

**SAMAGRA SHIKSHA, KERALA  
DEPARTMENT OF HIGHER SECONDARY EDUCATION  
&  
NEHRU ARTS & SCIENCE COLLEGE, KANHANGAD**

# **SASTHRAPADHAM**

**2019 January 12,13 & 14  
at  
NEHRU ARTS & SCIENCE COLLEGE, KANHANGAD**



**KASARAGOD**

# REPORT

In order to enrich scientific awareness among students, Samagrashiksha, Kerala in association with Department of Higher Secondary Education organized, three days residential programme entitled '**Sasthrapadham**' in various districts of the state. The sasthrapadham programme for the first batch students of Kasaragod district was conducted at Nehru Arts & Science College(NASC), Kanhangad on January 12,13 & 14. The programme meant for the XI<sup>th</sup> standard students of various high schools in Kasaragod district. Out of 60 students selected, 49 were attended the programme. Dr. Mohanan A, Co-ordinator of sasthrapatham welcomed the gathering. Dr. T.Vijayan, Principal NASC presided over the function. In his presidential address he pointed out the importance of science in our daily life. Dr. G.Gopakumar, Hon. Vice chancellor of Central University of Kerala, inaugurated the programme. In his inaugural address he commented that science plays an important role in the all round development of the individuals. According to him science is a way of helping the brain to grow in finding new knowledge and helps us defeat our curiosity of how the world develops and works today. Science is important because it has helped to form the world that we live in today. To have such an exposure scientific approach is required in all our activities. So this programme is a right platform for the students to make them scientifically enriched. Sri.P.Venugopal, District Co-ordinator of sasthrapadham briefed about the programme. He explained the motto and implementation of the programme in all over the state. Sri. Raveendran, Asst. Co-ordinator, District Higher secondary Education, Dr. K.Radhakrishnan Nair, HoD, Statistics and Dr. T. Dinesh, HoD, Mathematics were felicitated over the function. Sri. Rajesh. P Asst. Professor, Dept. of Chemisty, proposed the vote of thanks. At. 10.15am the inaugural session was over and the participants dispersed for a tea break.

After tea break the first session was handled by Dr. Vijesh A.M. Assistant Professor, Dept. of Chemistry, Payyanur College, Payyanur. He explained the career opportunities in various fields of science. He made a power point presentation on the prestigious institutions like, IITs, IISc, IISER, where one can go for higher studies. He explained the way in which one can

get admission in those institutions. The students were very much motivated towards science by him with his one and half hour presentation. The second session was handled by Dr. K.V.Sujith of Payyanur College. He delivered an interesting session on scientific research. He pointed out that research conducted for the purpose of contributing towards science by the systematic collection, interpretation and evaluation of data in a planned manner,. Students were very much interested to clarify their doubts. After this session the students were went for lunch.

In the afternoon session students were grouped into two and one group went to the physics lab for observing the physical phenomenon behind the experiments. The M.Sc. Physics students arranged various experiments like carry force bridge to measure the resistivity and spectrometer, an instrument for analyzing the spectra of radiations. The students understood how to measure ray deviations and refractive indices by using a glass-prism spectrometer. Experiments were shown by using laser. The experiments were conducted to measure the diameter of a capillary tube by using a travelling microscope. Electric components like resistors, capacitors, semiconductors, diodes were familiarized in the lab. The wave form of electronic signals were displayed by using Cathode ray Oscilloscope.

The other group was went to the chemistry lab for performing experiments. In the chemistry lab students were introduced common glass wares such as pipette, burette, standard flask, conical flask etc. pH of various solutions were measured using a pH meter and classified them as acidic, basic & neutral. Oxidation reaction of Potassium permanganate( $\text{KMnO}_4$ ) was explained by titrating  $\text{KMnO}_4$  against Mohr's salt in presence of Sulphuric acid( $\text{H}_2\text{SO}_4$ ). Using a viscometer the flow time and viscosity of different liquids were explained. Different flame colouration by alkali metal chlorides was explained to the students. Alcohol catches fire was easily explained to the students by burning a paper moistened with 1:1 alcohol water mixture. Decomposition of Hydrogen peroxide( $\text{H}_2\text{O}_2$ ) in the presence of Potassium Iodide (KI) was explained by making lather with the help of soap solution. The Carbon dioxide ( $\text{CO}_2$ ) releasing action of Hydrochloric acid (HCl) on ammonium carbonate  $[(\text{NH}_4)_2\text{CO}_3]$  was shown with the help of naphthalene balls.

After a tea break K.V.Murali, HoD, Dept. of Physics, delivered an interesting talk on nanotechnology. The students were highly motivated and interacted in the session. Then the students went for the individual presentations. All students expressed their views on whether science is a boon or ban. Most of them were opined that science is good for everything but the way in it is practicing is a problem. With dinner the activity of first day was came to an end. The accommodation was arranged at Good Shepered Church Padnekat.

**13/01/2019**

In the second day of the programme, the students went to the river side as part of the programme 'Know the Nature'. The environmentalist and state co-ordinator of Green Earth Kerala, Mr. Shaji lead the students to the river side. Students visited the butterfly garden and mangrove plants. They planted some saplings in the butterfly garden and sat on the forest to breath fresh air. Students were very much enjoyed and highly benefited. Around 10 'O clock they returned to the college.

In the first session, Prof. K.M Sreekumar, Professor, Agricultural college Padnekat, delivered a talk on 'science- past and present'. He commented that science and technology developed with a change in mindset of people with time from the very beginning itself when people started to think of a progress to acquire everything by any means. Competing in the modern era of science and technology in order to utilize its benefits for the well being of human and mother earth is the need of the hour. After tea break, Prof. M. Gopalan, Former HoD, Dept. of Chemistry, Govt. college, Kasaragod and retd. Principal of EKNM College Elerithattu was given an excellent talk on myth and facts about science. He said that scientific discoveries are often presented in a mythological way rather than as the result of sustained experiment and reasoning. He added that Newton's law of universal gravitation is commonly presented as the result of an apple falling upon his head.

In the afternoon students were grouped into two and one group went to the zoology lab for performing experiments. In the zoology lab the following experiments were conducted. Blood group determination is done by using antiserum A, B and D. The principle and procedure



was explained with demonstration. Blood group of some students were determined. Blood cells were observed by preparing thin blood smears and stained with Leishman's stain. Blood cells such as RBC and different type of WBCs were observed. One of the effective separation techniques, paper chromatography was determined. The separation of aminoacids was carried out using this technique. Slides of buccal epithelial cells were prepared by using Toluidine blue stain. Students observed the cells. The students were visited the zoology museum. Theory of evolution was explained by showing different specimens. Different preservation techniques were also explained.

The other group was went to the room where games and models related to mathematics were arranged. Here the students were highly benefited by solving of Rubix cube with mathematical background. The degree students explained the origin of graph theory with famous seven bridge problem model. They explained Mobius strip properties and importance, Performed games with gotti, matchsticks and other games like last mate with mathematics background. They also performed world around game problem and its solution. The students were really enjoyed the session in maths.

After tea break Mr. Mithun A.V., Asst. Professor, Dept. of Computer science, NASC, delivered a talk on current trends in information technology. He briefly explained topics like artificial intelligence and robotics, cloud computing, bioinformatics and cyber security etc. The session was highly informative and interesting. Fruit salad was given to the students and after a short break the second session was started. Dr. K.Radhakrishnan Nair, HoD, Dept. of statistics briefly explained the importance and scope of statistics. He explained that statistics is branch of science dealing with data collection, organization, analysis, interpretation and presentation.

At. 7.00 pm the students were grouped into four and assigned different topics to them and asked them to present their findings. With the help of technology students presented their observation in an interesting way. Only two group could present due to time shortage. Dr. P.K.Jayaraj, state consultant SSA evaluated the presentations. After dinner the second day of the programme came to an end.

**14/01/2019**

After breakfast around 8.30 am students were assembled in the conference hall for project presentation. The remaining two groups presented their topics. The officials from BRC evaluated the presentations. At 9.30 am students started their journey to visit Central University of Kerala, Kasaragod. It was a wonderful experience for the students. They visited departments like Plant science, Animal science, Physics, Chemistry Geology and Chemistry. In each departments teachers and research scholars explained the facilities available and the research work going on there. It was a great exposure for the students. They interacted with eminent faculties and familiarized with latest technologies. Around 4'0 clock we returned to Nehru college.

At 4.30 pm the valedictory function was started. Principal Dr. T.Vijayan inaugurated the programme. Dr. P.K.Jayaraj distributed the certificates. The students presented their feed backs. From their feed backs it was found that students got good exposure and experience through this programme. Dr. Mohanan A, co-ordinator, sasthanpadham proposed vote of thanks. With this the three days programme came to an end.



**Inaugural Function**



**Welcome speech by Dr. Mohanan A, Co-ordinator, Sathrapadham.**



**Presidential Address by Dr. T Vijayan, Principal, NASC, College, Kanhangad.**





**Inaugural Address by Dr. G. Gopakumar, Vice Chancellor, CUK**



**Programme briefing by P.Venugopal, Dist. Project officer, SSA**



**Felicitation by P.Raveendran, Asst. Dist. Co-rdinator, Higher Secondary Education**



**Felicitation by Dr. K.Radhakrishnan Nair, HoD, Department of Statistics**





**Felicitation by Dr. K.Dinesh, HoD, Department of Mathematics**



**Vote of Thanks by Mr. Rajeesh.P, Asst. Professor, NASC.**

## From the Sessions



**Session 1. Dr. Vijesh A.M, Asst. Professor, Payyannur College.**



**Session 2. Dr. Sujith K.V, Asst. Professor, Payyannur College.**



## From the Sessions



**Session 3. Dr. K.V.Murali, HoD, Dept. of Physics, NASC**



**Session 4. Shaji K.K, State C-ordinator, Green Earth Kerala (GEK)**

## From the Sessions



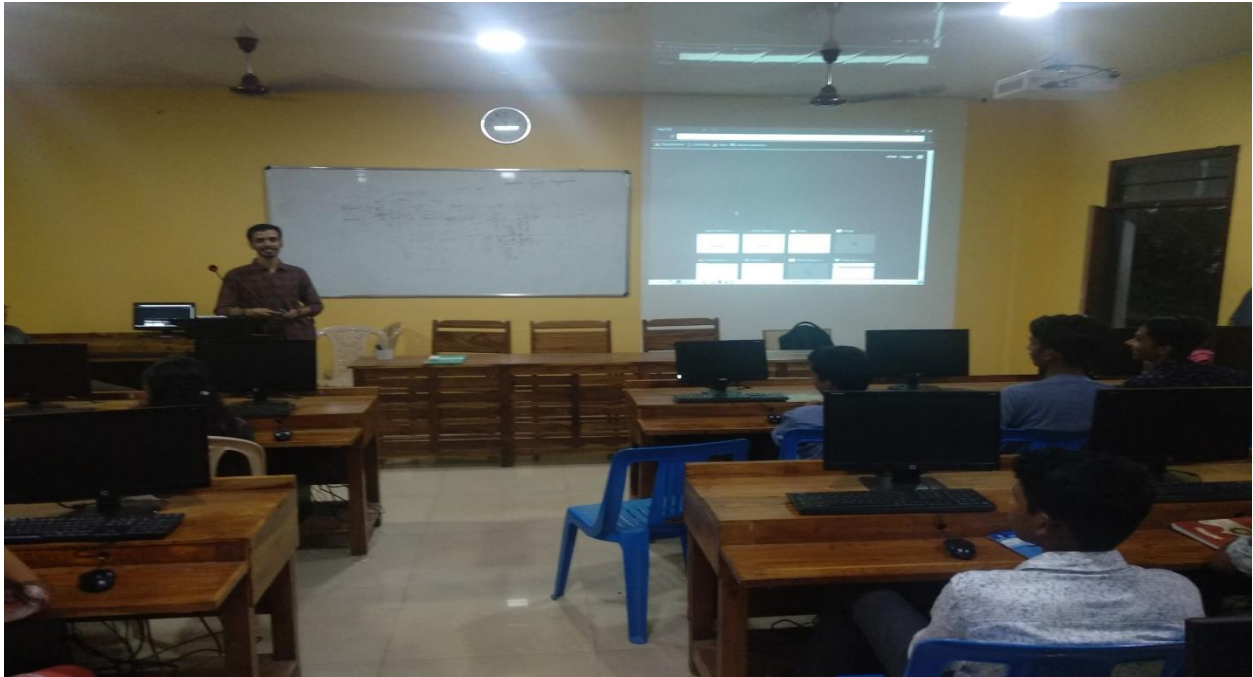
**Session 5. Dr. K.M.Sreekumar, Professor Agricultural College, Padannakad**



**Session 6. Prof.M.Gopalan, Retd. Principal EKNM college, Elerithattu**



## From the Sessions



**Session 7. Mr.Midhun A.V., Asst. Professor, Dept. of Computer Science, NASC**



**Session 8. Dr. K;Radhakrishnan Nair, HoD, Dept. of Statistics, NASC**



## Interaction with experts



From the labs



**Experiments in Chemistry lab**



From the labs



**Experiments in Chemistry lab**

From the labs



**Experiments in Physics lab**



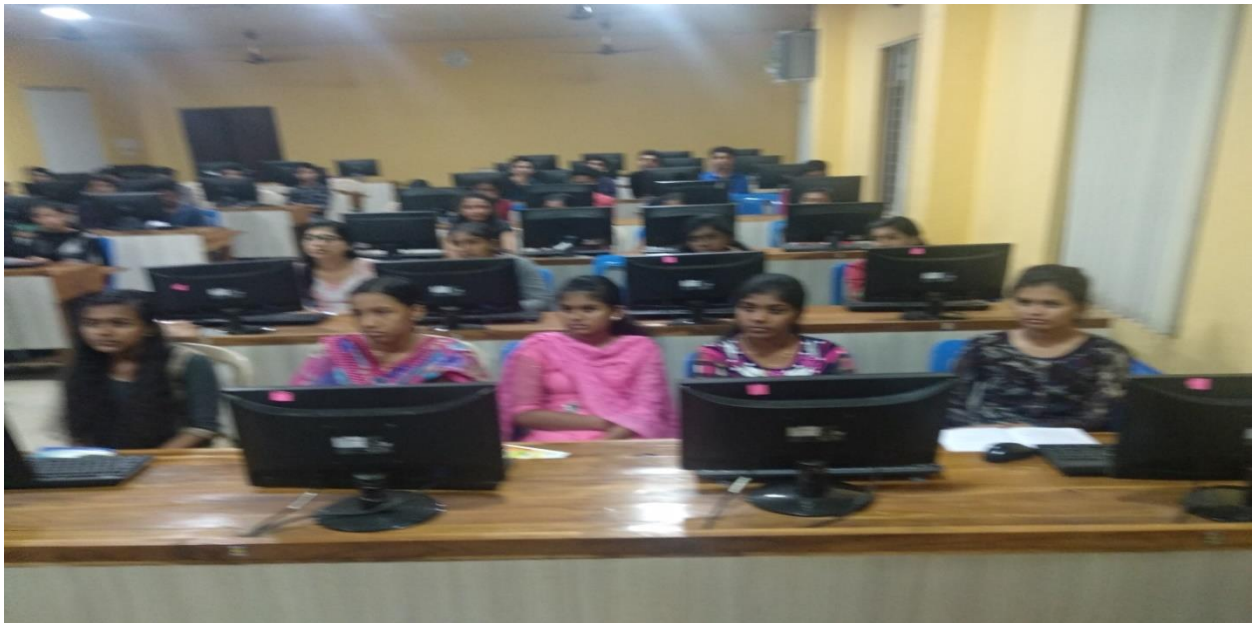
From the labs



**Experiments in Physics lab**



From the labs



**From computer lab**

From the labs



**From Zoology lab**



From the labs



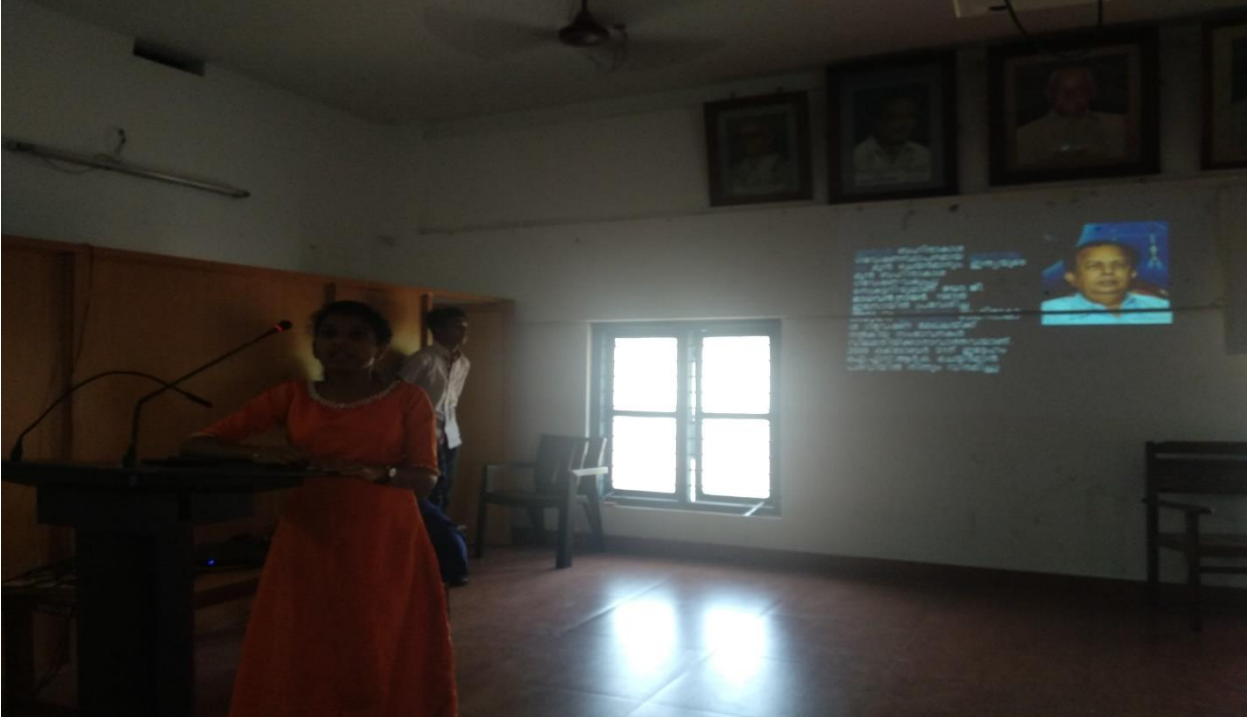
From Maths room

# Group Presentation





# Group Presentation







**Presentation Evaluation by Dr.P.K.Jayaraj**

# Individual presentation





# Individual presentation





# Know the Nature Programme





# Know the Nature Programme





# On the way to Central University of Kerala





At CUK



# At CUK





At CUK



At CUK





At CUK



At CUK





At CUK



# Validictory function



**Inauguration : NASC Principal Dr.T.Vijayan**



**Chief Guest: Dr.P.K.Jayaraj, Consultant SSA**



# Feedbacks



# Certificate Distribution





# Programme in Media



# പ്രകൃതിയെ അറിഞ്ഞ് വിദ്യാർത്ഥികൾ



ശാസ്ത്രപഥം ത്രിദിന ശില്പശാല ക്യാമ്പിൽ പങ്കെടുത്ത വിദ്യാർത്ഥികൾ ജില്ലാ കോ-ഓർഡിനേറ്റർ ഡോ.എ.മോഹനന്റെ കൂടെ

## കാണതങ്ങൾ

വിദ്യാർത്ഥികളിൽ ശാസ്ത്ര ബോധവും ഗവേഷണ പഠനവും വളർത്തുക എന്ന ലക്ഷ്യത്തോടെ സമഗ്രശിക്ഷ, കേരളം, ഹയർ സെക്കന്ററി വിദ്യാഭ്യാസ വകുപ്പ് എന്നിവ കാണതങ്ങൾ നെഹ്റു കോളേജിൽ സംഘടിപ്പിച്ച ശാസ്ത്രപഥം 2019 ത്രിദിന ശില്പശാലയോടനുബന്ധിച്ച് രണ്ടാം ദിവസം

രാവിലെ നടത്തിയ പ്രകൃതി നടത്തം വിദ്യാർത്ഥികൾക്ക് നവ്യാനുഭവമായി. പടനക്കാട് തൂക്കുപാലത്തിലൂടെ നീലേശ്വരം പുഴയോരത്തെ പ്രകൃതിഭംഗി ആസ്വദിച്ചു. തുടർന്ന് ജെന്നിസ് ചിത്രശലഭോദ്യാനം സന്ദർശിച്ച് അവിടെ ശലഭങ്ങൾക്കാവശ്യമായ ചെടികൾ നട്ടു. പുഴയോരത്തെ കുട്ടിവന

ത്തിലിരുന്ന് പക്ഷികളെയും നിരീക്ഷിച്ചു. ഗ്രീൻ എർത്ത് കേരള സംസ്ഥാന കോ-ഓർഡിനേറ്റർ കെ.കെ.ഷാജിയും വിദ്യാർത്ഥികളോടൊപ്പം ഉണ്ടായിരുന്നു. ശാസ്ത്രപഥം ജില്ലാ കോ-ഓർഡിനേറ്റർ ഡോ. എ.മോഹനൻ, വിദ്യാർത്ഥികളായ സഞ്ചീവ് കുമാർ, സി.രുപേഷ് എന്നിവർ സംസാരിച്ചു.



ശാസ്ത്രപഥം 2019 ത്രിദിന ശില്പശാല ക്യാമ്പിൽ പങ്കെടുത്ത വിദ്യാർത്ഥികൾ ജില്ലാ കോ-ഓർഡിനേറ്റർ ഡോ.എ.മോഹനന്റെ കൂടെ

# പ്രകൃതി നടത്തം നവ്യാനുഭവമായി

നീലേശ്വരം: വിദ്യാർത്ഥികളിൽ ശാസ്ത്രബോധവും ഗവേഷണ പഠനവും വളർത്തുക എന്ന ലക്ഷ്യത്തോടെ സമഗ്രശിക്ഷ, കേരളം ഹയർ സെക്കന്ററി വിദ്യാഭ്യാസവകുപ്പ് കാണതങ്ങൾ നെഹ്റു കോളേജിൽ നടത്തിവരുന്ന ശാസ്ത്രപഥം 2019 ത്രിദിന ശില്പശാലയോടനുബന്ധിച്ച് രണ്ടാം ദിവസം രാവിലെ നടത്തിയ പ്രകൃതി നടത്തം വിദ്യാർത്ഥികൾക്ക് നവ്യാനുഭവമായി.

പടനക്കാട് തൂക്കുപാലത്തിലൂടെ നീലേശ്വരം പുഴയോരത്തെ പ്രകൃതിഭംഗി ആസ്വദിച്ചും സമീപത്ത് ഒരുങ്ങുന്ന ജെന്നിസ് ചിത്രശലഭോദ്യാനം സന്ദർശിച്ച് അവിടെ ശലഭങ്ങൾക്കാവശ്യമായ ചെടികൾ നട്ടും തുടർന്ന് പുഴയോരത്തെ കുട്ടിവനത്തിലിരുന്ന് പക്ഷികളുടെയും മറ്റും ശബ്ദങ്ങൾ ശ്രവിച്ചതും വിദ്യാർത്ഥികളുടെ പ്രകൃതി നടത്തത്തിന് മനോഹാരിത കുട്ടി. പ്രകൃതി വിഷയം കൈകാര്യം ചെയ്യാൻ ഗ്രീൻ എർത്ത് കേരളയുടെ സംസ്ഥാന കോർഡിനേറ്റർ കെ.കെ.ഷാജിയും വിദ്യാർത്ഥികളോടൊപ്പം ഉണ്ടായിരുന്നു. ശാസ്ത്രപഥം ജില്ലാ കോർഡിനേറ്റർ ഡോ. എ.മോഹനൻ, വിദ്യാർത്ഥികളായ സഞ്ചീവ് കുമാർ, സി.രുപേഷ് എന്നിവർ സംസാരിച്ചു.

കളുടെ പ്രകൃതി നടത്തത്തിന് മനോഹാരിത കുട്ടി. പ്രകൃതി വിഷയം കൈകാര്യം ചെയ്യാൻ ഗ്രീൻ എർത്ത് കേരളയുടെ സംസ്ഥാന കോർഡിനേറ്റർ കെ.കെ.ഷാജിയും വിദ്യാർത്ഥികളോടൊപ്പം ഉണ്ടായിരുന്നു. ശാസ്ത്രപഥം ജില്ലാ കോർഡിനേറ്റർ ഡോ. എ.മോഹനൻ, വിദ്യാർത്ഥികളായ സഞ്ചീവ് കുമാർ, സി.രുപേഷ് എന്നിവർ സംസാരിച്ചു.