global warming, unstable climate, inadequate irrigation facility, poor seed quality, lack of storage, lack of new technology in farming, lack of farm labors, the increase in population leading to increase in demand for food, soil erosion and finally scarcity of water and land for cultivation.

We can improve farming techniques by practicing organic farming, crop rotation, efficient irrigation techniques, proper use of land, good yield, healthy soil and conserving water. To practice crop rotation green leaf manure, vermin compost, bio-fertilizers, animal husbandry and biological management can be used.

She also discussed on Green Revolution. The father of Green Revolution is Norman Borlaug. As we add fertilizers, that contain salt, to the soil, the farmer's friend earthworm dies. Development should be sustainable and good laws should be introduced and implemented, and thus she concluded her presentation. Her presentation made us to be very attentive and she entertained us by asking questions to us very often. We also had a debate between ancient and modern agricultural practices.

Then the brain of KAP informed us about our next meet at MACET in Marthandam where we will have to present power points on Management Concept and for each team a leader was appointed to collect the reports on our topics.

Then Shri.C.Sajeev showed us a power point on USEFUL TRADITIONAL PRACTICES. The first traditional practice we saw was the Women moving around the Pipal Tree. The scientific name of the tree is *Ficus religiosa* and is called arasa maram in Tamil.

Pipal tree, the king of trees has a great medicinal value. It serves as a great tonic. It absorbs 1808 kilo carbon dioxide and release 2400 kilo oxygen per day. Its root, bark and seed have a wide range of uses. By women rounding the tree they would be free of diseases and they will not be easily affected by any diseases.

Another practice that he mentioned in his power point was the Drawing of Kolam. It is usually called Rangoli in northern states. To draw it, first the surroundings of the house are being cleaned and are cleaned with cow dung. It is then washed with water and then the kolams are being drawn using rice flour. It is believed that by drawing so, we will not let any insects or animals into house. Also by drawing so they are able to feed these small crawling creatures.

The next practice was Lighting Lamps. They are usually lighted at the beginning of any auspicious events. We light them to move away darkness and to brighten light to the world (,Us; mfy ntspr;rk;). Lighting lamp with Gingili Oil (Nallennai) rather than other oil is very beneficial as the smoke produced by burning them can be used as pesticides also. Burning candle will cause cancer, asthma and many other diseases but burning of Gingili Oil has no side effects.

Another traditional practice is the Vegetarian Food Practices. Whatever our ancestors do, there will something meaningful in that particular thing. The six tastes (mWRit) are sweet, sour, salt, bitter, pungent and astringent. Sweet taste makes us fat and help in tissue growth. Sour taste is fat producing and adds taste.

Salty taste is good in the production of saliva. Bitter taste improves nerve strength and immunity power. Pungent taste should be medium in the food we intake and it improves bone strength. Astringent taste is used to cure stomach related diseases.

The last useful traditional practice is the Oldest Traditional Treatment System SIDDHA. Allopath medicines have side effects but Tulsi which is a traditional medicine has no side effects and cure cough and cold. The food you eat is the safest and most powerful form of medicine. So, let us all have a balanced and healthy food diet.

Then from 9:00 pm to 10:00 pm we had our cultural programs and Miss.A.S.Lekshmi organized the program. Every student participated in that and expressed their talents in a group and a few students expressed it individually. All of us enjoyed the cultural programs. Then the meeting 8th of November came to an end at 10:05 pm with a small prayer send to God.

The next day morning sharply at 6:00 pm we had walking from the college campus to the Thoivalai Murugan Temple. From there we were able see Thoivalai waterfalls and also the place where the Western and Eastern Ghats join. While returning to the college campus we assembled together in a place and from there students were chance to share their opinion on the benefits of walking. Many students including me shared our opinions on the benefits of walking. The point that the students shared were the circulation of blood, reduction of weight, refreshment of mind, reduces stress and many more valid points. Shri.Mullanhchery M.Velaian said that walking is good for health as it is good for people who have diseases like cholesterol, sugar and so on.

From there Dr.Y.Sri Ram the medical officer primary health centre, Agasteeswaram and Smt.S.Rajeshwari deputy manager of IPRC, Mahendragiri were introduced. We reached the hall at 7:10 am. It was the session of **Green Team** and they anchored the session.

Dr.Y.Sri Ram showed us an informative presentation on HEALTHY FOOD HABITS. Everything around us involves Science. Even the food we eat is categorized under Food Science as we cannot live without food. We should sit on the floor to eat as it will prevent knee pain. And will make the vertebral column straight. It will also cause no back pain.

Neem is a medicinal tree that prevents gum diseases. Drinking coffee is adverse to health because people addict to it as it provides energy for only a few hours. Eating pickle is bad to health. Eat like a king in the morning, medium diet in the afternoon and only liquid diet at night. Whatever you eat, eat mindfully.

Firstly he said about eating breakfast. By skipping breakfast we will lead ourselves to many diseases. It is very necessary to eat breakfast because we fast at night without eating anything. Skipping breakfast doesn't reduce our weight but instead welcome sickness. If we don't eat breakfast we will feel sleepy in the morning, look dull and less concentration. To have a healthy breakfast it should include a drink, carbohydrate (puttu), whole grain (green gram) and banana. Eating breakfast will increase intestinal motility.

Having banana along with breakfast is healthy because it improves eye vision, reduces blood pressure, prevent peptic ulcer, protect breaking down and increases brain power. Eating one full ripe banana per day is needed because it maintains the weight, produce tumor, boost immunity, boost energy and warms up digestive system. Banana consists of 12% of potassium so it is a sport diet.

Places with bio-diversity were called as Hot Spot by Norman Myer. Hotspot is the motherland of genus. Western Ghats, the oldest rock in India is the Hotspot of India. Pothigai Malai and Maruthuva Malai are also hotspots.

Cumin seeds help to postpone weight, fight cancer, maintain kidney health, boost immune system; lowers blood pressure, sleep aid and treat asthma.

Water is essential for life. We should drink more water in hot seasons. If we don't drink water we cannot concentrate, headache and tiredness. We should drink 8 glasses of fluid a day. Jeera water is healthier than mineral water.

Horse gram is used in the excretion of excess amount of Calcium. They also help in the control of Blood Pressure and weight loss.

Fiber is of two types. One is soluble and the other is insoluble. Spinach is rich in fiber. They also help in the removal harmful substances in the body. They also help in the intestinal function and weight management. Less amount of fiber will lead to heart diseases. To increase fiber content in the body, we should drink plenty of fluids.

Coconut milk is the only substance with the nutrients present in mother milk. It reduces joint inflammation.

Then we had our breakfast and after that at 9:00am students interested went to church. Before going to church we were given chances to clarify the doubts we had to Dr.Y.Sri Ram. Many students asked doubt and explained the answer for it in a way that we would understand. We then went to church and the mass finished at 10:35 am and after that we went to the hall. When we reached the hall seminar was going on. We had our snacks and then entered the hall.

Er.A.Benzigar Rajan deputy manager of IPRC, Mahendragiri showed a power point on DIFFERENT LANDFORMS. The ten different types of land forms that he

explained were plain, plateau, valley, lake, mountains, ocean, island, coast, rivers and desert.

Plains are large areas of flat land with few trees. Plateaus are areas of fairly level high ground. Valleys are low areas of land between hills or mountains, typically with a river or stream flowing through it. Rift Valleys are the largest valleys in the world. River valleys are the smallest valleys in the world. Lakes are water that has water around it. Mountains are large natural elevation of the earth's surface rising abruptly from the surrounding level; a large steep hill. Normally, Volcano Mountains have minerals in it. Oceans are the largest water bodies. The largest ocean is Pacific and the smallest ocean is the Arctic. Island is a piece of land surrounded by water. Coast is the region where the ocean touches the land. The highest coast is in Canada and the lowest is in Singapore. Kanyakumari has coast in about 41 villages and there is a coast of 68 km from Nerodi to Vattakottai. Rivers are long flowing body of water. They are originated from mountains in the form of glaciers. The biggest and the longest river in the world is Amazon. Rivers flow from west to east. In India all the rivers except Narmada and Tapti drain into the Bay of Bengal. Desert is a hot dry place with little or no rain. Few deserts in the world are the Sahara Desert, Gobi Desert and Kalahari Desert and so on. The largest desert in India is the Thar Desert with about 2 lakh square kilometer. Deserts usually have oasis where water is being found.

Then Smt.S.Rajeshwari, illustrated a power point on INDIA IN SPACE. Tamil Nadu ISRO Centre is in Mahendragiri. Vikram A. Sarabhai is the Father of Space. The purpose of space technology is that everyone, rich or poor, they all should get benefitted. INCOSPAR was started in the year of 1962 and was renamed as ISRO in the year of 1969 in Thumba Church where the magnetic equator passes. In the year of 1998 Thumba Church was rebuilt to a Space Museum.

Rocket follows the principle of Newton's IIIrd law. Rocket is a launch vehicle and is used to send objects to the Earth's orbit. Speed is needed for rocket to be launched. Escape Velocity has a velocity of 11.8km/s. Orbital Velocity has a velocity of 7.8 km/s. Examples of launching vehicles are Sounding Rocket for the study on Earth's Surface, Satellite Launch Vehicle (SLV3), Augmented Satellite Launch Vehicle (ASLV) for communication, Polar Satellite Launch Vehicle (PSLV) for remote sensing, Geosynchronous Satellite Launch Vehicle (GSLV), Geosynchronous Satellite Launch Vehicle Mark III (GSLVMKIII). IRS is for the management of natural resources. Earth move in the direction of west to east but PSLV move surrounding the polar region from one pole to the other.

Parts of GSLV are satellite, heat shield, cyro stage, liquid stage, solid stage and liquid stage. It used to lift satellites of 2000 kilo. It has 3stages: the first

solid, the second liquid and the third cryogenic. Fuel is in liquid state and when the oxygen meets with it, it is oxidized and thus burns. PSLV is used to lift satellites of 1000 kilo and launches to 800 km. It has four stages: the first solid, the second liquid, third solid and fourth is in liquid stage. To store propellants and oxygen tanks are present. GSLV MkIII is used to lift satellites of 4000 kilo it has two stages: the first is in liquid and the second is also in liquid stage with oxygenic. Twin engines are tested by full stage handling, containerization and then transportation. For sending satellite 1st integration, 2nd countdown and 3rd lift off. The satellites sent by rockets are Aryabhata, Bhaskara I, Resourcesat-3, IKONOS, INSAT, IRS, TS, KALPANA I, EDUSAAT, SARSAT, SRE, IRNSS, MANGALYAN and many more. From October 4 to 10 World Space weeks is being celebrated.

Then Miss. Varsha, the team supporter of Green Team showed a presentation on ENERGY. It is the ability to do work. The SI Unit of energy is Joule. It underpins the modern life. It is of two types. One is Renewable and the other is Non-Renewable. Renewable Energy consists of Sun, wind, water and biomass. Non-Renewable Energy consists of coal, petroleum and natural gas. Solar is the main source of energy and is not uniform everywhere. Wind is moving air and energy obtained from it is called wind energy. Possess kinetic energy. Windmills are used to convert wind energy to electrical energy. Hydro energy is obtained from moving water. It also possess kinetic energy. Biomass energy is obtained from carbon compounds and dead remains of living things. Coal is composed of carbon, hydrogen, oxygen, nitrogen and sulfur. Petroleum is also called as crude oil. It is composed of hydro-carbon, water, salt and earthy particles. It is lighter than water. Pure petroleum is obtained by fractional distillation. Natural gas is found in the earth's crust. Its main component is methane. The different forms of energy are Solar Energy, Heat energy, Light Energy, Chemical Energy, Hydro-Energy, Electrical Energy, Geothermal Energy, Wind Energy, Sound Energy, Magnetic Energy and Mechanical Energy. Solar power plant is used to generate electricity using the energy from the sun. Nuclear energy is the energy released during the processes of nuclear fission and fusion. She also showed us much information regarding the generation of electricity from the windmills and from the hydro-electric power station. To conserve energy turn off it we not in use, use CFL bulbs, think to conserve energy, think to Go Green and do the necessary steps to achieve the same and build a Green Planet.

Then Shri.N.Sivasubramaniapillai, IPRC Mahendragiri, showed a presentation on FASCINATING SPACE THROUGH ISRO MANGALYAN. It is an inter-planetary mission. We send satellite for the betterment of human life. Kepler, Galileo and

Newton were the pioneers who studied in planets. Geocentric orbit is around the planet. Heliocentric orbit is around the solar system. Launching the rocket with escape velocity, it will not come down. Launch vehicle procedure include completed, operational and development. Mobile service towers are built to withstand sounds and heat.

Critical mission by PSLV

Mission to the moon and Mars

Chandrayan I by PSLV C11 in the year 2008

Mangalyan by PSLV C25 in the year 2013

In the mission of MOM

Scientific payload weight : 14.49 kg

Fuel load : 850

Launch date : November 5, 2014

Trans Mars orbit injection : Dec 1, 2013

Planet Mars orbit perihelion : 865 km

Planet Mars orbit aphelion : 80000 km

Planet Mars orbital : 77 hours

Major challenges

Solar radiation

Thermal environment

Propulsion system

Power system

Communication system

Spacecraft autonomy

Navigation

Instruments

Mars color camera

Tri-color Mars color camera

Monitoring dynamic events

Photos

Demos

LAP to understand the loss of process of water. TIS are to find out the composition and mineralogy of Mars. MENCA is to find mass spectrometer based payload. Medium gain antenna is to avoid radiation.

Next Praison Lino showed a presentation on LAND AND FOREST. Land is the part of Earth without water. 29% of the earth is land. It is used to build houses, construction and farming. Land capability differs from place to place. Land degradation is the process in which the value of the biophysical environment is

affected by a combination of human-induced processes acting upon the land. Land contamination is the land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land. This affects vegetation also.

Conservation of forests

- Protect wildlife

- Maintain climate

- Protect ozone

- Keep the world green

Deforestation is the cutting down of trees to build buildings and to destroy the habitats of wild animals. As it is necessary to cut trees, if we cut one tree, plant 9 trees. We should develop new technologies to protect forest and to keep an eye on it. By doing this we can make our forests sustainable.

Forest management

- National policy and legal frame work

- Eco-system

- Communities

- Management

It is the responsibility of each and every one to promote renewable energy development and tracking global climate change,

After his presentation, Miss. Fathima Hashima showed her presentation on WATER. Water is a transparent fluid and out of 71% of water available, only 3% is fresh. The chemical formula for water is H_2O . It is a universal solvent. Pure water is tasteless and odorless. In global water crisis there is a shortage of water across the world. To reduce the flow of water we can use less flow water system and to reuse water we can use Grey Water System.

Due to water pollution we are facing scarcity of water. Every 3 seconds a child dies due to the drinking of contaminated water. So we must reduce the habit of dumping waste into river and other water bodies. If we continue contaminating water, we will definitely have IIIrd world water for water.

So, let us all start conserving water as 'We will not know the worth of water till the well is dry'. It is also our duty to create awareness to the society regarding this.

Then Smt. C. Subathra, Assistant professor of Commerce, Pioneer Kumaraswamy College, Nagercoil gave us an idea about MANAGEMENT THOUGHTS.

Management can be defined as managing men tactfully. If a person wants to be successful it is very necessary to have objective as 'A plan without a goal is just a wish'. The main objective a person should have are

- Optimum management of resources
- Minimizing the element of risk
- Improving performance
- Planning for future growth and development
- Produce better quality good

Than working as an individual, working as a group will develop our management skills and that is why KAP is working as an organization. Essential part of group activity is family, playground, work place, school, business firm, government. Every human activity should include management.

Then she reported on Clean Note Policy. For this currency notes should be used properly. We should not staple the notes and should also avoid using rubber bands. We use a paper band instead of this. We also should not fold the notes as we should give some respect towards money. She also showed images in which money was not at all given respect. This should be avoided, she said as a conclusion.

After this we had a discussion session in our groups. Team motivator, supporter, guide teacher along with ten members gathered in Maroon Team. We were given a clear idea on how our report should be written, how the power point should be made and finally how the essay should be written. We also clarified our doubts regarding the above mentioned topics.

Then we assembled for the Valedictory Session. Shri.Mullanhchery M.Velaian addressed the gathering. He welcomed Shri.Mangalvilai- All India radio Nagercoil, Dr.T.James Wilson -chairman of SIGMA College of Architecture College Moododu, Shri.P.Balakrishnan, Sri.M.CShibin Tad, Shri.T.M.Shahajan, all the other coordinators, Guide Teachers and the Former Young Scientists.

Then Shri.Mangalvilai shared a lot of information in a very short time. He said about black soil and white sand. We are destroying the protective white sand that prevents us from the black soil that produces radiation. In the same way, god created wild animals to protect forests being deforested but now we are killing the natural defenders. He concluded saying that, we are being given opportunity to make our environment sustainable. So let us all utilize the chances properly.

Then Dr.T.James Wilson spoke. He said that improvement is there nowadays and that is being realized. KAP provides opportunity to rural children for their improvement. Also we must improve our personality. There is no end to learning and so we must learn more by asking doubts.

Then Shri.L.Edwin Sam articulated that this is a good beginning for KAP. We must improve our knowledge as this scientific awareness camp gave us a nice experience. We are given opportunity to improve our knowledge and we must make

use of it properly and listen to the ideas of our team authorities and thus improve our knowledge. So let us have a good ending from the good beginning.

Then Shri.P.Balakrishnan gave a word. This camp has given us a different experience and from the training we got we should mould our talents.

Then Miss.A.S.Lekshmi thanked the college. Then the organizer of KAP thanked the college and their members for their bigheartedness, hospitality and generosity. He especially thanked Chandrababu sir, the aunty who helped in the supply of food, the security, the principal, the driver, our guide teachers and the H.O.Ds. Then the principal of the college uttered his words. He congratulated and wished us to think positive and achieve great heights in the future. Then we started our journey of return at around 4:45 pm.

In this report I would like to thank our guide teacher, Mrs.Babitha who encouraged me in coming forward to speak. She also came along with our team where ever we went she supported our team whenever needed. She shared her ideas to anchor the session when it was our turn to do so. She really worked whole heartedly for the betterment of our team. So I would like to thank her.

I would like to thank our team supporter, Miss.A.S.Lekshmi for helping us in every activities of our team. Even when I went to the church and returned, the program started. But she said the important points that the person had mentioned. She also helped for the anchoring and she also said the format to write the report. So, I thank her also.

I would also like to thank the talent motivator Smt.C.Subathra who clarified all of our doubts and we also introduced ourselves to her. She explained us about the management concept presentation, her ideas were very useful to us. She is friendly and a good motivator. I thank her, and also thank the organisor for providing us such motivator for our team.

It is my greatest privilege to thank the management of CSI Institute of Technology, to make the camp successful and a beneficial one by providing with all the facilities whenever needed. They gave us a special welcome. The way they treated us made me feel surprised. Everyone took their part well. And they cared all of us as a parent and I would like to thank each and every one of them in my report. It is also my important duty to thank them for their kindness, generosity and their hospitality.

This meeting gave a really nice time and a homely feeling though I stayed away from my house. This camp not only gave us a memorable experience but also enabled me to gain more knowledge on various topics related to Science. This camp has also made me to come forward to speak. This camp has made to feel a bit more courageous.

So, I would like to thank KAP for providing me such a great opportunity which modified my talents. I thank KUMARI ARIVIAL PERAVAI whole heartedly.

SPECIAL THANKS TO THE ORGANISOR, THIRU.VELAIAN.

4,N.Srinidhi,
Green Team

"The best way to predict the future is to create it."

"The first and sustainable function that any person claiming to be a leader required to do is to lead-by-example only"

With a lot of excitement and anxiety, I with my friends went to CSI institute of engineering and technology, Thovalai at sharp 8:00 am. The college, by the virtue of its well laid out landscape exemplified the essence of biodiversity. Then we went to a hostel inside the campus. At 8:45, we met

- Shri.Velaian
- Shri.Thiruvencatam
- Shri.Edwin Sam
- Shri.Shibin
- Shri.John RabiKumar
- Shri.Balacrshnan

Velaian Sir advised with some useful tips which would guide us to sail through the programme in a professional manner. They include:

- Inculcate a practice of writing reports quickly
- Don't hesitate to give the feedbacks
- Interact intimately with coordinators, guide teachers, etc... To absolve doubts and apprehensions if any.

Then we had our Breakfast at the canteen.

Then, we entered the tree planting session. Initially, the programme made a head start with introductory remarks by Jeshwini (former Young Scientist). Shri. Louis Sam Titus , hief general manager, ISRO Propulsion complex, Mahendraagiri planted a sapling. He narrated that"The trees save 20,000 litres a day. Without trees man cannot exist in earth. One could make his/her birthday memorable by planting a sapling as a mark to respect the Nature."

After this, we went to an auditorium hall where Velaian Sir welcomed

- Louis Sam Titus Sir
- Christu Paul Sir
- Ingersol Sir

who adorned the podium.

The programme commenced with *Tamil Thai Vazhthu*

Velaian Sir acclaimed that the camp was a good opportunity giving us exposure to Biodiversity in this campus. He pointed out that Multi-faceted personalities like Louis Sam Titus Sir and Ingersol Sir had made it convenient to preside over the programme despite their busy schedule. Velaian Sir thanked the administration of the institute for having spared their picturesque premise for this scientific awareness camp. He thanked all the coordinators and guide teachers.

He acknowledged that Ingersol Sir is always a great source of inspiration to KAP. He advised us to utilize the opportunities that we have got.

Then Christu Paul Sir (The principal of the college) thanked the gracious god. He told that the contribution of ISRO is great in South Tamil Nadu. He asserted that the office bearers of KAP have been rendering in the interests of the society.

Due to chemicalization of food, many unidentified diseases have come. The highest source of petrol is Nigeria and South Africa. This is the reason for the reduction of agricultural practices there. From 1916 to 2014, there is a 170 times decrease in the production of organic fertilizers. We have to look for the natural way of livelihood. The points that he emphasized were as follows:

- Use large means of Transportation
- Use alternative fuels and energy
- Waste Management becomes important
- Reduce activities that contribute to Global Warming

The organizations like KAP, ISRO can contribute to a clean India.

The next speech was given by Louis Sam Titus Sir who at first thanked Velaian Sir and honored him as the Brain of KAP. He gave enthusiastic motivation to the participants.

Environment is polluted and Biodiversity is drastically degrading. He emphasized that Earth is a heaven. Hard work is needed to restore Earth to its heaven status. He mentioned that, In Tamil Nadu, we have 14, 000 water treatment plants, but not properly utilized or coordinated. The points which he highlighted were:

- We have to ensure that the water is pure and healthy.
- Wastes have to be separated and decomposed properly.
- Population is not a big concern.

- Being Young scientists, we have to realize our responsibility and contribute towards the benefits of mankind.
- Make India first in the innovative index

He also told a real story which he heard in his childhood.

Then there was a power point presentation by Ingersol Sir. He said that it was his pleasure to congratulate every one of us for having been selected.

The points he listed were as follows:

- Let us not have a negative thinking about a Sustainable Environment.
- Human Nature is focused on the quest for new knowledge
- On the contrary, Science and Technology is becoming a source of danger for the nature.

The beautiful phrase referred in space science is "eye on the sky". Space science will give a clear idea about how badly we are managing the resources... First, we have to realize the degradation of our mother Earth and how we are exploiting the nature .He emphasized that we can recover our earth only when we are aware of degradation and it can be done due to hard work.

He also explained that Once Mars also had an environment like earth. There was excess water and air was available in Mars. Records suggest that the present condition of Mars is due to degradation. Likewise, if Earth is being degraded as of now, it would one day or other, become a Barren planet like Mars.

In the light of this concern, it is important for us to save our Earth. But today, the exploitation of Earth has no ceiling indeed. The main tools of space exploration include rocket, artificial satellites, space probes, space stations, etc... The other points that he insisted upon include:

- We are depleting our environment and resources without sustainability. Be selfless.
- Some difficulties to overcome (for an astronaut) include - radiation exposure, Lunar Dust, Food and Nutrition, Mental Disorders, etc...
- Astronauts are often helped by Science and Technology.
- At first when Galileo Galilee saw solar system via telescope, he just drew them in a paper. But today, we have cameras. In the future, we have to make attempts to stars and galaxies far away from the Earth.
- We have lost Biodiversity. The mankind is unaware about this concern.

We can use science both for construction as well as destruction. The present principle of humankind is Take-Make-Waste. So let us follow the 3R's principle of Reduce-Reuse-Recycle.

Nowadays Satellites are made to assume the air quality and pollution levels of a place. On the whole, his speech was really very much informative and quiet factual too.

Then it was over to Sundar Raj Sir. He welcomed the organizer, coordinators, guide teachers, etc... At first, he gave the definition of Sustainable Environment. The present consumption and conservation of nature (environment) must help the future generations. He stressed that the Bursting of crackers release 140 db rather than loudness of 35-55db. Also chemicals are used to make these crackers which results in release of toxic gases and moreover lead to water pollution. They further contribute to Noise Pollution. According to him bursting crackers is detrimental to nature and we have to stop it.

The information he narrated about forest cover include:

- Once, this Kanyakumari District was full of dense forest. But now they are converted into buildings, roads, and other residential areas due to urbanization and population exploration.
- We must try hard to increase the forest cover and the persons like the woodcutters and smugglers must be given harsh punishments.
- Students can create awareness among their families, friends, etc...

There has to be a balance in the Biodiversity. This empowers the ecosystem. He also narrated the use of HACA (Hilly Area Conservation Authority). According to this, to build or construct any college, the authority has to get the permission from HACA. Hills and Hillocks help to maintain the environment sustainably.

Tamilnadu Private Borders Act passed in 1979 aims at conserving and preserving the trees. Today, the major concern is that people do not follow the rules and they are often violating the rules. This is becoming an obstacle for the conservation of nature i.e. trees. He narrated his own story with this theme.

He asserted that we are The blessed and beautiful Kanyakumari District has been destroyed ruthlessly both by pulic and government.. Some important laws are passed by the government for safeguarding the nature.

He told another story of him where his team strived a lot to save *ShakuntalaMalai* Hillock.

He concluded his speech with a famous quote stated by Swami Vivekananda -

"ARISE, AWAKE, AND STOP NOT TILL THE GOAL IS REACHED"

Then, John Rabi Kumar Sir came to empower our Positive attitude. He made a comparison between Positive and negative thinking.

He told that Positive thinking determines success whereas Negative thinking determines weakness.

Positive thinking is a mental and emotional attitude that focuses on the bright side of life. Negative thinking is an attitude towards failure.

He emphasized that we have to be voluntary and approach everyone without hesitation. According to Newton's third law of motion that states that any action has an equivalent opposite reaction, our thinking reacts in our life. Positive and Negative thinking both are contagious. He narrated a story of his own son which had its theme to have good companions.

He also asserted some moral quotes which were:

- "The pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."

-Winston Churchill

- "Don't compare anyone in this world. By doing so, we insult ourselves."
- "The future belongs to those who believe in the beauty of their dreams"
- "Everyday may not be good, but there is something good in everyday."
- "No matter how bad or good the situation, it will change"
- "Every successful person has a painful story. Every painful story has a successful ending."

If you think positively:

Sound becomes music

Movement becomes dance

Smile becomes laughter.

The story of Steve Jobs, founder of Apple i-phone was really amazing. Don't imagine I am useless. Utilize the minimum opportunity you get.

He concluded his speech by quoting

"Heal the past, live the present, dream the future"

His speech enriched us with a positive power.

After this, Joe Prakash Sir exhibited his speech on a general topic. According to him the main five resources (called as panchaboodhangal in Tamil) are getting depleted. He stressed that we gain a lot of knowledge from KAP. Then he challenged us to recite a tongue twister:

"This is the house that Jack built.

This is the malt that lay on the house that Jack built.

This is the rat that ate the malt that lay on the house that Jack built.

This is the cat that killed the rat that ate the malt that lay on the house that Jack built.

This is the dog that worried the cat that killed the rat that ate the malt that lay in the house that Jack built."

Followed by him, we had a good interaction with Sahajan Sir. There was a stress test. He told that the combination of characteristics or qualities that form an individual's distinctive is called personality. He quoted:

"Stop talking to people about what you will do; Show them instead of what you are doing"

-Robert Holden

The points he emphasized were:

- Success is the realization of worthy model.
- The success factors are: Drive, Attitude, and Confidence.
- The measures to improve our personality are being lively, enthusiastic, properly attired, pleasant outlook, honoring others, etc...

Then we had our lunch .The hospitality was really fabulous.

We had a field trip where we visited several laboratories. At first, we went to Integrated Circuits Lab. There Immanuel Sir, an electronics teacher, explained about CRO (Cathode Ray Oscillator). We also learned about Alternating current and Direct current. We had a clear idea about what is Transformer, Digital Trainer Kit, Soldering Iron, Bread Board, etc...

Then, we had a visit to power stimulation Lab where Sam Harison Sir taught about Generation, Transmission, and Distribution of electricity. We came to know about ISO (Independent System Operator), Evaluation of Power System, etc...

Then, Rajesh Sir explained about Big Transformers, Generator, Rheostat, Motor and Ammeter.

It was Shri. Spencer Pratap Singh who guided us in the Power electronics Lab. Sir and Jabakar Sir taught about rectifier, cyclo converter, chopper, AC voltage controller, etc... The use as well as working principle of Lathe, Hacksaw, Milling Machine, Cylindrical Grinder, etc...were neatly explained and demonstrated in the Manufacturing Technology Lab. by Ebi Sir.

In the CGE lab, we were taught in detail about CNC milling machine.

For the first time we came to know about 2 stroke and 4 stroke petroleum engine in thermal Engineering Lab. On the whole, there was a comparison between working machines and computerized machines.

In this age itself, I have got a good experience of learning about various tools and equipments used in engineering.

The next speech with astonishment of the challenges we face in the future was given by Shobana Raj Sir. He said that , being the leaders of the future, we face various challenges. He even narrated his experience facing all those challenges.

The information narrated by him include:

- The earth is the only home where we exist. Everything which surrounds us is called Environment. Water is liquid gold and soil is solid gold
- We have to plan for sustainable civic improvement programmes
- Human beings depend on natural resources. Unpolluted environment along with these resources enriched the human life. We have to maintain the ecological and environmental balance.

It was very interesting to hear that even the tiny ants are cautious about environmental problems; the humans can also strive for the upliftment of the environment. Then, there was a talk about the impacts of the pollution. The remedies he stressed were:

- Organize world wide monitoring of atmosphere.
- Promote gene banks to protect Biodiversity.
- Increase emphasis on population control.

The points he deliberated were:

- Blue print survival covers the practice of minimum disruption of ecological processes, Arrangements for food production and waste management.
- Diseases can be cured with the help of plants of medicinal values .ex: Nandhi poo is used to cure Madras eye.

He concluded his speech by quoting;

"Nature has everything for man's need
But not for his greed"

The next seminar on Time Management was carried out by Shibin Sir. He asserted that foreign countries have second strategy and preparedness.

The points he listed include:

- Time is important from kitchen to space science.
- Make a record of the time you spend for every activity and check the time which you have wasted and utilized.
- The main reason for the wastage of time is focusing on weakness.

On the whole, his speech was quiet inspiring.

Then A.S.Lekshmi (former Young Scientist) was on the podium to brief about "Sustainable Agriculture". She kindly motivated us to approach her. At first, she gave the definition of Agriculture which means the systematic way of producing goods or cultivation of crops on large scale. She insisted on her seminar on four topics. They were:

- Sustainable Agriculture
- Methods of Agriculture
- Threats
- Improvements

In between, we had a very good interaction and debates were carried out. She asked various types of our views. Her questions elicited a huge response from the Young Scientists.

She concluded her speech with a quote that states:

"Without Agriculture, There is no culture"

Then we had our dinner at the canteen.

The Seminar taken by Sajiv Sir was a bit different i.e. Useful Traditional Practices. He narrated five useful Traditional Practices. They were:

- Women around Pipal tree: It is good for the health of the women. It can absorb 1800 kg of CO₂ per day. The roots, leaves and the seeds of Pipal tree when powdered helps in the Harmon Secretion.
- Drawing Kolam: First we clean a place before drawing Kolam, by doing so, we clean our environment. We use rice flour to draw Kolams which can be consumed by the tiny organisms when they are hungry.
- Lighting of Lamps: While lamp is lighted with sesame oil, the smell will keep away the insects.
- Vegetarian food practices: It empowers the blood circulation.
- Uses of Tulsi: It can be added in the tea. It is used to cure the fever, cold, etc...

After Sajiv Sir's Seminar, we had cultural programmes.

At night, we made a stay at the hostel. The infrastructure of the college was awesome.

We refreshed ourselves and slept. In the morning, at 4:00 a.m., we woke up and took bath. I made myself ready at 5:30 a.m. At 6:00 a.m., we assembled in front of the auditorium. The morning walk was refreshing there was a channel along the road. On one side, I could see some trees and mountains on the other. Then we visited Thovalai Murugan Temple.

When we returned, we gave our feedbacks and met Dr.Sriram and Er.Rajeswari . They are eminent personalities. Then, we reached the auditorium. We had an interaction with Sriram Sir. He insisted on the topic- "Healthy Food Habits" He said that it is a part of food science.

Then, he gave proper explanation about the necessity to eat the Breakfast. During night, we have a large break and Breakfast means breaking the night fasting. If we skip the breakfast, it may result in health problems.

He also asserted some benefits of eating Bananas. The health benefits of Bananas include:

- Maintenance of night vision
- Prevention of hypertension
- Prevention of ulcer.

He deliberated that Banana contain Fiber, Glucose, Protein, Potassium, etc... It is also taken as a sports diet.

Then, he stated the importance of cumin seeds. It is helpful as

- Antioxidant
- Antiseptic
- Cancer fighter
- Energy booster, etc...

We had our Breakfast after this.

He also told some importance of Horse Gram.

We also had a talk about the mebamba effect and some varieties of tastes. He even asserted some interesting facts.

Benzigar Rajan Sir gave us some clear information about various types of Land forms. They were:

- Mountain
- Valley
- Plain
- Plateau
- Island
- Lake
- Ocean
- Coast
- Desert
- River

He gave explanation and definition of all these types of Landforms. We gained a lot of knowledge from his speech.

Next, Rajeswari madam presented on the topic-"INDIA IN SPACE"

She told that IPRC is the only ISRO branch in Tamilnadu. The points that she deliberated were:

- The first ISRO station is located at Thumba; near Thiruvananthapuram because the earth's magnetic equator lies here.
- The thing that leaves the satellite into the space is rocket. (Launch vehicle.)

She also deliberated some of her major views on PSLV and GSLV rockets.

The next seminar was presented by Varsha (former Young Scientist) on the topic - "Energy"

She made a comparison between the renewable and non-renewable sources of energy. She explained about Solar energy, Wind energy, Hydroelectricity, Biomass, etc...and also about the non-renewable sources like coal, petroleum, etc...

We had our lunch .

Subramanian Pillai Sir presented on The Mars Orbiter Mission. He taught various types of stages of the rocket. He also gave information about:

- MCC (Mars Color Camera)
- MENCA
- What happens to the rocket after putting the satellite to space?
- Capacity of fuel required, etc...

Praisan (former Young Scientist) presented a seminar on Land and Forest. During the course of his explanation, he stressed upon the following aspects:

- Land is the place where we build houses and it covers 29% of the earth's surface.
- Land degradation is the process of the destruction of the Biophysical environment.
- Green town cities are the cities that are changing to eco-friendly manner.
- Loss of Biodiversity is today's situation. So, we shall conserve the nature.

The next presentation was done by Malavika (former Young Scientist) on "Water". Water is characterized by its chemical formula H_2O and typically as a neutral PH of 7. She dwelled upon the following highlights:

- Water cycle
- Water crisis
- Grey water, Blue water, Green water, etc...

Then Subadra madam presented on "Management concept" and "clean note policy"

She taught Management as a noun, process, and discipline.

The major topics she stressed include:

- Minimizing the elements of risk
- Optimum utilization of energy
- Planning the future

She told that rupee notes had to be taken with care. Due to the practices of stapling these notes, The Government of India loses Rs2638 crores per year. Then, there was a meet to conclude the programme .Rajendran Sir touched upon a general topic. He asserted that if we keep digging the white soil on the top layer of the beach soil, then black soil appears. When people roll on the black soil, it may even result in cancer.

Then, Edwin Sam Sir, BalaKrishnan Sir, Christu Paul Sir, Velaian Sir gave the concluding speech.

The two day camp under Young Scientist programme (2014-15) organized by KAP at CSI institute of Technology , Thovalai on 08/11/2014 , 09/11/2014 was a splendid experience to us . The programme was conducted in a professional manner. All the events were synchronized as per schedule with utmost punctuality. The speakers were of high standard and presented on wide range of topics relevant to Sustainable Environment and the ways and means of accomplishing it. The programme organizer left no stone untouched in making the programme a grand fete. CSI institute of Technology was kind enough to spare their picturesque campus and treated us with exemplary sense of hospitality. Our interaction with the Young Scientists was awesome and gave us a great opportunity to mingle among ourselves in synergistic manner. The programme ended with a sense of satisfaction and sweet memories.

5.Gby Atee,
Green Team.

"Don't judge each day by the harvest that you reap, but by the seeds that you plant"

-Robert Louis Stevenson

Kumari Arivial Peravai (KAP) is a voluntary organization which develops the scientific temper and awakes the dormant scientist of grade 8. The second meeting after the hard selection process of Young Scientists 2014-2015 conducted by Kumari Arivial Peravai was a scientific awareness camp. When the selection process was going on, I understood how hard, informative and inspiring it would be. I was sure that I would be selected and as I wished I was and the first meeting was held on 26th of October at LMS Boys Higher Secondary School, Marthandam. The organizers of KAP said about the 2 day scientific awareness camp which would be astounding. I was avidly waiting for the day and the day came finally!

The scientific awareness camp was organized at CSI institute of Technology, Thovalai. As a leader I was so eager to attend the meeting and to lead my team. As KAP stands for punctuality we reached the campus at sharp 8:45 am. We reached our longing destination by the institute bus and I felt that that we were welcomed with red carpet. This invited me to attend the 2 day camp with much gusto.

The First Day of The Camp

We all went to the boarding and after breakfast we assembled beneath a huge shady tree. It was just a warm up session. As we were waiting for the chief guest, Mr. Velaian, the organizer of KAP gave us some basic advice like telling feedback, report and all such things. As soon as the guest arrived we went to plant saplings. Mr. Luis Sam Titus planted the plant and along with Mr. Ingersol, they poured the first mug of water for the plant. Miss. Jeswini, the former young scientist said that trees are the lungs of our earth and it provide us with medicine for disease without side effects and also that trees has increased the economic growth in a way. Due to urbanization the trees are being cut and KAP is trying to make the earth green by growing a sapling on such special occasion. I Gby, Abharimi, Jeffin, Srinidi, Soorya, Meera, Dani and Prabinkumar said some uses of trees like controlling soil erosion, maintaining the groundwater table, maintaining temperature and so on. Mr. Ingersol said that trees are a store house of water and can store up to 20,000 lt. of water. Trees are not only a lifeline for humans but for all living creatures so we must keep this in mind and remember the quote by Gandhi' "Nature has everything for man's needs but not for his greed" and act accordingly. Dr. Christu Paul, Principal of CSI Institute of technology, Thovalai, accompanied us when the saplings were planted.

The Inauguration

The inaugural session was presided by the cambering of Abina, Red team leader and the welcome address by Sabrina. The personalities on the dais were Mr. Luis Sam Titus, Chief General Manager, ISRO Propulsion Complex, Mahendragiri, Mr. Mullencheri M. Velaian, the organizer of KAP, Mr. Ingersol, Group director, ISRO Propulsion Complex, Mahendragiri and Dr. Christu Paul, Principal, CSI Institute of Technology. Then the introductory speech was given by Mr. Mullanchery M. Velaian. In his talk he said about the Karnan like attitude of Shri. Luis Sam Titus and also said that he works really hard for the development of our nation. The principal of the collage has worked really hard to permit us in and about another hardworking ISRO scientist Er. Ingersol.

The presidential address was give by Dr. Christu Paul. He said that using the advance of science we must do something for the development of the country. After 1916 the usage of chemical has increased by 170 times which is a great threat to a sustainable environment. Using non-conventional energy, waste management and reducing the waste would lead to a better life. When we have a vision and mission KAP will mould us into eminent scientists. He also said about the selfless and dedicative actions of the members of KAP and emphasized that it is the success behind KAP.

Chief Guest Address

Then it was over to the chief guest Shri. Luis Sam Titus. His motivational talk which was not more than minutes was really informative. He said about the cause of pollution and how is it indirectly affecting us. India ranks 76/150 in innovative index and South Africa ranks 51/150, though once it was called the black continent's country. Switzerland ranks first in innovative index and in competitiveness. Only if we have love for our mankind we will be able to innovate something that would help our earth be more sustainable. So we must come up in such a way with the help of KAP. Then Abhirami gave the feedback and the vote of thanks was by Induja.

Key Note Address

Then the guiding star, Mr. Ingersol, presented a key note address on Sustainable Environment Using Space Technology. Just like 'every rose has its own thrones'; the growth in technology is beneficial as well as it has got some drawbacks too. Space vision is for knowing what we have and about the degradation. It doesn't give solution but tells us where we must focus on. We humans have created the changes that cannot be reversed. It is believed that

Mars had water flow and an atmosphere, and if we humans are irresponsible like this one day earth will also become like Mars. If we keep pressurizing our planet in this way we will need 13 other earth like planets to lead a sustainable life. Satellite has been developed to 'search and rescue', 'track forest fire' and 'detect natural disasters' and many more. In this way human life is improved through space technology. Finally he said about their own mission that is the MOM and shared some interesting facts about Mars.

District Forest Officer Shri. V. Sundar Raju said about some basic and fundamental rules like HAKA and Tamil Nadu Private Forest act that is a must for us to follow. He shared his experience as a forest officer and said about how we people are violating the rules and what the effects of them are. According to the WHO the day time noise level reaches up to 50 decibel and when we use fire crackers it reaches up to 140 decibel. We have only 17% of forest instead of 73% and from this we can understand that how sustainable we are. He concluded with a quote quoted by Swami Vivekananda, "Arise, awake and stop not till you reach the goal". His speech made me feel that as a young scientist I must take some steps to protect forest cover in my district.

First Session

Mr. John Rabi Kumar, a mind opener inspired us with a seminar on positive thinking. He said about the types of thinking and how positive thinking and negative thinking differs. He requested us to be an optimist that is a person who believes that good things will happen and not a pessimist that is the opposite of optimist. Our PM says that, "the cup is not half full or half empty but it is full either with water or air", this is how an optimist thinks. "The pessimist sees the difficulty in every opportunities; an optimist sees the opportunity in every difficulty", said by Winston Churchill. We shouldn't compare our self with anyone else; if we do so we are insulting us. We mustn't think that rose has thrones but think that thrones has rose. No one will manufacture a lock without a key similarly God will not give problems without solutions. If a problem can be solved don't worry and if no there is no point in worrying so don't. And he concluded by saying that the BEST IS YET TO COME.

Then was the short but an informative talk by Mr. Joe Prakash. In his talk he told that we must talk about what is not there and as of now we don't have a Sustainable Environment we must talk about it and concluded with a tongue twister which was really fun.

One of the most important topics which are essential for a good person is Personality Development and it was presented by Mr. Sahajan. Personality is a combination of character and quality, and success is the realization of a worthy goal. Among his speech I remember about the a saying that is " Study while others are sleeping; work while others are loafing; prepare while others are playing; dream while others are wishing and you are successful". He finished it off with a map through which we would be able to analyze our personality. Then we went for lunch and had a really good meal.

Second Session

We all, group wise went the electronic lab in which we learnt about the Cathode Ray Oscilloscope, AC and DC current, the use of transformer and also about the soldering iron. We were assisted in this lab by the lab assistant Mr. Imman. In the Power System Simulation Lab the combine action of generation, transmission and distribution takes place. All this is analyzed using computer software's. The evaluation of generation, transmission and distribution is analyzed here. We were assisted by Dr. Sam Harison in this lab. Mr. Rajesh in the Electrical Mechanism Lab taught about the function and use of transformer, generator and motor. We were shown a demo of how electricity is generated through 'motor and generator' combined equipment. Mr. Spencer Pratap Singh and Mr. Jebahar in the Power Electronics Lab taught us about the rectifier, inverter, cyclo converter, AC regulator and chopper.

Ison and Ebi assisted us in the Manufacturing Technology Lab In which we saw about the functioning of machines that would chop, drill, grind or plan metal. The machines here were not handy and are a bit risky too as some works must be done manually. We saw automated version of some devices from the Lathe that is operated by the computer and is safer in the CAD/CAM Lab which was assisted by Mr. Sagan Rajesh. In the Thermal Lab Mr. Davidson Paul Daniel explained us in detail about the 4 stroke and 2 stroke engines. I had a feeling of being in a new world amidst the scientific and electronic equipment.

Third Session

After a short tea break we had the seminar by Dr. Sobanaraj on the topic Environmental challenge to face in the near future. He said that earth is like a space ship with limited resources and evolved over millions of years. He stated that gold is considered as solid gold and water is considered as liquid gold. In the name of development we are misusing the resources which causes non-sustainable environment. The BLUEPRINT OF SURVIVAL is not wasting things, conserving

material and energy and waste management by disposing it properly. The wealth of the nation depends on the natural resources. He concluded by saying about the butterfly effect and the 5 R's which are Reuse, Reduce, Recycle, Refuse and Replace.

Time management, is an important quality which one must have and this wonderful topic was presented by Shri. Shibin Tad. It can be either in the kitchen or in space technology all we must know is how to manage time efficiently. Busy people don't manage their time properly and that is the reason for them to be busy. Finally he said that we must concentrate on our talents and develop them and we must practice before we preach.

The most awaited seminar by Lekshmi on Agriculture made us more enthusiastic. She said that agriculture is a systematic manner of producing goods and is sustainable when is healthy to eat and isn't harming the environment. Need for sustainable agriculture is to increase yield by using limited resources. Now there is a lot of threats to agriculture and the major one is globalization. We can improve it by organic farming, proper irrigation facilities, GMO and proper use of land. Green revolution lead to the destruction of agriculture in many place and mustn't be practiced. She concludes by saying that 'Without agriculture there is no culture', so we must develop a sustainable agriculture.

Mr. Velaian informed about the next meeting at MACET which is on 22nd of November. It is on Management concept in Thirukural. Using our management concept we must present a ppt and an essay of 2 pages in both Tamil and English. After the talk with sir we went for dinner at 7:30pm.

Mr. Sajeev presented his seminar on useful traditional practices. He said that walking around the pipal tree cures disease especially for women and produces a lot of oxygen. Then drawing kolam prevents crawling insects from entering the house. The smoke from candles causes cancer so laps with sesame oil acts as a pesticide and kills insects. Vegetarian food has the 6 main tastes like sweet, sour, salty, bitter, astringent, and pungent which has a lot of medicinal values. Tulsi cures fever, cough and cold and is better than allopathic medicine. Finally he concluded by saying that traditional practices are very meaningful so we must practice all these for a better health.

Cultural programs were conducted .This Cultural programs enabled me a lot to express my inner talents to all. On behalf of green team we presented a skit entitled 'The diamond necklace'. And after a short prayer at around 10:30 we went to bed. I was so worried because that wonder full day from where I had acquired a lot of information had come to an end. I was anxiously waiting for the second day as I thought it would be more wonderful and auspicious than the first day.

The Second day of the camp

On the next day 9th November we all got up early, got ready and assembled together. We went on a walk through the wonderful scenery along the canal towards a temple in the hill. By morning when I woke I was bit tired but after the walk I felt myself refreshed and more energetic. From the top of the hill we had a panoramic view of the joining of the Western and Eastern Ghats. For a moment I was wonder struck by the beautiful nature

I remembered a famous saying "We never notice the beauty of nature because we are too busy trying to create it". And this day was the day when I really admired the beauty of the nature We had a small gathering in which we spoke about our morning visit.

Dr. Sree Ram, medical Officer Primary Health Center, Agasteeswaram, presented his seminar on the topic Healthy Food Habits. He in his speech told us about the importance of eating breakfast. As we are breaking the fast we must have a healthy diet in the morning. Skipping breakfast would make us feel tired, sleepy and increase our weight. As a saying goes, "Eat like a king in the morning; like a common men in the afternoon; and poor men in the night", it is very important for us to have a healthy breakfast. Banana reduces ulcer and BP; is useful as an anti- HIV, anti- tumor agent and more importantly it reduces cancer. There is 163 calories in a banana. Drinking cumin seed water postpones age, prevents cancer, and is an antiseptic and also an energy booster. We must drink at least 1 $\frac{1}{2}$ liter of water a day. Horse gram is used to find blood cholesterol, reduces stone caused by salt and also for weight lose. Fiber reduces heart diseases and also reduces weight. As we say. "Health is wealth", we must follow these and lead a healthy and wealthy life.

Fourth Session

Fourth session was also organized by Green Team. As I was cambering I felt that it was my ultimate duty to make the fourth session a grant success. After the breakfast we sat beneath a tree and cleared our doubts with Dr. Sree Ram and then I went to the chapel. At around 10:30am I jointed the seminar of Mr. Benzigar Rajan, the scientist of ISRO about Wetlands, Forests and Seashore in K.K. Dist. He said about the different land forms like mountains to valleys and water body's like ponds to the ocean. He also added that in the coast of Tamil Nadu there are 11 lack fishermen and in K.K. Dist. there is 3 lack fishermen's and this is because of the vast availability of fisheries. This was an easy topic which was the most interesting.

Smt. S, Rajeshwari presented a seminar on Indian Space Technologies. She said that Vikram Sarabhai is the father of ISRO and rockets work according to the Newton's third law. PSLV carries up to 1000 kg and has 4 stages. The satellite is protected inside the shield. GSLV carries up to 2000kg and there are 3 stages and the 3rd stage is the cryo stage. GSLV MKIII can carry 4500-5000kg and is a Large Solid Booster Has got only 2 stages. IRS is use for remote sensing and INSAT is for communication purpose. She also said about the Chandrayaan and the Mangalyaan mission. She concluded by making us aware of the space week celebrated in ISRO that is between October 4th and 10th.

Seminar on the research topic of green team that is Energy was presented by Miss. Varsha, the former young scientists and green team supporter. She said that energy is the ability to do a work and the types are renewable and non-renewable energy. Then she said about the forms of energy, the power plants and also gave us an idea about CONSERVATION OF ENERGY.

Next was the seminar on Mangalyaan by Mr. Subramanian. He said about the types of orbit like geocentric, heliocentric and areocentric orbit, the propellants used by PSLV and the Payloads of Mangalyaan like color camera, Methane sensor, Lyman Alpha Photometer, Thermal Infrared Image Spectrometer and the Mars Exospheric Neutral Composition Analysis which were affixed for various purpose and then after his presentation we went for the lunch.

The yellow team took charge after the lunch. The seminar by Praison Lino, former young scientist, on Land and Forest was an informative one. He told in his seminar that the capability of the land differs from place to place and that degradation is the biophysical features of the environmental getting affected. He also gave us ideas about starting a Green Town City and how the forest resources are depleted very quickly just like a forest fire and also how can it be prevented using satellites. This was really informative and he made us aware about the depletion of land and forest resources.

Fifth Session

Fathima Hashima, the former young scientist presented her seminar on the liquid gold of the planet that is WATER. She emphasized that there is only 3% of fresh water in this planet and we must use it wisely and judiciously. We can achieve sustainability in water through water efficiency, low flow system and grey water treatment. Every 20 second a child dies because of drinking contaminated water and women in Africa walk 4 hours a day to take water. If this generation is suffering this, we must imagine how would the future generation suffer and keeping this in mind we should conserve water in all walks of our life.

Last but not the least Smt. Subatra, presented the last seminar on Management concept and clean note policy. Management stands for managing something tactfully. The objectives are improving efficiency, better quality and mobilizing the best talents. She also said that what cannot be achieved individually is achieved in a group easily as we say, "Unity is power". The Clean note policy was introduced by The RBI to create awareness about the use of currency notes in a proper manner. We shouldn't staple, use rubber bands neither scribble on notes. Because of all these 2638 crore is wasted each year. She also advised us about how to cure red eyes. Her talk was really informative as we have come to know about such useful policies and about the management concept.

Then each team had a team meet guided by each team's coordinator, and guide teachers. During this team meet I was able to interact with the teachers and clear my doubts about the next meeting. We came to know how friendly our guide teacher and resource person is. It was really nice to know that we would be with them the whole year.

Valedictory session

At around 3:30 pm we gathered together for the valedictory session. A moving encyclopedia that is Mr. Mangavilai Rajendran, shared about his experience with the students from Sikkim. He said that the sand dunes in beaches are up to 30-40feet and this can block Tsunami, but due to human activities we remove the sand and the people in the coast are greatly affected by the tsunami. He also said about the existence of fresh water muscles which produce pearls in the hill named Mutthukuzhi Vayal. He concluded by saying that there must be cauliflower type forest only then we would get better rain.

Then Dr. T. James Wilson appreciated all the selected students and said that we will find great changes in us at the end of this training. Cell phone is a wonderful gadget but we are misusing it. If we don't misuse thing we can use it for the development of our life. Then, Shri. Edwin Sam said that this camp has extended our knowledge. Experience is a good teacher even though lessons from experienced ones are even greater way to develop our knowledge. We must use all the opportunities and achieve in our life. And then Shri. Balakrishnan congratulated all the students and wished us good look to succeeded great things.

Mr. Velaian said about the hospitable attitude of all the collage working and non-working staffs and thanked the management for the red carpet welcome. He was impressed by the activities of Mr. Chandra Babu and thanked him from the bottom of his heart. Meera and Lekshmi gave a short feedback on how they felt and thanked the management too. Finally Dr. Christu Paul said that this is a home away from your home and thanked us too on behalf of the management and advised

us to come up with a number of innovations. By the end we left the college by evening at 4:30 pm when "the tide recedes, but leaves behind bright".

This camp improved my confidence level a lot and it has given me the courage to stay away from home and adapt to any kind of situations. The most important thing I learnt is adjusting to all situations. As a leader this is the first time that I have got an opportunity to anchor a programme and lead a group. I also got an opportunity to express my inner talents to all. During the seminar I was able to interact with great personalities and clear my doubts and thus my fear of taking with other peoples reduced and I was able to share my views confidently among each other. I got many new friends who are going to be with me till the end of the programme. As I am a member of KAP I have realize that I must do something for making this environment more sustainable. I also understood that I must work even harder to achieve my goal. I went home with new friends and a life full of new experience, longing for the next camp. I am sure that at the end of this year we will prove what Michael Jordan said that is "Talent wins games, but teamwork and intelligence wins championships". I express my deep sense of gratitude to KAP organizer, Mr.Mullanchery M.Velaian for giving me such a great opportunity.