



P.K.M. COLLEGE OF EDUCATION

MADAMPAM, KAITHAPRAM PO, KANNUR-670631, Website-www.pkmcollege.org Govt. Aided Teacher Education Institution affiliated to Kannur University Recognized by NCTE and included under UGC 2(f) & 12B category Accredited by NAAC with 'A' Grade, RUSA 2.0 beneficiary

PROGRAMME PORTFOLIO

DEPARTMENT OF NATURAL SCIENCE
2018-2019



DEPARTMENT OF NATURAL SCIENCE

ACTIVITY REPORT 2018-2019

Objectives

- To understand the approaches, methods, techniques of teaching natural science, principles of curriculum construction, methods, approaches in teaching.
- To acquaint with the nature of science, history of science, teaching science and place of science in national curriculum, new education policies national curriculum frame work etc.
- To understand different types of planning year plan, unit plan, lesson plan in teaching and learning.
- To understand the evaluation techniques, achievement test other tools and statistical analysis of data.
- Develop teachers with different skills such as communication skills, ICT, organization and scientific sensitivity, creativity, interest and attitude.
- Develop skills in article writing and publishing in seminars.
- Develop skills in books, booklets preparation and publishing in department wise.
- By projects, field activities, fieldtrips the student teachers develop several skills.

- By practical sessions the student teachers get different teaching skills such as skill of introducing, skill of explaining, board writing, stimulus variation, class management etc.

Strategic plan

- By preprinting science magazine the student teachers will get skills in magazine, preparation, editing, sorting, writing skills, organizing skills etc.
- By preparing innovative learning strategies the student teachers develops skills in preparing new innovative learning strategies and can be contributed to the school students.
- By assignments, seminars presentations the student teachers will get more knowledge in depth and also improve presentation skills, communication skills, confidence etc.
- By doing projects the student teachers develop leadership, communication skill, scheduling, risk management, cost management, critical thinking, quality management etc.
- By day observance and department wise seminars the students develop organization skills, announcement skills, time management etc.
- By writing articles and presenting papers in international/national seminars help the students to develop research skills.
- By preparing digital learning aids the student teachers develop skills in ICT, video editing etc.

Course learning outcomes

- Develop professionally competent, talented, reflective, versatile, natural science teachers.

- Develop socially responsible teachers who will work for the community development.
- Transform the student teachers with deep knowledge and application skills in natural science.
- Develop teachers with both theoretical and practical knowledge in teaching learning process, school activities, classroom activities, science club, exhibitions, competitions, class management, dealing the students etc.
- Develop teachers who have a clear vision and mission in teaching learning and mentor each student with different strategies.
- Develop teachers with different skills in ICT organizing programmes, evaluation techniques, communication skills, charts, models and other innovative teaching learning materials etc.
- By preparing different department wise books, booklets and their publication helps the student teachers to develop the skills involved in this.
- Make positive attitudes and develop creativity through the preparation of innovative learning strategies such as poems, stories, games, visual clues etc.
- Seminars, presentations develop presentation skills, communication skills, confidence etc. among the student teachers.
- Project work, field trips and other outdoor activities helps the learner in developing leadership quality, organization skills, communication skills, research skills, management skills etc.

- Develop efficient natural science teachers with sound knowledge in subject, extra knowledge and practical skills in teaching and learning process.

Activities planned

- Science magazine
- Biologists album
- Innovative learning strategies
- Seminar and seminars
- Presentations
- Project
- Paper presentations
- Biological album
- Booklets
- Publications
- Content analysis
- Field trips
- Medicinal plants.

ACTIVITIES OF 2018-2020 BATCH

FIRST SEMESTER – OPTIONAL

1. SCIENCE MAGAZINE – FOCUS

Department of natural science prepared and published a science magazine named FOCUS. It is a collection of works related to different fields of science. It mainly includes science related information, articles, facts, current affairs, puzzles, games, quizzes etc.



2. BENIFACTIONS

Department of Natural science prepared and published book of various biologists. It was named as 'Benefactions'. It contains the contribution of some scientists in the several field of Biology such as Botany, zoology, microbiology, Genetics, Evolution, Cell Biology, etc.' 'Benefactions' was published by Dr. Rekha K R, associate professor of English department. Important inventions in these fields were specified in the book. Life history and discoveries of about 80 eminent biologists were discussed in the book.



3. HISTORY OF SCIENCE

Students prepared an assignment on ‘History of Science’ by collecting details by referring various books. And the report explains that science is the knowledge of the world of nature and the development of science from its beginning. Also gave details on Landmarks in the development of Science Education in India.

4. INNOVATIVE LEARNING STRATEGIES

On 28th September 2018, students published their group work- Innovative learning strategies for biology, class 9. They had presented whole chapters of biology text in class 9 in the form of poem, stories, games and visual clues. Thus the text book content was introduced in a different and innovative manner which further ensures the interest and active participation of pupils. There were about 4 poems, 5 stories, 6 games and 5 visual clues in total. Such a way of presenting chapters in an appreciable manner enhance the effectiveness of teaching.



5. ASSIGNMENTS

Students were prepared assignments on various topics and submitted the hard copies of the same.

6. SEMINARS

Students were presented seminars on different topics.

7. PRESENT STRATEGIES OF LEARNING AND INSTRUCTION IN PREVAILING STATE OF KERALA

Now a day in Kerala very different strategies are being used in schools. Most popularly used strategies include Activity Based Learning (ABL), Constructivism, Continuous and Comprehensive Evaluation (CCE), Information Technology at school etc.

ABL includes learning should be based on doing some hands- on experiments and activities. Constructivism which is based on the working of students in groups, discussions and the learner are actively involved. CCE is to evaluate every aspect of the child which includes both curricular and co- curricular activities along with academics. Also ICT provides IT education to all the students as a compulsory subject in every school.

8. PROJECT

Ecological and Floristic Study of Temple Pond at Chengalayi

Ponds are the most diverse freshwater habitats and support more species. Traditional ponds are blessings of nature that ensures biodiversity. This project is carried out to study the significant of the temple pond at Chengalayi, to evaluate DO, BOD, P^H , alkalinity of ecosystem, to study the phycological flora and floristic diversity of pond.

From the study it is found that pond is enriched with different species. But the pond is facing various threats for existence. Salinity of pond is very low, BOD is high and DO level is low which indicates water pollution. Our study concludes that this will harmfully affect organisms and phytoplankton in the pond.



9. PAPER PRESENTATION BY STUDENTS

- Presented a paper titled " Stress management strategies in class rooms" in the National seminar on Self Esteem and Mental Health of Teachers Perspectives and Concerns-sponsored by the Directories of Collegiate Education, Govt. of Kerala held on 13th and 14th December 2018 at Govt. Brennen College of Teachers Education Thalassery. Paper was presented by Neethu Madhusoodanan M.V. and Jahira k.
- Presented a paper titled " Traditional Games to Improve Mental Health" in the National seminar on Self Esteem and Mental Health of Teachers perspectives and Concerns-sponsored by the Directories of Collegiate Education, Govt. of Kerala held on 13th and 14th December 2018 at Govt. Brennen College of Teachers Education Thalassery. Paper was presented by Priyanka Thaliyil and Mahima K.

CLASS REPORT- II Semester
ACTIVITIES OF 2018-2020 BATCH
SECOND SEMESTER - OPTIONAL

1. Booklet on plants in the MBGIPS

Students produced a detailed booklet on different species of plants that are conserved in Malabar Botanical Garden and Institute of Plant Science. The booklet mainly concentrates on plants belonging to bryophytes, pteridophytes, aquagenes, medicinal plants, star forest, butterfly garden, RET and bamboo septum and the special characteristics of these plants. It was the product of combined efforts of all students.



2. Documentary on Malabar Botanical Garden

As a byproduct of the visit in MBGIPS, students come up with a brief documentary preparation about the garden and its special facilities. It was a three and half minute long presentation and it conveyed about the views and sceneries in garden. The documentary runs with a background script.



3. Publication on different evaluation criteria's

Students made a publication on, the different criteria's that are used to evaluate activities like project, seminars, experiment, performances, nature calendar, Science debates, exhibition etc. Each student selected one area and analysed the measures of criteria's used for evaluating those task and prepared detailed notes.



4. Project-Current formative assessment practices at the secondary school level

Students prepared an individual project report on the topic, “current formative assessment practices in biological science at the secondary school level”. They interviewed teachers and collected sincere data. With the support of resources like internet and through group discussions, they tried to understand the procedures of current

5. Assignments

Students prepared individual assignments on the topics ;

- a) Models of teaching ,from the paper : Pedagogy of school subject-part 1-Natural science.
- b) Different tools and techniques for evaluation , from the paper: Assessment for learning- Natural science.

2. Seminars

Students presented individual seminars on different topics under the unit- Science and technology, from the paper :Pedagogy of school subject-part 1-Natural Science.

3. Content analysis

Students analyzed different topics from high school biology into biological terms, facts, concepts etc. and prepared a booklet of content analysis.

4. Field trip

On 23-02-2019, Saturday, students had undergone a field trip to Calicut. They visited places like Malabar Botanical Garden and Institute of Plant Science [MBGIPS] and Science Research Centre and Planetarium. They got to know details about different species of plants that are conserved in the botanical garden, gained opportunity to experience and discuss subject related information and development of other skills. Started the journey at 7.30am from Kannur and reached Calicut at 9.00 am. We assisted by a guide named Aishwarya. We had seen trees like Nagalingam and octopus tree, visited aquagene area and ornamental plants in the garden.

Later visited plants from bryophytes and pteridophytes ,starforest, orchidarea, medicinal garden, Hortusvalley, RET area, butterfly garden etc. From MBGIPS, moved to Science Research Centre and Planetarium and had wonderful experience.Returned to Kannur at 6.45 pm





6. Field trip report

As a part of the field trip conducted, students submitted individual reports recording their observations of places, events occurred and their other experiences etc.

7. Medicinal plants garden

Students made a medicinal plants garden in the college campus with an aim to raise awareness of the need for conservation of medicinal and aromatic plants. They planted plants like; Tulsi, aloe vera, curry tree, neem, navara, coriander, poovankurunnila, muyalcheviyan, adhatoda plant, kayyonni etc. Most of the plants are natural remedies that benefit personal health and beauty.





CLASS ACTIVITIES OF 2017-2019 BATCH

THIRD SEMESTER OPTIONAL

During the academic year 2018-19 Dept. of Natural Science organized various curricular and co-curricular activities to develop different teaching skill of student teachers. Following activities were organized.

1) PREPARED DISCUSSION LESSON PLANS

To familiarise with lesson planning student teachers discussed the various instructional objectives and activities in groups and prepared 5 discussion lesson plans based on high school biology.

2) PREPARED DEMONSTRATION LESSON PLANS

Teachers of various schools demonstrated classes at Maryland High School, Madampam and discussed about it. Based on the classes 5 demonstration lesson plans were prepared.

3) CRITICISM CLASSES

Students prepared individual lesson plans and conducted classes at Merland High School, madampam.

4) MICROTEACHING

Based on the core teaching skill student teachers prepared lesson plans, took classes, collect feedback and repeat it. They also prepared link practices.

5) RESOURCE UNIT

Prepared resource unit individually and based on it prepared power point presentations.

6. PEDAGOGIC ANALYSIS OF THE CONTENTS IN BIOLOGY TEXT BOOKS.

The 8th, 9th, 11th standard biology text book of SCERT, Kerala state syllabus were pedagogically analysed or content analysis were done s a part of the third semester curriculum. The content analysis were gave a thorough knowledge about the present system and the gradation of curriculum content in the secondary school level.

7. ASSIGNMENTS AND SEMINARS

Assignments were prepared by each students based on the selected topic from the paper pedagogy of school subject part II (Natural science). And every one present a detailed class room seminar on their topics and discussions were also done.

8. PREPARATION OF TEACHING AIDS

Teaching aids were prepared by all student teachers based on the high school biology topics. Varsity of aids are used such as audio aids, visual aids, and audio visual aids. It include videos, animation, power point presentations, chart, models (working and still)...Etc. Most of the importance was given to ICT assisted teaching aids as the present system demands.

Videos

Student teachers take videos related to the biology curriculum from online resources and also from the educational web site by Kerala education department named Samagra. They take opportunity to edit the videos for their requirement.

Power point presentations

Power point presentations prepared on different topics. They used them for the easy convey of ideas. And new inventions were experimented by each one.

Charts

Multicolor charts are used. Different graphical organizers also used.

Models

As teaching aids the still and working models were made for the better teaching learning process. All the models were prepared by waste materials and other bio degradable materials to aware the students with the importance of recycling.

9. ACTION RESEARCH AND CASE STUDY.

Student teachers were done action research or case study on different problems identified by them during their internship period. They conducted detailed study and find out satisfactory solutions to these problems with their knowledge and also guidance from resource persons. It enhances their observation power and ability to cope with learners.

10. SCHOOL INTERNSHIP PROGRAMME.

All student teachers completed their school internship programme in between the period of July 4th 2018 to November 9th 2018 in different schools. The students were completed their internship in five different schools. Every one completed more than sixty lessons in HS, UP and HSS. And all of them give their maximum for the academic progress of the individual schools. The curricular and co-curricular activities conducted by the students were excellent. With completing the lessons they also developed achievement test for each standard.

11. WORKING WITH SCHOOL PROGRAMME

Students conducted different curricular and co-curricular activities in their respective schools during their school internship period. All special days were observed in different ways. The ozone day, Independence Day, Onam celebrations and Kerala piravi was the major programs.

Many competitions were conducted for students and give prizes for the winners. Remedial coaching classes for the backward students were one of the important events in school.

12) OZONE DAY PAPER PRESENTATION

As a part of International Ozone Day Celebration PKM Collage of Education, Madampam organized an International Paper Presentation Competition. Following student teachers guided their students during internship and contributed papers.

1. Aswathi P V - Ozone samrakshanathil kaumaarakarude panku.
2. FarhanaKhader-Ozonesamrakshanavum aadhunikagrihanirmaanareedhiyum
3. Roopama C P
4. Vishak A

The students namely FathimaSahla of Sir Syed High School, Karimbam guided by FarhanaKhader and of GHSS,Sreekandapuram guided by Vishak A awarded Best paper presenter award in individual and group session respectively.

13) BIOLOGICAL ALBUM

Students prepared biological album individually based on different topics such as agriculture, nutrition, environmental issues, medicinal plants etc.

14) DIGITALIZED LESSON PLANS

Students recorded the 6 classes during internship programme and digitalised lesson plans.

COMMOM ACTIVITIES

1. WORLD ENVIRONMENT DAY - “Plastic Pollution”

International Environment day was celebrated every year on June 5th. This day was celebrated in P K M College of Education on June 12th 2018 marking the importance of environment conservation based on the theme ‘Beat plastic pollution’.

Inauguration session

The inaugural session was started by 9:30 am. The warm welcome speech was delivered by Staff co-ordinator Miss. Jomol Jose. The presidential address was delivered by Dr. Stephen T. A., Principal of P K M College of Education, Madampam. The International Environment day celebration was inaugurated by honorable resource persons Dr. Sreedharan K. (Assistant Prof. Dept. Of Environmental Studies, Kannur University) & Mrs. Susmitha T.M. (HSST Botany, GHSS Mathil, Kannur) by giving the tree seedlings to the principal. After that our resource persons were distributed the prizes to the winners of poster making competition and making useful products from waste plastics. The expression of good wishes was conveyed by Miss. Liya Joy, student coordinator (Bhoomithrasena). The vote of thanks was delivered by student co-ordinator Ammu Jose.





Seminar session-I

The seminar session I was based on the theme and was handled by Dr. Sreedharan K. (Assistant Prof. Dept. of Environmental Studies, Kannur University). The salutation and delightful welcome speech for Dr. Sreedharan K was delivered by Miss. Ponnisha Thomas, student coordinator. The seminar session commenced at 10:00 am. The seminar session was about plastic pollution, its significance and its consequences. It threw light on conservation of our environment. The presentation showed brought a picture about the worst condition of our environment due to plastic pollution. The seminar session had put forward the concerns regarding the preservation of our environment. This session was winded up by conveying the vote of thanks to Dr. Sreeharan K. Was delivered by Anusree V.P.



Seminar session II

After the tea break, the seminar session II was commenced at 11:30 am. At the inception of the seminar session a gratifying welcome speech was delivered by Sr. Irene to Mrs. Susmitha T.M. (HSST Botany, GHSS Mathil, Kannur) who handled the active seminar session. The theme was Ocean plastic pollution. She explained different aspects of plastic pollution in oceans. She has shared her own point of views and dai;y life activities to reduce plastic wastes. The seminar session came to an end by 12:30pm. The vote of thanks vocal expression was delivered by Mrs. Anju Maria.



Video Presentation

Dept. of Natural Science and Bhoomithrasena presented a short film which exhibited the significance, consequences etc. of plastic pollution. We should conserve our earth for the existence of ourselves. The short film was conveyed the message “Act first-Save Earth”.



Poster making competition

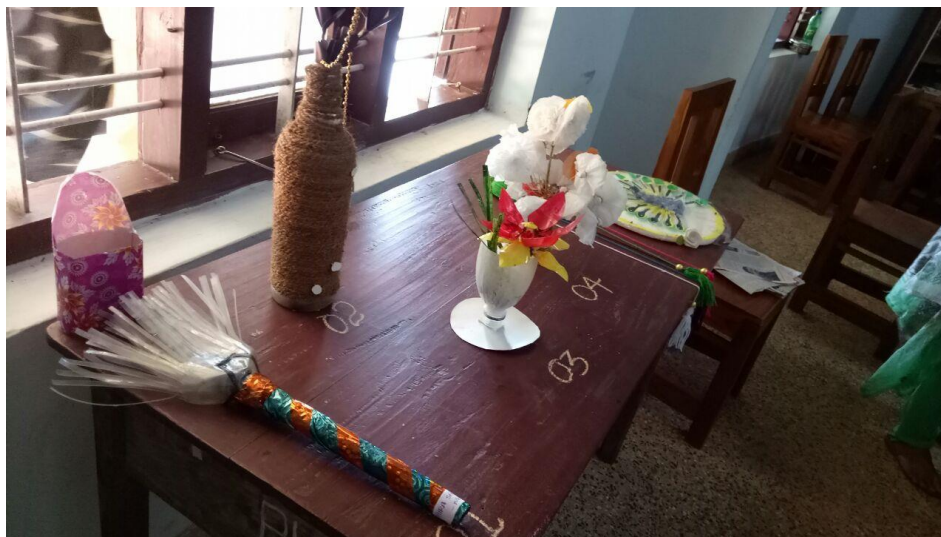
Poster making competition was conducted on 07-06-2018 in the Natural Science classroom. The theme was “Plastic- a big threat to our society”. The B.Ed. students of different subjects were actively participated in the competition. The time allotted for the competition was one hour. Each student guided their air castle on the white paper through colors. The competition came to an end at 3.00 pm. The evaluation was done by the judges. First place was secured by Athira Sagar of Mathematics: Second place was secured by Anusha E. of Natural Science.





Making Useful Products from waste plastics

We know that there are many types of waste plastics which were exceed in our day today life. So we conducted an innovative competition “making useful products from waste plastics”. Several students were actively participated in the competition. First place was secured by Sangeetha C.P. of Physical Science: Second place was secured by Mini Scaria of Social Science.



2. INTERNATIONAL FORESTRY DAY CELEBRATIONS

The International Forestry Day was established on the 21st day of March, by resolution of the United Nations General Assembly on November 28, 2012. Each year, various events celebrate and raise awareness of the importance of all types of forests, and trees outside forests, for the benefit of current and future generations. Countries are encouraged to undertake efforts to organize local, national, and international activities involving forests and trees, such as tree planting campaigns, on International Day of Forests. The Secretariat of the United Nations Forum on Forests, in collaboration with the Food and Agriculture Organization, facilitates the implementation of such events in collaboration with governments, the Collaborative Partnership on Forests, and international, regional and sub-regional organizations. International Day of Forests was observed for the first time on March 21, 2013. the theme for 2018 is 'Forests and sustainable Cities.' This day was celebrated in P K M College of Education organized by Department of Natural Science and Bhoomithrasena supported by Kerala Directorate of Environment and Climate Change, Govt. of Kerala on March 20th 2019 through different programmes.

INAUGURAL SESSION

The inaugural session was started by prayer at 9:30 am. The warm welcome speech was delivered by Miss. Liya Joy, student coordinator, Bhoomithrasena. The presidential address was delivered by Dr. Stephen T A, Principal of P K M College of Education, Madampam. The International Forestry Day celebration was inaugurated by honourable resource person Mr. Basil Peter, Wildlife photographer of Cochin Natural History Society (CNHS) by lighting the lamp with blessings of Lord Almighty. The expression of good wishes was conveyed by Staff co-ordinator Miss. Jomol Jose. The vote of thanks was delivered by student coordinator Miss. Mridula Ramesh C.



SLOGAN WRITING COMPETITION

The slogan writing competition based on the theme '*vanasambath*' was conducted on 16th March 2018. Student teachers of P.K.M College were participated. The time allotted for the competition was from 9.30 am to 4.30 pm. Students was wrote the slogan in a paper and dipped in the box. The evaluation was done by the judges. Miss. Anju Maria and Miss. Priya Joy got first and second prize respectively. Prize to the winners were distributed by the chief guest during inauguration programme.



SEMINAR SESSION

The seminar session was based on the theme 'Forest and Wildlife: Need For Conservation' and was handled by Mr. Basel Peter. The seminar session commenced at 10:00 am. It was about the forest and wildlife photography. It threw light on beauty of the forest through beautiful clicks of resource person from Aanamudy, Kudukkimala etc. The photo includes many birds, elephants, flowers etc. It was enjoyable to students. The seminar session had put forward the concerns regarding the preservation of forests.



DOCUMENTARY EXHIBITION

After the tea break a documentary on mangroves exhibited. It gives a clear picture on mangroves, its significance, how it resists Tsunami, capacity to purify water etc. It helps to identify different species of mangroves and the places where rich diversity exists. After the exhibition an interactive session was taken place. Students asked questions related to wildlife photography and cleared their doubts. The session came to an end by 12:30pm. The vote of thanks was delivered by Anagha K.



SKIT

Student teachers of P.K.M College were presented a forest related skit. The theme of the skit was the great history of Sundharlal Bhahuguna and his wife Vimala dhevi who leaded the Chipko movement in Utharagand for the protection of trees. The major roles were played by Vishak A and LayaLuka. The skit was directed by Athira Sagar.





EXHIBITION

The exhibition was based on the theme of 'wildlife and water conservation'. Many heart touching photos clicked by Madhuraj, related with water exhibited with descriptions in the general hall. Many impotent animals in forest were also exhibited.





Evaluation

Different curricular and co-curricular activities, department wise seminars etc. were appreciated and helped to develop several skills, vision and mission among the student teachers in Natural Science. This will definitely help them to perform in their future working places.



DEPARTMENT OF NATURAL SCIENCE

2018-2019 ACADEMIC YEAR