

Co-Curricular Activities in Biological Science

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Introduction

Co-Curricular activities are hobbies and pursuits that don't fall within the scope of the traditional academic curriculum. curriculum is not only teaching and learning in classroom. It also includes work in library, laboratory and workshop, participation in games and sports in playground and numerous informal contacts between teacher and pupils in these places. In these informal contacts there are very many activities. one of which is co-curricular activities. It is a part of curriculum of the institution.

Types of Co-Curricular Activities are categorised under seven headings:

1. Literary Activities: Debates and discussion, subject-wise club, School Magazine, Dramatics, Study Circle, Story Writing, Seminar, Recitation, Kavi Summellan, Library Work.

2. Physical Development Activities: Games, Indoor and Outdoor Athletics, Mass Drill, Parade, Scouting, NCC, ACC.

3. Aesthetic and Cultural Development Activities: Music, Dancing, Drawing, Painting Sculpture, Dramatics, Exhibition, Fancy Dress, Folk Dance, Folk Songs, Variety Programme.

4. Civic Development Activities: Cooperative Bank, Cooperative Store, Assembly, Students' Council, Canteen, Celebration of Religious, National and Social Festivals, Organising of School Panchayat Mock Parliament.

5. Social Welfare Activities: Social Study Circle, Social Services on Special occasions like Fairs, Festivals, Professions, Cultural Programmes, Assembly, Scouting, or Guiding, First Aid and Red Cross, Social Survey

6. Leisure Time Activities: Stamp Collection, Coin Collection, Collection of Copies, Photography, Reading, Needlework and Knitting.

7. Excursion Activities: Picnic, Visit to Museum, Zoo etc., Visit to Exhibition.

TYPES OF CO-CURRICULAR ACTIVITIES



Need and Importance of Co-curricular Activities

Curricular activities have a number of values like educational value, development of social spirit, character training education for leadership, worthy use of leisure time or recreational value, team spirit, development of civic virtue, physical development, improved discipline, aesthetic development and development of cultural values.

i. Development of Educational Value

These activities have great "educational" potential. All classroom teaching is theoretical. Practical knowledge can be imparted through co-curricular activities.

- Excursions and tours provide first-hand experience and reinforce classroom knowledge in subjects like history, geography, nature study etc.
- Language and expression improve through debates and recitations.
- Teaching of History gets vitalised by dramatization.
- Practical lessons in civics can be given through student self-government.
- School magazines teach students the art of writing forcefully and effectively.
- Celebration of functions develops organisational capacities and leadership qualities in students.
- Projects provide direct learning opportunities.

ii. Development of Psychological Value

These activities as the name suggests meet the psychological needs of the students, mainly with reference to social demands of the pupils. They help in expressing personal behaviour and provide a vehicle for creative thinking.

a) **These Activities act as Agent for Sublimation of the Instincts:** Co-curricular activities are a means of channelizing students' instincts into healthy and fruitful channels e.g. instinct of curiosity can be fruitfully channelized by library, stamp and coin collection etc.

b) **Emotional 'Health:** A student is a bundle of innate urges or drives. It is natural for him/ her to be curious, to show off, to master, to be loyal and to be sympathetic. Co-curricular activities provide valuable opportunities in which these drives may be capitalised for educational benefit. But fortunately, or unfortunately, they may not come up to the required expectation e.g. some students who are backward in studies develop inferiority complex and find school life disgusting and can get emotionally unbalanced. Such activities provide a means of emotional adjustment for students.

c) **To' Increase the Interest of Students:** A student who gives his time and effort to his school is, therefore, more interested in it, because of his contributions e.g. the athlete talks about school spirit.

d) **Recognition of Individual Differences:** By providing a number of co-curricular activities, we can ensure the expression of potential capacities of each individual e.g. writing, public speaking, dramatics, painting, different games and sports, organisation of functions etc. which provide training in different aspects of personality of students. These activities, thus, cater to aptitude, interests and abilities of students and sometimes act as a determining factor for the choice of future vocation.

iii. Development of Social Value

Social cooperation is recognised as one of the important demands of citizenship. By participating in group activities, students learn good manners and develop a sense of cooperation. Membership in a club, student council, dramatic cast or an athletic team requires co-operation. Students learn to appreciate the relationship of an individual to the social group. Through team activities, students learn social cooperation. They develop group spirit, 'we' - feeling, belongingness, unity and ability to be co-operative.

iv. Development of Civic Value

In group activities students learn the value of doing one's duty. These activities train the students for good citizenship. Cocurricular activities offer many opportunities for the development of self-discipline e.g., NCC and ACC. They develop in students a spirit of toleration of others' views, healthy exchange of ideas, fellow feeling and accepting victory and defeat with grace. The traits and qualities of leadership are developed in students, when they organise these activities by themselves under the guidance of teachers. Students learn to plan, organise and execute the plan that has been developed. This develops in them initiative, planning, thinking and power of independent judgement. These activities provide excellent moral training. Through these activities are learnt the importance of obeying the law, rules and regulations, love for truth and above all, these activities develop moral consciousness by providing moral experiences. For example, a boy in charge of finances has to act honestly.

v. Physical Development Value

While games, sports and athletics directly contribute to physical development of students, other co-curricular activities also indirectly contribute to it. These activities provide a useful channel for the growth and development of the body.

vi. Recreational Value

Lack of ability and training in proper utilization of one's leisure time is one of the major defects in our present system of education. By providing and organising various activities, we provide wholesome opportunities to our students, rather than to spend their spare time in undesirable activities e.g., Movies, TV, idle talk etc. Hobbies developed at the secondary school stage become lifelong habits.

vii. Cultural Values

Some co-curricular activities are of tremendous value, as they help in providing opportunities for better understanding of our cultural heritage and traditions, for example, activities like dramatics, folk songs, dance, folk music, exhibitions and celebration of various religious and social festivals provide better knowledge and understanding of our culture, foster cultural tastes and awaken cultural interests among students. Student would appreciate learning all these though our language, religion, culture, food habits, dress etc. are different but we are one, and that we are human beings of the same universe. Thus, co-curricular activities will help in developing national and international understanding. We can conclude by saying that co-

curricular activities cater to the development of a child's entire personality, draw out the latent powers of children of different temperaments, supplement academic work, develop social and civic sense. Without these activities' students would be mere book-worms.

1. Literary activities

Literary activities are those activities which are related to literature. It includes activities like debate, elocution, recitation, writing articles, organising visits by eminent personalities, study circle, essays, recitation of self-made poem, dramatization (dialogue writing), literature comer, exhibition, news bulletin etc.

Literary activities help in language building and in enhancing vocabulary, improve articulation, expression, communication, creative writing skills, independent thinking etc. They also give an opportunity to students to show their hidden talents and develop self-confidence. Thus, literary activities help in achieving educational objectives.

Objectives of Literary Activities A participating student will be able to do any or all or some of these:

- express his/ her feelings effectively,
- get exposure to various literary works,
- develop independent thinking,
- comprehend magazine articles and edit them,
- develop interest in supplementary reading,
- collect articles related to subject matter,
- develop skill of articulation, comprehension and analysis,
- develop creative ability,
- develop interest in literature, and communicate effectively.

2. Cultural Activities

Cultural activities are those activities which are based on culture and tradition, e.g., celebration of religious, social and national festivals, folk songs, folk dance, music, drama, dance, painting, picnic, excursion, fancy dress, funfair etc.

Cultural activities contribute towards attainment of group feeling i.e., belongingness, which provide an opportunity to show hidden talents. Students learn group responsibilities, express ideas, share ideas, etc. Through celebration of religious festivals or birthday

celebrations students learn about culture along with entertainment. They get good exposure to our rich cultural heritage. Feelings and emotions are developed and they get a change from routine life.

Objective of Cultural Activities

Students will be able to:

- develop effective expression
- control their emotions
- develop creativity
- use leisure time properly
- build good character and develop personality
- exhibit hidden talents
- become socialised
- promote national integration
- co-operate and co-ordinate with teachers
- develop skill of planning and organising
- know and respect the culture and traditions.

Principles Underlying Organisation of Co-curricular Activities

- The selected activities should be constructive and should aim at development of higher-level objectives, which are not attainable through regular classroom teaching e.g., novelty and originality, writing, skill of recitation of poems, discussion etc.
- Co-curricular activities should have place within school timings so that all can participate. As far as possible all students should participate in one or other activity going on in the school.
- **The Atmosphere has to be democratic:** more suggestions and ideas can be incorporated in democratic atmosphere so nothing is imposed on students.
- **Leadership should be proper and careful:** every time the same person should not get a chance to lead. Leadership should be rotational and maximum number of students should get opportunity to conduct an activity.
- **Administration and supervision:** the responsibility for organising and arranging the programme should be placed on students, while teachers can supervise and facilitate.

- **Regularity:** co-curricular activities should be organised regularly i.e.; they should have a place in school time-table.
- **Advisor:** the teacher should have an advisory role and should not impose his/her will on students.
- Programme should grow from small to large gradually. Initially there may be a few items and a few students but gradually the programme should widen with maximum number of students being involved.
- **Equipment:** necessary equipment should be provided well in time to students for practice and organisation.
- A record of each programme should be maintained. Teachers should enter the details in a special co-curricular register.

Difficulties Faced in Organising Co-curricular Activities

Difficulties faced by students do not take active interest in co-curricular activities because:

- Provision for these activities in schools is not adequate to meet all the needs of all the students.
- In crowded cities, it is generally not possible to have spacious playgrounds.
- Activities are not given a place in school time-table, during school hours. These are either before or after school hours and many students do not participate in them because it is neither convenient nor compulsory for them to do so.
- Sometimes students feel that these activities interfere with their studies. Therefore, whenever they are organised, students participate in them unwillingly.
- These activities are not assessed in the examinations. No extra credit is given for them. At present one passes an examination without participating in these activities.
- Teachers are not competent to organise a sufficient number of activities. There is hardly any trained staff to inspire students to participate in these activities.
- Students are not economically well off to bear the extra expenses involved in participating in these activities.
- Heavy homework is assigned to students. So, they do not find time to participate in these activities, though they are interested.
- Some students are not familiar with the importance of these activities due to lack of proper guidance.

- Students are too shy to participate in these activities.
- Some students do not know their hidden potentialities.

Problems Faced by the Teachers

- Teachers expect extra allowance for organising these activities.
- They lack of knowledge and training to organise such activities.
- Few teachers realise that the aim of education is the development of the total personality of children. They assess students only on the basis of their performance in examination and consider these activities as superfluous.

How to Overcome these Difficulties?

- As far as possible, these activities should be accommodated in the time-table during regular school hours. This will enable all students to take part in these activities and also give more importance to these activities.
- A wide variety of activities should be planned in order to meet the different needs of a large number of students.
- Activities having educational value should get greater attention e.g. literary activities like debates, elocution contests, composing poems etc. '
- Activities should be selected according to the economic means of the school and needs of the students.
- Activities thus differ from school to school. Different activities are required for rural and urban schools and for primary and secondary sections.
- Students should be motivated to participate in activities by asking them to choose activities of their interest, for example, students who are interested in taking part in drama should choose dramatics.
- Aims and function of each activity should be well defined. Each activity should have its objectives which should be made clear to the participants.
- A system of rewards should be instituted for best performance. Some prizes, merit, certificates, shields, running trophies etc. would motivate students to participate.
- While allowances may not give to teachers for organising these activities, the principal can reduce their workload! through proper allocation of duties.
- Unnecessary expenditure is to be avoided. For example, on a sports day too much money is generally spent on equipment's, coaches etc.

- Work done should be properly recorded and periodical evaluation of the activities is also done. And on the basis of the evaluation, problems can be sorted out and modifications in the programme are thought of.
- Regular time should be devoted to these activities in the time-table.
- Some credit, either in the form of less teaching periods or in the form of extra payment must be given to teachers.

Role of a Teacher in Organising Co-curricular Activities in School

- **As a Planner** The teacher must be a good planner and should plan out all the activities to be performed in a year, preferably in form of a chart.
- **As a Leader** The teacher should give the student opportunity to exhibit their leadership qualities and this opportunity should be given in rotation.
- **As an Innovator** In order to break monotony of activities, a teacher should try to introduce some novelty (new programme) gradually.
- **As a Director** As a director teacher should see that the programmes selected by the students are constructive. The programmes or activities should be scrutinised for their educational relevance.
- **As an Organiser** The planned activities should be implemented through a strong organiser. The teacher should supervise activities of students for effective programmes.
- **As a Recorder and Evaluator**, A teacher has to keep a record of all activities undertaken in the academic year. The record must consist of names of participants and winners. The programme should be evaluated periodically.
- **As a Manager** The teacher has to be an effective manager in order to plan, organise, co-ordinate, direct, record, evaluate and control activities.
- **As a Decision Maker** As far as possible a teacher should use democratic methods for taking decisions regarding organisation of activities. Care should, however, be taken that style of decision-making is democratic.
- **As an Advisor** The role of a teacher is to advise students as and when it is required. Teacher should not impose upon and compel students to accept his/her ideas.
- **As a Motivator** At times, students are reluctant to participate in some co-curricular activities. In such circumstances, the teacher must motivate them to participate in such activities.

- **As a Communicator** The teacher should be able to communicate well regarding the programme and its objectives very clearly and well in advance.
- **As a Coordinator** The teacher has to co-ordinate resources, time and activities. He/ she should also coordinate effectively amongst students, colleagues, principal, management and community in order to have an effective programme.

Appreciation and Conserving Bio Diversity



Biodiversity is the variety and variability of life on Earth. Conservation of biodiversity is protection, upliftment and scientific management of biodiversity so as to maintain it at its threshold level and derive sustainable benefits for the present and future generation.

- seminars, workshops, rallies, training courses, public meetings, padayatras, exhibitions, essay contests, debates, paintings and poster competitions, folk dances and street theatres need to be organized at regular intervals to spread the message of conservation.
- Place bird feeders, houses, and baths throughout the grounds. Give local birds food, water, and shelter to encourage them to flock on school grounds
- Plant gardens with local wild flowers. Survey the grounds for good spots for wildflower beds. A class or after-school club could plant the garden, and grade levels could take turns maintaining it.
- Incorporate biodiversity in curricula across academic subjects.
- Set up an aquarium or ant farm in science classes. Micro-habitats such as aquariums and ant farms can teach students about the connections between animals, plants, and microscopic life.

- Make biodiversity-themed crafts in art classes. Students could make bird houses and feeders, planters, or create dioramas of interconnected ecosystems
- Organize field trips to local wetlands, parks, and preserves
- Install recycling bins for plastic, glass, paper, and cans. Encourage faculty and administrative staff to reuse paper and avoid printing whenever possible
- Use the classroom to demonstrate good practice for the environment: recycle waste and use water and energy wisely.
- Don't use pesticides or herbicides. Chemical pesticides and herbicides can kill beneficial species, such as pollinating insects. Harmful chemicals can also spread throughout the food chain and contaminate the water table.
- Organise a nature day in the school grounds and/or set up a wildlife club at school.
- Include biodiversity in curriculum, there are clear links to science, maths and geography as well as citizenship, art and English.

A science project is an educational activity for students involving experiments or construction of models in one of the science disciplines. Students may present their science project at a science fair, so they may also call it a science fair project. It is an important factor to motivate the students toward science and it contributes social developments.

APPRECIATION AND CONSERVING BIO DIVERSITY



Science Fair and Science Exhibition

SCIENCE Fair and SCIENCE EXHIBITION

Science Projects E - Slippers



S Parthiban and VM Akashvaran, students of Government Higher in Tiruttani village of Tamil Nadu, showcased their e - slippers, which come with lights and can even be used to charged mobile phones while walking.

Science fair is purely an educative activity carried out in a systematic manner entirely for the advancement of science.

The purpose of a science fair project is for students to not only learn about science, but also have an educational experience that develops many skills. Creating a science fair project allows students to actively take part in a creative process, from the inception of the idea to the exhibit. It develops a student's critical thinking skills as she/he gains a new understanding about a part of the world.

Exhibitions are effective modes of mass communication and instruction. If it is organized by the pupils themselves, they get opportunity for self-activity. Every school should organize science exhibition once in a year. This may include exhibits of students as well as demonstrations, talks etc. made by experts, film shows on science topics, debates, science plays, etc.

Difference between Science Fair and Science Exhibition

Science Fair	Science Exhibition
More schools are involved	It is conducted in a school
Massive participation can be expected	Massive participation cannot be expected
Finance needed is large	Finance needed is small
More planning is needed	Less planning is needed
Own innovative and creative ideas are taken	Take into account other's ideas
Data is collected to find the results which are not known before	Display of already established facts and results
Both students and teachers get benefited with new scientific knowledge and information	No new information and scientific knowledge are gained

Scope of Science Fair & Exhibition

- To stimulate and encourage interest in science and try out their ideas and apply their classroom learning into creative- channels.
- To focus attention on science experiences in schools
- To provide for scientific hobbies
- To recognize and encourage scientific talents who have special science talents.
- To provide opportunity for display of talents through exhibits.
- To stimulate greater interest in scientific investigation over the routine class work.
- To make the public science minded
- To identify and nurture the future scientists of India.
- Science fair provides opportunity for the display of valuable work done by the students.
- Helps the students benefit from the achievement of others, and promotes a spirit of competition.
- Students can learn many things which cannot be learnt through class room teaching
- Instinctive urges of pupils such as desire for acquisition, satisfying curiosity, participating in constructive work, etc get satisfaction.
- Provide opportunity for detecting and cultivating scientific talents.

- Provide an opportunity for the close co-operation of students, their parents and teachers.

Organization

The organization of science fair should be a teacher – pupil activity and everything should be thought of well advance. The following factors are to be considered while organizing the science fair.

1. Planning

It is essential that planning is thoroughly done. During planning the following aspects should be considered.

- Objectives of the fair
- Scope of the fair- who could participate in the fair? Participation to be limited to the school or kept open to other schools, what types of programmes are to be included etc.
- Procedure
- Financing
- Location, Time and Duration
- Other factors and facilities – necessary arrangement, control etc

2. Distribution of work

Duties should be arranged to individuals and groups. Various committees are to be constituted, which are responsible for different programmes. There may be an advisory committee, a reception committee, a publicity committee and various sub committees. While distributing the work, talents and interest should be taken into consideration.

3. Execution

Programmes decided upon while planning are now to be organized systematically and put to action. All exhibits must be properly mounted and labelled. Volunteers should be arranged for explaining the exhibits to the visitors.

4. Judging

The fair should be judged by an expert team. Separate criteria are to be developed for judging each item -still model, working model, projects etc. The NCERT has listed the following criteria for judging a Fair:

Scientific approach, Originality, Technical Skill and Workmanship, thoroughness, Dramatic value and personal interview

5. Evaluation

Teachers and students should evaluate Science fair and Exhibition when it is over, to find out whether the objectives of the fair have been achieved or not. If not, try to improve it next time.

Criteria for Evaluating Exhibits:

An exhibit is a visual representation of the students' research and interpretation of their topic's significance in history. The analysis and interpretation of the topic must be clear and evident to the viewer. Labels and captions should be used creatively with visual images and objects to enhance the message of the exhibit.

Exhibition evaluation can be divided into four phases, front-end evaluation, formative evaluation, remedial and summative evaluation.

Front-end evaluation – Provides background about the visitors' prior knowledge and experience and gather their expectations regarding a proposed exhibition.

Formative Evaluation – Provides information about how well a proposed exhibition communicates its intended messages. Formative evaluation occurs while a project is under development. The evaluator measures visitor responses to models, plans, or prototypes of the program or exhibit.

Remedial Evaluation – Takes place once an exhibition is open to the public. It is useful in troubleshooting problems and informs museum staff and designers about improvements that can be made to maximize the visitor experience. Remedial evaluation is useful for addressing problems that could not be foreseen during the development a program or exhibit, such as lighting, crowd flow and signage issues.

Science Clubs

It offers the pupils an opportunity for specialization which he/ she does not have in the class – room. It provides for learning by doing and learning by living. In India NCERT is responsible for the formation of science clubs in schools.

Objectives of Science Club

- To develop a general interest in science
- To inculcate scientific attitude and provide opportunities for training in scientific method
- To encourage individual and group activities
- To develop in children a sense of healthy competition
- To stimulate active participation and initiative among students in learning process
- To keep the students in touch with the recent advances in science
- To provide challenging opportunities to the gifted

Organisation of science club

- A properly organised science club will be a valuable aid to teaching science and also means of motivating the children for learning science
- Science club is run by the students for the students, the science teacher is the pivot of all activities
- Science teacher can explain the importance and benefit of organising science club and can arouse enthusiasm among students
- Science club should have its own constitution
- Should be general body and executive body
- Principal should be the patron and science teacher should be the sponsors. Executive members are chosen from the student members (President, vice president, secretary, treasurer, librarian, publicity officer, etc) The executive committee has to chalk out programmes. The activities of the club should be taken by the students. Should be regular meetings, discussions, planning, feedback etc

Structural Organization

Duties of the Publicity Officer- To publicize the activities of the club in the school and outside the school through posters and writing in the magazines, newspapers and scientific journals. To keep a record of all-important scientific activities, achievements and programmes of the club.

Duties of the Treasure- To prepare budged of the club and present the statement of the account when asked. To keep the proper account of the income and expenditure of the club. To collect subscriptions from the members.

Duties of the Secretary- To take responsibility of the conducting the programmes and activities of the club. To take charges of all correspondence related with the club activities. To frame the programmes of the meeting and keep proper record or the proceeding of the meetings of the club. To invite the outside expert and guest speaker etc., in the club and attend them properly.

Preliminary Organization

a. After performing the above-mentioned tasks, the teacher should call a formal meeting of the science teacher should call a formal meeting of the science students. In this meeting the proposal and scheme concerning the organization of science club in the school should be discussed. The aims and objectives of this club are to be placed before the students and constitution of the club is chalked out and the membership drive is launched.

b. With the active cooperation of the head of the institution, the he should make efforts to arrange for the finances to establish the science club. While some amount may be taken from the finances of the institution and collected from the students in the form of membership fee etc.

c. After getting appropriate response or initiative from students he must try to contact the head of the institution and senior colleagues for their consent and advice on the issue of starting a science club.

d. The science teacher should try to create a suitable environment and persuade the students to feel a need of establishing science club in their school.

Activities of Science Club

- Organizing lectures, debates, seminars, symposia etc.
- Holding science exhibition and fair
- Celebrating birth days of eminent scientist
- Participating in science fairs
- Conducting visual programmes of scientific interest
- Arranging visit to places of scientific interest
- Preparing of charts, postures, models etc
- Developing school garden
- Displaying science news

- Improvising and preparing hand-made apparatus
- General reading of scientific literature
- Rendering school services in health and sanitation
- Visiting other science clubs
- conducting essay competition on scientific problems
- Managing a first aid squad
- Participating in scientific hobbies-Preparation of soaps, ink, candle matches, toys, bleaching powder, nail polish, chalk etc.
- Helping the community by way of demonstration on health and hygiene, improvement of agriculture, eradication of superstitious belief etc.
- Celebrating science days
- Maintaining a bulletin board
- Publishing school science magazine
- Preparing science albums
- Conducting science related projects
- Conducting science quiz competitions

Conclusion

Co-curricular activities play an important role in the overall development of a student. They provide opportunities for students to develop skills and interests outside of the academic curriculum, and help them to become well-rounded individuals. Co-curricular activities can enhance leadership abilities, improve teamwork skills, build confidence and self-esteem, and provide a sense of belonging and community. They can also provide a break from the academic routine, and allow students to pursue their passions and interests.

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