



P.K.M. COLLEGE OF EDUCATION

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PROGRAMME PORTFOLIO

DEPARTMENT OF NATURAL SCIENCE
2021-2022



DEPARTMENT OF NATURAL SCIENCE

ACTIVITY REPORT 2021-2022

Objectives

- To acquaint with the theoretical back ground in teaching learning process.
- Develop skills in teaching like skill of introducing a lesson, skill of explanation, illustrating with examples, class management, skill of questioning, skill of board writing, skill of using learning aids, teaching methods, class management, organizing different school activities etc.
- Develop research skills and research culture among the student teachers by preparing and publishing field manuals, books, booklets etc.
- Develop competent natural science teachers with subject competency, organization skills, communication skills, ICT Skills, leadership quality, laboratory skills, skills in organizing different curricular and co-curricular activities etc.
- Develop socially committed Natural science teachers with scientific sensitivity, attitude interest and creativity in all works and activities.
- Student teachers get critical thinking, analytical skill, creativity skills, organization skills, leadership quality etc. through different co-curricular activities such as role play, projects, seminars etc.
- The student teacher develops presentation skills and communication skills through different presentations and seminars.
- By doing outdoor activities like project, surveys help the learner to get opportunity to spend with nature and gain naturalistic intelligence.
- By organizing different webinars and programmes the students develop different skills organizing and executing different activities and programmes.

Strategic plan

- By different sessions the student teachers will get critical thinking, analysis, creativity skills, organizing skills , develops ways of expression, communication skills etc.
- Through the different projects the student teachers get opportunity to develop research skills, leadership skill, co-operation, organization skill, interpersonal skill, collection of data, analysis, interpretation, report writing etc.
- By preparing science related albums the student teachers will get skills in collecting data, analyzing, organizing, presenting and reporting etc.
- Surveys, field trips project works etc. were also helps the student teachers to acquire different skills.
- Seminars and presentations will improve the presentation skills and confidence among the student teachers.
- Both theoretical and practical curricular and co-curricular activities definitely develop different skills and this makes efficient natural science teachers with ethics and positive attitude.

Course learning outcomes

- By theoretical activities, discussions, demonstrations, panel discussions, online teaching etc. student teachers get a sound knowledge on the theoretical background of the teaching learning processes, become subject competent.
- By the practical sessions such as microteaching discussion, demonstration and criticism lessons the student teachers develop different skills in teaching learning process, student management , class management, organizing different programmes, science clubs, exhibitions, games, conducting projects, role plays debates and several curricular and co-curricular activities.

- By preparing science related albums the student teachers develop skills in collecting data, writing skills, skills in analysis, organizing skills, editing skills etc.
- By doing action research and preparing articles and presenting papers the student teachers develop research skills.
- By conducting survey, field trips, projects the student teachers get deeper knowledge in different methods and acquire different skills such as leadership skills, interpersonal skills, data analysis, interpretation etc.
- By doing environment related activities the student teachers develop naturalistic consciousness.

Activities planned

- Magazine
- Biological album
- Publications
- Project
- Seminar
- Paper presentations
- Assignments
- Webinar
- Day observance
- Ecofriendly activities
- Content analysis
- Practical records

- Discussion, demonstration and criticism. Sessions.
- Teaching aids preparation
- Action research
- Resource unit
- School internship.

Many curricular and co-curricular activities were done by the Natural Science department. The details were given below

SELF EXPOSITION

Students in Natural science were prepared and exhibited a wide variety of programmes in the self-exposition programme to reveal their talents, skills etc on 2-12-2021. In this programme they also exhibited their talents in digital area too.

SEMINAR

Seminar presentation is one of the activities done during the academic year 2021 – 2022. The topics for seminar were distributed to all students in the area different teaching methods. Students were taken the different seminar topics with in allotted period of time (18-11-21 to 25-11-21).

BIOLOGISTS ALBUM

The biologist album is the collection of professionals who has specialized knowledge in the field of biology. This was an individual task. Everyone made each album with information and contributions of 10 famous biologists. This work helped them to attain more knowledge about famous biologists.

ASSIGNMENT

Assignment is one of the activities conducted. Students were prepared and submitted assignments which were allotted to them.

PROJECT

Project is one of the must to be done activity in the academic year 2021-2022. The syllabus asked for a group project. The students were done a project titled “Germination stages of different seeds in soil”. Students were selected eight species from six families for this project. Different seeds showed different characteristics in seed germination process. They vary in its development and duration. By this project students observed and recorded the gradual seed development in different species and this project encouraged them to develop observation skill, naturalistic intelligence etc.

MAGAZINE

The Magazine named ECONUT, prepared by the department of Natural science, PKM College, Madampam as a part of the two days celebrations, Wildlife Conservation day and Soil day. ECONUT means a group of people who love and protect nature. This magazine included different articles, drawings, poems, stories according to the nature prepared by natural science students. This was also motivated other students groups.

MICROTEACHING

Microteaching is a technique to develop teaching competencies. Microteaching was conducted. Each student had taken 3 different teaching skills which they want to explore.

● PREPARED DISCUSSION LESSON PLANS

To familiarize with lesson planning student teachers discussed the various instructional objectives and activities in groups and prepared five discussion lesson plans based on the topics in high school biology through online sessions were Conducted lesson plan discussion sessions. First, I had given an orientation to lesson plan writing, its objectives, steps involved, pattern, procedure, critical evaluation etc. Then I had given one discussion lesson plan session for whole group. Directed, guided them in throughout the session. Then divided the students in to two groups and conducted two discussion lesson plan preparation session. Given corrections and after modifications the students were submitted five discussion lesson plans.

- **PREPARED DEMONSTRATION LESSON PLANS**

Conducted five demonstration lesson plan sessions. Given the links of class videos of Victers channel. Given directions to observe the classes and for preparing lesson plans on demonstration classes. After the five sessions the students were prepared five discussion lesson plans and submitted. The demonstration lessons helped to develop observation skills and learned the patterns and teaching skills used in the constructivist classrooms

- **CRITICISM CLASSES**

Criticism classes were conducted from 24-09-2021 to 01-10-2021. Eight students in natural science where prepared one criticism lesson plans and submitted. Given corrections and modification. Then each one had taken a criticism class and recorded it. The recorded video of the classes where digitalized. Later conducted a criticism sessions for each student to critically evaluate the classes. Critically evaluated different teaching skills of each student and pointed out strength and weaknesses and given suggestions for improvement. The students made the initial attempt to execute the lesson plan. Most of the students were presented the class with confidence. They understood their strength and weaknesses. The teacher educator peer group had given the suggestion for improvement. Due to COVID-19 the student teachers were missed the real classroom experience but we used digital platform to conduct the lesson.

- **REMEDIAL CRITICISM SESSION**

Remedial criticism lesson was conducted from 5-10-21 to 7-10-12. This was a remedial session of online criticism session. After the suggestions and corrections made after the online criticism session students 4was done a face to face criticism session to improve their teaching competency.

- **PEDAGOGY OF SCHOOL SUBJECT- PART II: NATURAL SCIENCE**

Student teachers developed deep knowledge and understanding TPACK, networking, smart classroom, fostering creativity, tackling gifted, talented, creative, social backward, academically backward students. Developed skills in pedagogic analysis and its transactions.

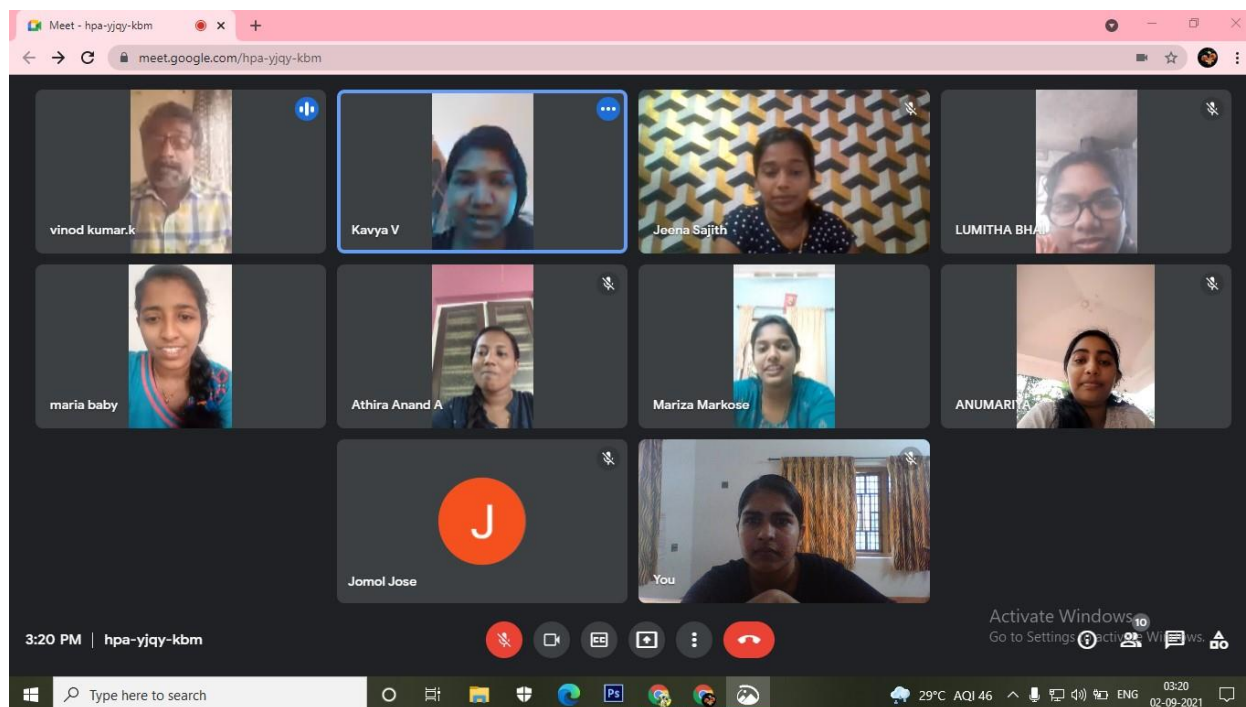
- **ACADEMIC COUNSELLING ON INTERNSHIP – INTERACTIVE SESSION**

Conducted an Interactive session on Internship on 1-09-2021. Discussed about Profession, Teaching profession, qualities and skills required for a teacher, professional quality, commitment, teaching behaviour, inter personal, intra personal skills required. Also discussed about the challenges in teaching and how to overcome it and how to adapt and how to become an efficient teacher with social commitment.

- **PRE-INTERNSHIP ORIENTATION**



A pre-internship orientation on Recent trends in lesson plan preparation, teaching learning process and evaluation was organised by department of Natural science on 2nd and 3rd September 2021. The resource person was Mr. Vinod kumar K, State resource person HSS, Mambram. The session was handled through google meet.



The gathering was welcomed by Jomol Jose, Assistant professor, Department of Natural science and she also gave a brief description about the resource person. The session was mainly focused in dealing with the lesson plan preparation. On the previous day, i.e, on 1st September we were asked to prepare a lesson plan on a random topic from the high school level and the discussion was held based on our already prepared lesson plans. Sir has gone through our plan and he instantly helped us to correct our mistakes in the session itself, also he added up new ideas that have to include in the present situation. Later on he discussed the common challenges that are faced by the teachers in the current education system. We were also taught to analyse the connection of the topics in the textbook, also from the textbook of the preceding classes. The objectives that should be included while preparing a lesson plan was discussed. The importance and the usage of ICT in the classrooms were discussed. Finally types of learning assessment was given an introduction, its continuation was given on the next class which was organised on 4th September.

On second day the gathering was welcomed by Mariya Baby, student teacher from Department of Natural science and she gave a brief description about topic covered on previous session and also share her experience from first session. The session was covered the evaluation and assessment objectives of teaching. The student teachers were asked to prepare a question paper with total mark of 20 based on the portion they chose to write the lesson plan on previous session. The class was very interactive and interesting. Resource person gave a very good idea about evaluation proceeds and assessment. From this session the student teachers get the idea of how to create a question paper, the objectives need to be mind when making a questions, how to evaluate the answer, continues and comprehensive evaluation, terminal evaluation, and how to evaluate the students as a whole. Important teaching aids are also mentioned in this session.

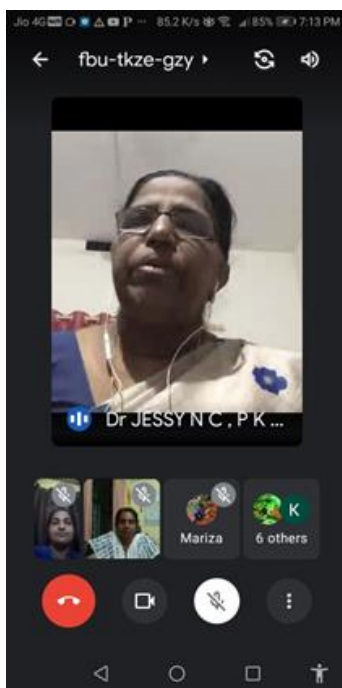
Overall the sessions were interesting wherein the students got various information for preparing a lesson plan for teaching in the current classrooms. The resource person was very much active that all the students got engaged with his class in some or the other way. Overall it was an wonderful experience for the student teachers. The session was ended with question answer session between student teachers and the resource person.

- **PRACTICE TEACHING**

Done a six-week online and offline internship programme in different schools. Students got opportunity to take classes, giving clarifications, summary, homework correction, conducting online test etc. Student teachers were participated in different school activities, summary preparations, home works corrections, test preparations etc. Directed them in their activities in online school internship programme. They developed skills in online and offline teaching, organizing different activities, homework correction, test preparation etc. They

were practiced to manage works in schools, interact with students, teachers etc. The online and offline combined internship programme was a good initiative of our college in COVID 19 pandemic situation.

- **PTA MEETING**



PTA meeting of 2020-2022 Natural Science batch in the academic year 2021-2022 was conducted on 21-09-2021 at 7pm via Google Meet. The meeting was started with a silent prayer. The welcome speech was delivered by Dr. Veena Appukuttan, Secretary, PTA. Then college principal Dr. Jessy N. C. delivered the presidential address. In her speech she mentioned about the need and significance of this type of meetings in academic progress of the students. Later conducted discussion and feedback session. Each parent communicated about the present academic status of their students, needs and also shared their worries too. Principal and optional teacher communicated with the parents and clarified their doubts and thus reduced their anxiety regarding the academic programmes. Then the principal given general information regarding the curricular activities. Later the optional class teacher Mrs. Jomol Jose delivered vote of thanks. All parents were participated in the meeting except one due to some unavoidable issues. Later optional teacher communicated with that parent too. The meeting was ended at 8 pm.

COMMON ACTIVITIES

- **WORLD ENVIRONMENT WEEK CELEBRATIONS (JUNE 5, 2021 TO JUNE 12, 2021)**

PKM College of Education, Madampam organized World Environment Day celebration on 5th June 2021 at 03:00pm through the virtual platform Zoom. The World Environment Day is observed for encouraging worldwide awareness and action to protect our environment. The theme for the year 2021 was Ecosystem Restoration.

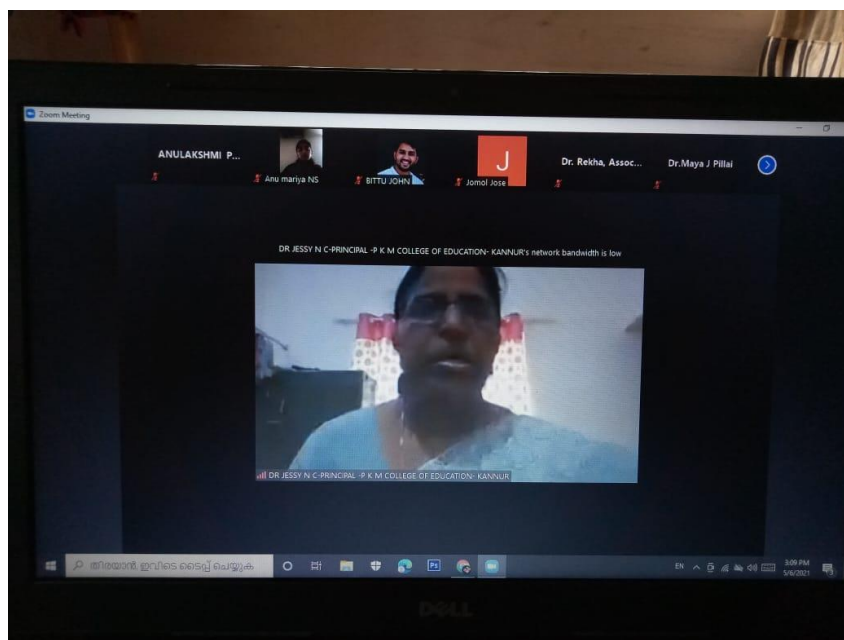
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WORLD ENVIRONMENT DAY CELEBRATIONS
"ECOSYSTEM RESTORATION"

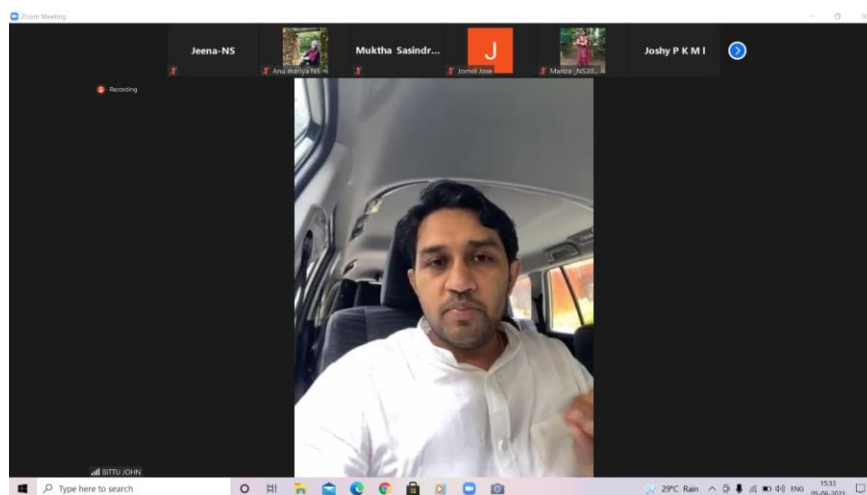
 TALK WITH A MAN OF CHANGE Mr. BITTU JOHN FOUNDER 7to9 Green Store, Kolenchery	 ഒറവ Environment E - Magazine Releasing	 തണൽ കാടുംസംരക്ഷണവും ബോധവൽക്കരണവും	 കരുതൽ DIGITAL ALBUM Plantation Campaign for General Public
 ABLOOM A Bundle of Online Stories on Nature For PKM Students	 പഴയതിലേക്കൊരു തിരിഞ്ഞുനോട്ടം Video presentation on Traditional Leaf Crafts For School Students	 GARDEN RESTORATION COMPETITION For PKM Students	 GO GREEN GET HEALTHY Microgreen Preparation Video

CARE EARTH **IQAC IN ASSOCIATION WITH BHOOMITHRASENA**
കൈകോർത്ത് കരുതലോടെ നാടിനൊപ്പം **Preserve Life on Land** **15 JUN 2021**

The celebration commenced sharply at 3:00pm with the college prayer invoking the blessings of almighty. It was followed by the Welcome Address delivered by Mrs. Jomol Jose, the Assistant Professor in Natural Science. The Presidential Address highlighting the theme Ecosystem Restoration and about the relevance of protecting our environment was addressed by Dr. Jessy N.C, the Principal of PKM College.

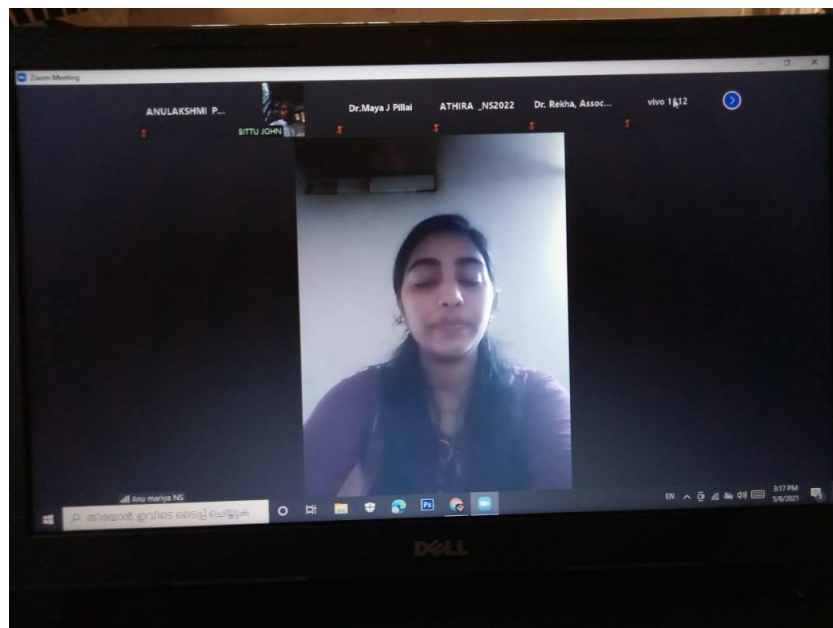


The Inaugural address by Mr. Bittu John, Founder of 7to9 Green Store followed hereafter. He inspired the audience with his elegant speech by elaborating on his experiences and story behind his success in establishing the concept of Green Store. He also emphasized on the importance of ecosystem and about the harmful impact of plastics to the people as well as to the environment. The event was anchored by M. Anumariya, Dept. of Natural Science.



An Interactive session with the chief guest was arranged. The session was very interesting and informative for both the students and faculty. The student teachers raised their queries and made the session lively. Faculties Mrs. Jomol Jose, Dr. Sholly Joseph and Dr. Rekha KR also participated actively during the interaction period.

The next session witnessed the release of works prepared by student teachers. Ms. Anusree K C from the Department of Language Education- Malayalam gave a presentation on Environment E- Magazine titled Orava. Thereafter E- Magazine was released by Mr. Bittu John. This was followed by an introduction to the Collection of One-line stories titled Abloom by Ms. Litty Sunder from the Department of Language Education- English. Our beloved Principal Dr. Jessy NC did the release of the Collection and appreciated the efforts of the students behind these works. Afterwards the most interesting part of the event was the Video Presentation based on the theme Ecosystem Restoration named Pazhamayilekoru Thirinjunottam prepared by the students of the Department of Natural Science. School students were given an opportunity to work close with the nature and their happiness was depicted through the video. The event marked its conclusion with the Vote of Thanks delivered by Dr. Rekha K.R.



“ PAZHAMAYILEKU ORU THIRINJUNOTTAM”

Department of Natural science in association with World Environment Day conducted a competition for school students. The competition is to make any traditional leaf craft. Almost 24 students from different places participated in this competition. This programme helped students to understand about traditional leaf crafts like “olapeepi”, “olapaambu”, “olappanthu”, “kappamala”, “olawatch” etc.. This also helps to give students some knowledge about losing of these traditional crafts. Student coordinator Lumitha Bhai was the head of the programme. The video of participants is released during Environment Day celebrations of PKM College on 5th June 2021 in the online platform zoom. All the participated students are given cash prize as a token of love through google pay.

GARDEN RESTORATION COMPETITION

Department of Natural Science conducted a garden restoration competition for PKM College students in association with World Environment Day. This was conducted on based on the theme of this year environment day “RESTORING ECOSYSTEM”. This programme is to send before and after restoration pictures of their garden. Student coordinator Athira Anand was the head of this programme. Many students of the college participated in this programme. This programme helped to give the importance of restoring our ecosystems and preserving plants. Saranya Lakshmanan from Physical Science department get first prize in this competition. This will be announced during valedictory function of the world environment week celebrations of PKM College conducted on 12th June 2021.

GO GREEN GET HEALTHY

For healthy life healthy food is necessary. We know that there are lots of minerals, vitamins, antioxidants are need for our growth. For this green leaves play a vital role. Since microgreen stage in plants is the correct stage of time for consuming because contained abundant of stored vitamins and minerals for the growth of an entire plant. As part of World Environment Day 2021, Mariza Markose from the department of Natural Science created a video on Microgreen Preparation and its uses. The video is uploaded in the college official YouTube channel.

THANAL- FOREST CONSERVATION AND AWARENESS CAMPAIGN

As a part of World Environment Week celebrations, Natural science department of PKM College organized a programme on forest conservation and giving awareness on it. During environment day celebrations of college through online, students of natural science presented a documentary on forest conservation to create awareness on the importance of conserving forest. This video was a thought provoking one to all the students. A paper on 'Floristic Diversity of Mannanpurath Sacred Groove' was presented by student representative Mariza Markose. That give everyone an awareness on need of conserving forest. The students also decided to conserve a forest present behind the college.

VALEDICTORY FUNCTION

PKM College of Education conducted the world Environment week celebration valedictory function on 12/06/2021. This function was organized as an official conclusion for the world Environmental day related programs conducted by different departments in the college.

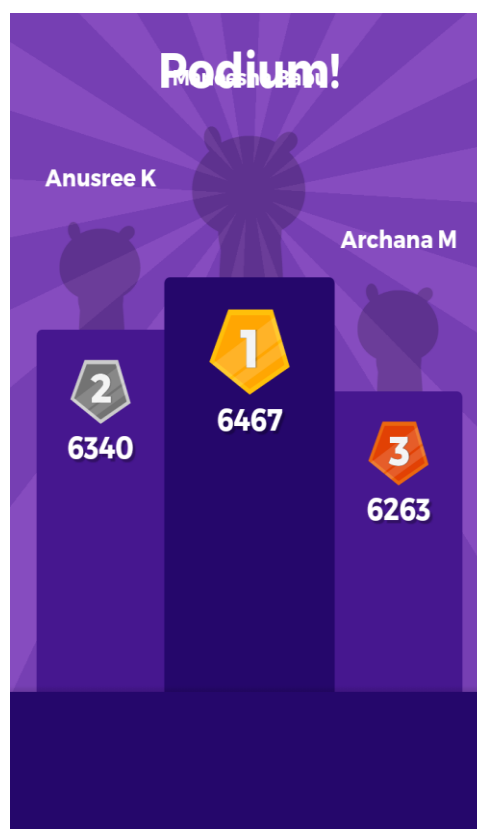
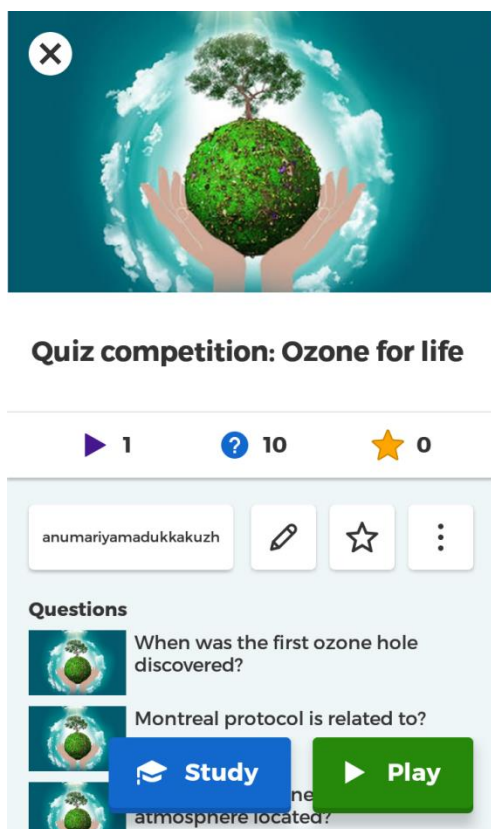
The function was started in the morning at 11 o'clock with a live prayer song by the student teacher Ms. Anusree from the Malayalam Department. Dr Sholly Joseph K assistant professor in the mathematics department welcomed everyone to this program. Dr Jessy NC honorable principal of PKM College of Education delivered the Presidential address. After that student teacher, Ms. Mariza Markose from the natural science department presented a paper on the topic " Floristic Diversity of Mannanpurath Sacred Grove. And also talk about the importance of conserving the Sacred Grove and the ecosystem around us. The paper presentation followed by an open discussion on this topic. This effective open discussion gave so many new knowledge and ideas about the environment and the world we are living. The student teacher Jisna Baby from the mathematics department introduced the Eco Digital Album created by the department of mathematics. The college principal Dr Jessy NC released the Eco Digital Album and advised them to do follow-up on this project. Mrs. Jomol Jose assistant professor in natural science announced the winner of the Garden Restoration Competition, the competition was conducted for the students of PKM College of Education by the department of natural science. The student teacher Ms. Saranya L won the competition.

A documentary on forest conservation, created by the student teachers of Dept. of Natural Science, PKM college, presented on this program. The world Environmental week

celebration valedictory function was officially concluded by the vote of thanks by Mrs. Jomol Jose assistant professor in the Department of Natural Science.

- **ONLINE QUIZ COMPETITION – OZONE DAY**

Department of Natural Science conducted a quiz competition in the programme organised as part of ozone day. Ozone day was observed by physical science department and kerala sashthra sahithya parishadh in association with bhoomithrasena club. Quiz competition was conducted on September 19 at 4:30 pm on the theme Ozone for life. Quiz was conducted in the platform kahoot. Almost all the student teachers participated in the quiz.



- **PHOTOGRAPHY DAY OBSERVANCE**



Life is all about smile, love and memories. Photography is the silent story we tell with photos. As part of World Photography Day August 19, Natural Science department of P.K.M. College of Education Madampam organized a photography competition named ‘VITTILE ONAM’. Since Onam is nearby and it is the festive of joy, happiness and togetherness, choosed the topic wisely. The competition was conducted for BEd. Students of PKM College. Last date for sending entries was set by 22/08/ 2021 5 p.m. There was a good number of participation from various departments. Each one of the photos was so beautiful and pictured to the topic. Students were actively participated in the competition. It was difficult for the judges to select the winner; finally Archana M. from department of Mathematics won the prize for ‘Vittile’ Onam photography Competition. The programme turned into success by the active participation of BEd.students.

- **WORLD HABITAT DAY**



In every year World habitat day was observed in first Monday of October. In 2021 the world habitat day was observed on October 4th. As part of observance of this day Department of Natural Science was prepared a magazine of articles included about different habitats in the world. Due to online classes and Internship they couldn't publish it. So on 07-01-2022 the magazine name "HEARTH" was published. This was a very creative, informative and resourceful magazine. All the students were participated wholeheartedly throughout its preparation and publishing ceremony.



- **WORLD SOIL DAY & WORLD WILD LIFE DAY OBSERVANCE**

As part of soil day and world wildlife day Department of Natural Science planted one tree sapling in the campus on 5th December, 2021.



The Magazine named ECONUT, prepared by the department of Natural science, PKM College, Madampam as a part of the two days celebration of December 4, Wildlife Conservation day and December 5, Soil day was launched on 17/12/2021 at the college. ECONUT means a group of people who love and protect nature. The magazine included different articles, poems, drawings etc about the nature. Also conducted a photography competition on the topic “mother Nature”.



The programme started at 9.30AM with the prayer followed by the welcome address by Indukumari U K.



After an introductory speech about the Magazine by student editor Anjana T, the college principal Dr. Jessy NC released the magazine by handing over it to the Natural Science Teacher Mrs. Jomol jose. A digital copy of the magazine was also shared in the students whatsapp group.



After the magazine release principal Dr. Jessy NC presented the certificates to the winners of the photography competition conducted on the theme 'mother nature' on 12-12-21 as a part of World Soil day and World Wildlife Day celebrations. Dariya Baby (English department) won the first place, Manjusha N. (Mathematics department) and Jisna Augustine (Mathematics department) won the second and third places respectively.





The event ended at 10.00am with Athira T C thanking the audience.



- **WORLD FORESTRY DAY OBSERVANCE**

International forest day was observed on March 21 in PKM college of education. The theme for 2022 was " Forest and sustainable production and consumption" which means the sustainable production of the forest products and it's useful consumption. A poster competition was organised by Bhoomitrasena club of PKM college of education for the first year as well as

the second year students. Almost 6 participants from each optional classes participated in the competition which was held on match 21 at 3:30 pm in the general hall. The theme for poster designing was " Forest and sustainable production and consumption". Winners were selected from 6 of them and the first prize was grabbed by Athulya C, Department of Malayalam, from the batch of 2020-22. The second prize winner Sneha V, department of Mathematics, from the batch of 2021-23 and the third place was secured by Arya K I, department of physical science, from the batch of 2021-23.



- **DARWIN DAY OBSERVANCE**

To commemorate the birthday of Charles Darwin on 12 February 1809. To let others, know about the importance of 12 February and Charles Darwin's contribution to Science. The department of Natural Science, PKM College, Madampam noted the importance of 12 February as Darwin day and planned to do an awareness talk on February 12, Darwin day 2022 was held right after the prayer and thought of the day in general assembly. During the talk, Athira T C explained, why we are considering 12 February as Darwin day and what are Charles Darwin's contributions to the scientific world.

- **WORLD WETLAND DAY OBSERVANCE**

The celebration of World Wetlands day is conducted by the Department of Natural science, PKM College of Education, Madampam. The programme started at 9:30 AM with the

prayer. A welcome address delivered by Suhaira.N followed by an introductory speech about the programme by Harsha Santhosh. The honourable College Principal Dr Jessy N C inaugurate the function. Natural science Teacher Mrs. Vismaya presented a talk about the need and significance of the day. Followed by the announcing of online quiz competition and later member of Bhoomithrasena club,Ann kuryan delivered vote of thanks to wind up the programme. The documentary was presented on the following day, February 9, 2022 at 9.30 am, and it is entirely made up by students of Natural science optional.

- **WORLD WATER DAY OBSERVANCE**

World Water Day is celebrated every year on March 22 to make the world aware of the importance of water. So this year, Natural Science Optional took on the responsibility of raising awareness about the importance of water and the need to conserve it. Conducted a live quiz competition. To understand the relevance of current groundwater resources, Akshaya A V was delivered a talk on "Groundwater making the invisible visible". The event started at 9.30am. Harsha welcomed Akshaya for the awareness talk. Akshaya explained the significance of that day and the current water level as well as this year's theme. Then Athira T C performed a song which revealed the importance of water. Murugan Kattakada's poem '*Jaladhuorlabyam*' was sung. Jwala Maria Cyriac in maths optional won the first prize in the online quiz conducted in connection with Wetland Day. The Sanjiya Benny in the same optional won the second. Harsha congratulated and thanked everyone and ended the event.



DEPARTMENT OF NATURAL SCIENCE

2021-2022 ACADEMIC YEAR