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PROGRAMME GUIDELINES

NATIONAL CHILDREN'S SCIENCE CONGRESS

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Department of Science and Technology, Government of India

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NATIONAL CHILDREN'S SCIENCE CONGRESS (NCSC)

1. The genesis

National Children's Science Congress (also referred to as Children's Science Congress at the district and state levels, is a platform for children to carry out small research activities at micro-level. The seeds of this programme were planted in Madhya Pradesh by an NGO called Gwalior Science Centre. It was later adopted by the National Council for Science and Technology Communication (NCSTC), Department of Science & Technology (DST), Government of India for extending it to the national level. Initially the programme was coordinated by the then NCSTC-Network (a network of non-government and government organisations working in the field of science popularization) as national organiser. Since 2014, NCSTC, DST has been organising the Children's Science Congress with the guidance and support of the National Academic Committee, a core group of experienced academic team constituted by the NCSTC, DST, Government of India.

It was a time when most of the country's science communicators were involved in massive science popularisation movements like Bharat Jana Vigyan Jatha(1987) and Bharat Jana Gyan Vigyan Jatha(1992). It was then felt that the large scale activities for developing science awareness among the masses were to be continued as a regular activity and hence the Children's Science Congress was launched as a nationwide programme in 1993. The expectation was that it would enhance scientific temperament, arouse scientific curiosity and improve the understanding of the method of science among children vis-á-vis teachers with the aim that in the long run it would benefit the society at large. So the programme of CSC has been successfully conducted since then.

2. An overview

The Children's Science Congress, a flagship programme of NCSTC, DST aims at spreading the concept of the method of science among the children with their project activities adopting the process of learning through doing. The mandate of participation is that the children will carry out a project on a particular topic in relation to a Focal theme and several sub-themes decided for a period of two consecutive years. The study is to be carried out in the neighbourhood of

the children where they live or study. It is a group activity on a local specific problem using simple method of science.

From 2018, two children of same age group will form a team. The study is carried out under the supervision of a guide. It is noteworthy that CSC programme is not only for the school going children but also open for children outside the formal boundary of schools, in the age group of 10 to 17 years. The children of 10 to 14 years are considered as junior group and 14+ to 17 years as senior group as on the 31st December of the calendar year of participation.

Further, it is not mandatory that the guide must be a school teacher; rather any person with a fair knowledge about method of science and have the aptitude of dealing with children can guide the CSC project, but not any relative or parents of the Child Scientist.

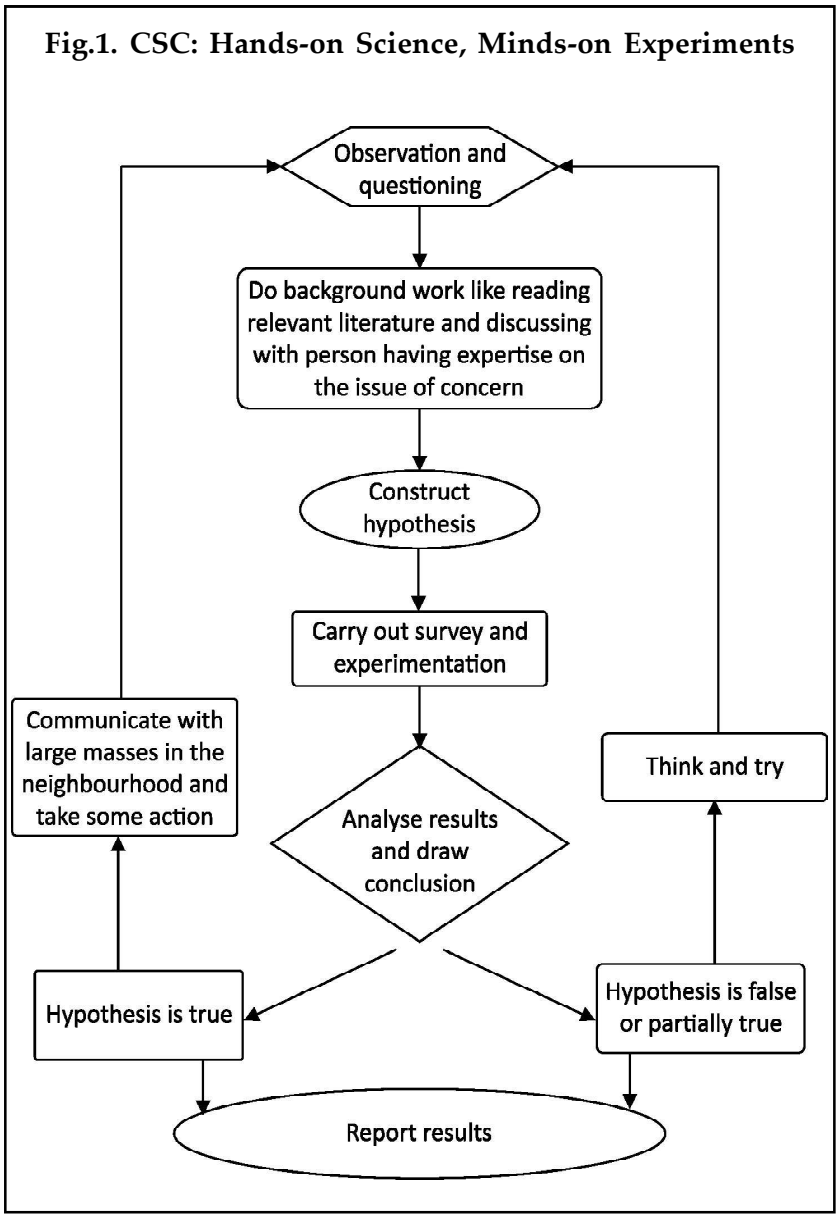
Such practice of a project based activity, as a thumb rule, encourages the children to explore, think, wonder and experiment. By doing so, the children also imbibes the following temperament/quality/skills of the children:

- Observation
- Making measurements
- Making comparison and contrasts
- Classification
- Estimation
- Prediction
- Interpretation
- Critical and creative thinking
- Drawing conclusion
- Cooperative skill
- Documentation
- Communication skill

It is, therefore, expected that any group of children can undertake a project work with a perspective of continuous effort of questioning and experimentation as shown in Figure-1. Here, observation incorporates anything the children observe in their daily lifes and/or their local contexts, in relation to the theme defined for that year.

The observation should be followed by relevant questions such as “What? Where? When? Why? How? Who?” In quest of finding out the answer to the question(s) it is required to review relevant literature concerning the issues in the chosen study. Review of such literature helps in framing the steps towards

Fig.1. CSC: Hands-on Science, Minds-on Experiments



conducting the study. In the process, one may also discuss with subject experts to get information and advice. Initiatives for such activities must be encouraged by the guide. These steps will help to frame a set of assumptions/ hypothesis.

Hypothesis is an assumption of some cause and its impact based on observation, trends, information collected from different literature and emerged from discussion with experts. After these phases, and with the understanding of the issue, the team decides upon a set of **objectives** of the study. Based on those objectives and with help from the guide and/or the experts, they should design a **methodology** leading to a work plan which are to be decided on the basis of nature of the project and the time available to carry out the project. Depending on the objectives and methodology, the study can either be purely **experimental, or a scientifically designed/field survey based or a combination of both**. In case of a survey based project, one should be extremely careful not to get carried away by simple surveys which are questionnaire based where the participation of the community is negligible.

Survey based Projects:

A properly framed survey-based project must follow the following mandatory steps:-

- Identification of respondent
- Location mapping
- Unit of observation
- Sampling technique
- Sample coverage /size (which should be representative of the population under consideration)
- Design of interview schedule /questionnaire
- Analysis and interpretation of gathered information
- Drawing inference/conclusion

Surveys should, therefore be elaborate, comprehensive and should be aided with additional techniques like participatory mapping /appraisal techniques, focus group discussions, etc. Care should be taken that surveys do not get reduced to mere filling-up of pre-designed questionnaires which are done mechanically without any cross-checking and/or active participation of the respondents. Such decisions may vary with the nature of study. So, carrying out a scientifically designed survey is a process where proper investment of time and effort is required to design the process and to make it a participatory one.

Experiment based Projects

In case of experiment based projects the following important steps are important:-

- Choosing objectives of study
- Design of the experiment
- Defining different parameters
- Identification of proper instruments
- Framing of procedures/ steps and control
- Repetitive observation of the experiments
- Data recording, classification, tabulation and processing
- Analysis and interpretation
- Drawing inference/conclusion

In relation to issues of the study, experiment may be either laboratoryor field based. Scientifically designed and executed surveys also can be considered at par experimental based projects; as both of these generate scientific data which could be scientifically processed to arrive at conclusions/ inference.

As stated earlier an ideal CSC project could have a combination of survey and experimental based process. Such consideration will strengthen the project methodology and also will strengthen the skills of the children.

It is expected that in course of time, the children's project will bring in lots of new information about problems and prospects of their locality along with innovative ideas to address these issues. Moreover, in the course of project work, the children may develop innovative approaches of study along with the development of different instruments for their experiments. Such tools/ instruments may be developed with locally available, affordable materials as far as possible. Moreover outcome of different studies should be communicated to the local populace. This will in turn, help in generating scientific temperament among the community as well. The added benefit is that, the results of the study are owned by the community paving way for local adaptation.

In a nutshell, the CSC projects are simple, innovative, practical, concerned with local issues related with day-to-day life and are carried out with very nominal cost, where the focus is more on logical interpretation and analysis of issues and finding out pragmatic solutions of generic nature to the possible extent.

3. Objectives

The primary objective of the CSC is to make a forum for the children of 10-17 years age group, both from formal school system as well as from out of school, to show-case their creativity and innovativeness and more particularly their ability to solve a societal problem experienced locally using the method of science.

The CSC encourages a sense of discovery and/or innovativeness in addition to learning application of methods of science. It emboldens the children to question many aspects of progress and development around and can also express their findings in their own choice of language. It encourages the children to think critically and rationally to draw logical conclusions.

4. The Perspective

The basic approach of CSC is the principle of learning through doing on the issues of children's immediate environment, which significantly carries the spirit and mandate of education for sustainable development (ESD) of UNESCO, National Curriculum Framework (NCF, 2005) and Right to Education (RTE, 2009).

The modalities and approaches of CSC cater to the five pillars of learning of education for Sustainable Development vividly, viz. learning to know, learning to do, learning to live together and learning to transform oneself and society (Declaration of ISI in the 57th meeting of the United Nations General Assembly in December 2002, which proclaimed the UN Decade of Education for Sustainable Development, 2005- 2014, (www.desd.org and www.unesco.org))

The mandate of CSC which encourages children to observe, explore, experiment and wonder through a project activity and its associated ways of participation and evaluation rightly takes care of the guiding principles of the NCF, 2005. Therefore, example of Children's Science Congress has been rightly cited in the National Curriculum Framework Document, in Chapter 3: Curricular Areas, School Stages and Assessment, Section: 3.3.2, Page 50.(http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf: Link as on 14th August 2017).

Similarly CSC activities also helps in materializing the approach of learning as framed in the Right of Children of Free and Compulsory Education (RTE)Act, 2009 particularly in relation to article 6.1 of section-C (ii, iii, iv, v)].

Moreover, CSC activities, since 1993, has catered to many of the approaches and priorities of science education visualized in the National Programme of Sarva Shiksha Abhiyan (SSA) and Rashtriya Madhyamik Shiksha Abhiyan

(RMSA) (Ref:http://www.educationfor-allinindia.com/rastriya-madhyamic-shiksha-mission- RMSM.pdf).

5. Guideline for inclusiveness

C***hildren's Science Congress is a forum to encourage inquiry-based learning and a platform for sharing thoughts on Science and Technology for all the children in the age group of 10 to 17 years. It has a Special emphasis on Accessibility for Persons with Disability (PWD) or Divyangjan as well.***

It is open to children beyond boundaries of geographical regions, languages, gender; but only limited within specified age group. NCSC gives due recognition aligning with the principles of Inclusive Education and provides common platform where all children get equal opportunity to pursue scientific studies of everyday problems in their neighborhoods. This program also focuses on issues related to accessibility for persons with disability. This can be achieved in two ways, viz. projects undertaken (a) by the children with disability, and (b) for the children / persons with disability. Hence, Children with Disabilities (CWD)-Divyangjan have been brought into the CSC process enabling their participation in large scale.

Some of the major categories of CWD which could be considered for knowledge and skill developments are given in Table-1.

Table-1: Categories of CWD

Sl No.	Code	Categories	Materialize the specific ability
1	VI	Visual impairment	Strong sense of hearing, sensing as aid to be used in project work
2	LV(VI1)	Low vision	
3	TB (VI2)	Totally Blind	
4	MR	Mental retardation	Need to consult special educators
5	HI	Hearing Impairment	Strong sense of visual observation, orientation of mobility skill as aid to project development
6	SI	Speech Impairment	
7	MD	Multiple disability	Need to consult special educators
8	LD	Learning Disability	Need to consult special educators
9	AUT	Autism	Deep sensitivity as aid to project development
10	OI	Orthopedically Impaired	
11	CP	Cerebral palsy	Need to consult special educators

In relation to focal theme and sub-themes one has to find out the area of potentialities as listed in Table-1 and involve them accordingly.

Some important aspects related to PWD

1. It is known that one of the main problems faced by CWDs are their limitations in relation to senses, (vision, hearing,), physical movement (locomotive) and sometimes mental (MR etc.) impediments. The inclusive education approach, since, is considered as the important way for imparting education, the most effective way of having an inclusive programme is to have mixed groups of children.
2. Children with different disabilities can form one team (Visually impaired, Speech Impaired, Hearing Impaired, Orthopedically Impaired, Autistic etc.), so that both the team members can complement each other with their abilities and the total disability of the team can be nullified.
3. Children with one or more disabilities can make a team with another normal child (this will enable mutual understanding between normal children and CWD and also would be the best mainstreaming strategy). This will help to develop their personality, knowledge and other skills with mixing up with normal children and vice-versa.
4. It is very much essential to involve Special Educators for guiding projects of these categories of children.

With the above approach, any disability can be overcome and any of the sub-themes can be taken up by the teams with no barriers of disabilities.

6. (a)Eligibility Criteria for Participation

It is open for children, other than CWD, in the age group of 10 years to 14 years (lower age group) and from 14+ years to 17 years (upper age group) as on December 31 of the year they participate.

However, children under CWD group will have no restrictions of age group. Usually sixth to ninth standard children will come under junior group and tenth to twelfth standard children under senior group, irrespective of their ages.

(b) Mode of participation:

From the year 2018, a team of **only two children will form a group**.

A child scientist can participate at the national CSC only once as group leader in the same age group.

Note: *Parents, whose child would participate in the Children's Science Congress in the ensuing year, should not hold any portfolio in the organising/*

academic committees or act as an evaluator of the CSC conducted at any level. Else, the project may be disqualified for presentation in CSC.

7. Nature of CSC Projects

CSC projects are:

- Innovative, simple and practical
- Representing teamwork
- Based on exploration of everyday life-situations
- Involving field based data collection
- Having definite outputs, arrived to draw an inference using simple methods of science and research methodology
- Related directly to community from which/where the problem has been addressed
- Having follow-up plans and action.

8. Criteria of Good Projects

A project needs to satisfy following criterion to be adjudged as a good CSC project;

- Originality and innovativeness of the topic
- Understanding the problem and to find the possible solution using methods of science and its application through experimentation
- Quality and quantity of work, including team work, learning process, methods of science applied, experimentation and validation
- Relevance of the proposal to the community/school and impact of the study on the schoolmates and/or community.

The Project should follow the steps of SMART approach

S:	Specific:	The subject/issues of study must be specific.
M:	Measurable:	The issues of study must be measurable in quantitative /qualitative forms so that the component of comparability is maintained.
A:	Appropriateness:	Methodology must be appropriate to nature of the issues considered for the study.
R:	Realistic:	The issues of the study must be realistic along with the methodology adopted for the purpose.
T:	Time bound:	Study must be carried out in a limited time frame. The project activities should not destabilize normal activity / schedule of the child.

Points to remember

- The project work of CSC must be carried out in a systematic way so that it can rightly reflect the method of science in the works.
- The issue(s) must be studied with designed experiment using simple methods of science.
- In case of experimental works, design and principle of the experiments are very important factors which may help to get a better result in a rational way. Repetition (replication) of the study is important to draw the meaningful inference/conclusion. In such case parameters of observation and verification through the experiment and its logical selection must be reflected vividly along with sets of control and approach of data validation.
- Surveys should be scientifically designed and data collection with sufficient sample size and data verification/triangulation processes are to be followed. The scope of the study, criteria of selection, sample coverage, design of questionnaire or interview schedule are very important along with approach of data compilation, validation, analysis and interpretation.
- Prototype, functional models or development of instrument or devices are only encouraged to be used in project presentation if issues and methods of study demands for such and only in cases where adequate data has been generated by using the prototypes/models.
- Under no circumstances NCSC projects should make use of live animal samples and should not have ethical problems. With respect to conducting experiments or surveys, standard procedures are to be followed. The Guide should take extra care not to commit any mistakes and should take expert advice from senior researchers in his/her area in case of any doubts. No child scientist should be put to any dangerous situations or exposed to hazardous substances and always it is better to have a supervisory role of a responsible elderly person while experiments are conducted. Any ethical issues if detected would amount to the rejection of the project.

Logbook: A diary of proper day-to-day record of field work has to be maintained while carrying out the project works, which needs to be authenticated by the guide. The logbook must be submitted with the project report at the time of oral presentation. All the details, such as project title, name of the group leader, state etc. should be written clearly on the cover of the logbook either in English or Hindi.

10. The Project Report

(a) Structure

The structure of the project report of CSC shall be as follows:

i.	**Cover page** - Must be written in English or Hindi • Title of the project • Name and address of group leader and co-worker • Name and address of guide • Name of the School/ Organisation with full address • The top right hand side of the project should have the Project Code (State Code followed by Number). • The Language of the Project also should be prominently written below the Project Code.
ii.	**Form - A** (Registration Form) (Annexure I)
iii.	**Abstract**: Must be written in English. It is 250 words for lower age group and 300 words upper age group. Format for writing the Abstract is given in Annexure II.
iv.	**Contents**: List of chapter with detail heading and sub-heading, list of table, chart, maps, etc. along with references against page numbers.
v.	**Introduction**: Description on background of the study and its relevance to the focal theme, rationale and social context.
vi	**Hypothesis**: To be written clearly in one or two sentences
vii	**Objective(s)**:To be written clearly point by point, not as running statement (not more than five)
viii	**Methodology**: a. **Experimentation**: Provide list of materials used for the experimentation, explain the treatments and control, provide neatly labelled sketch and/ or diagram wherever necessary, document every step of the study by taking photograph, etc. b. **Survey**: Clearly describe survey methodology followed, sampling procedure, and sample size, provide sample questionnaire used, document every step of the work by taking photograph etc. Usually the sample size should be decided depending on population and should be representative of the targeted population. c. **Case study**: This is a specific study carrying out focusing on a particular area/ community to understand certain issues or its impact. In such cases, principles of survey will remain same but there is a need to

	explain that context of the area/community covered in the case study along with significant learning outcomes apart from the other processes of data analysis and interpretation. It could also involve process documentation which is very important for a scientific understanding.
ix.	**Observations and data collection**: This refers to what has been observed during the experimentation. Observation can be both qualitative as well as quantitative, Please note that observing some phenomenon is different in scientific parlance where specific information is generated under different set of conditions. The qualitative data (information) need to be transformed into quantitative form either using ranking approach or weighted index for numerical analysis.
x	**Data analysis and interpretation**: The data that have been generated out of experiments/observations/survey need to be tabulated in a structured manner. Different tools and methods can be used to analyse the data, to understand the patterns that emerge from it to get results and finally draw conclusions. (Remember, the raw data that is generated is not the final result. Raw data is to be analysed using simple statistical methods/tools and then the interpretation of the result to be made).
xi	**Results**: Results are the output of the study derived from data analysis and interpretation leading to meaningful outcomes with the help of a logical framework. Sometimes, it may be needed to redo the experiments to get consistent results. However, final result is the analysed data presented in structured table as well as graphical form.
xii	**Conclusion/Inference**: This is the logical end of the project where the experimenter tries to arrive at specific conclusions from the final result(s). In a way, the whole objective of the project was to arrive at some conclusion, either positive or negative which would lead to a better understanding of the problem.
xiii	**Solution to the problem**: Once the problem is understood using the above steps, it may lead to one or more possible solutions.
xiv.	**Future scope of the work (Follow-up)**: Every research is open-ended. In other words, in a defined time-period and with given resources, a research work cannot end-up to draw solution to that particular problem, which may need further refinement for suitable and wide application and hence, every research work must have some scope to do the same or similar study by the same researcher or other as and when necessity arises. In CSC, one can think of possible scope of work to be considered as future plan of action for addressing the problem further.

xv.	**Acknowledgement**: It is duty of a researcher to acknowledge all the persons who extended help in various forms for accomplishing the work. A list of such persons to be provided with a generous statement of gratitude.
xvi.	**References/Bibliography**: This part includes the list of books, journals, magazine, articles those have been consulted in relation to the project. If these are referred in the write-up of the project, then it is termed as reference; else it is bibliography/ literature cited. In CSC, it is in general bibliography.

(b) Word Limit:

The word limit for the written report for the lower age group is 2500 and that for the upper age group is 3500. The written report can be substantiated by photographs, neatly drawn sketches, illustrations and / or drawings, etc.

(c) Language

Language is not a barrier for participation in National Children's Science Congress. Children can carry out and present their project in any schedule language or any language which is recognized as medium of education by the respective State Government or Central Government in India.

11. Presentation of the Project:

Oral presentation at the technical sessions of the CSC is a very important component of the entire process. The presentation is to be made by the Group leader only. The time limit for the presentation is 8 minutes followed by 2 minutes for interactions. Effective communication during the briefing of the issues of study, its objectives, and methodology adopted for the study, important observation and findings, vital aspects on the way and approach to solve the problem or addressing the problem are very critical part of the exercise, since only 8 minutes' time is allotted for the purpose. Therefore, one has to plan pragmatically for this purpose.

It is mandatory that children use 4 number of charts / posters for the presentation. Posters must be prepared on 55 cm x 70 cm (21.6" x 27.5") drawing sheets (i.e. chart papers). If needed 4-5 power point slides may be used in addition, though this will neither carry any additional weightage nor any additional time will be allotted for presenting the slides/ppt. These presentations should be brought in a virus-free USB drive along with the fonts used in the presentation in case they are not common fonts. Anyhow, it cannot be assured that the multimedia presentations be allowed in case of technical problems.

The posters should contain bulleted points of information on :

(1) The project title,

(2) Names of the group members,

(3) Objectives,

(4) Map of the area, if any,

(5) Methodology,

(6) Results,

(7) Conclusion,

(8) Solution to the problem.

At the national level, it is always better to have the posters prepared either in English or Hindi. The guide teachers and the State Academic Coordinators may please ensure this larger outreach to all the participants at the national level.

12. Information for participation under CWD group

Language: Like other children, these children with disability can also use any scheduled language for communication. However, special attention will be given to the children who would be communicating through sign language or if necessary the escort can facilitate the interpretation.

Presentation: The children under this category will be allowed to present their projects through oral presentation along with a written project report, similar to the children under normal category. So, some of the visually impaired children will prepare their written reports in Braille, and in that case during oral presentation that child will be provided with the help of an aide / assistant. In all other cases normal existing procedure will be followed.

Time: Although we have specified time of 8 minutes allotted for oral presentations, for the children with disability that might be relaxed. Depending upon the number of projects the time allocation will be decided and notified.

Evaluation: At least one of the evaluators must be a special educator, who understands the needs and limitations of these children. Other members of the evaluation team in the room should also be compassionate and empathetic to the presenters.

All other conditions will remain same.

13. Different levels of Children's Science Congress

The Children's Science Congress is organised at three levels where the child scientists and their project works are screened under common evaluation criterion. The evaluation of the project is done for its innovativeness, simplicity and practicality. On the basis of the merit the project is selected from one level to the next level, as given below:

- Block /District level
- State level
- National level.

The District/Block level Congress is the first level in which projects are screened, evaluated and shortlisted for presentation at the State level Congress. As per State-wise quota (Annexure- III) the projects are selected from the State level for the Grand Finale - the National level of Children's Science Congress.

14. Screening / selection of Projects

(i) The ratios to be considered for selection from District to State Level and from State level to National Level are as follows:

State: District = 1:15 (Out of 15 projects presented at District level 1 will be selected for State Level.)

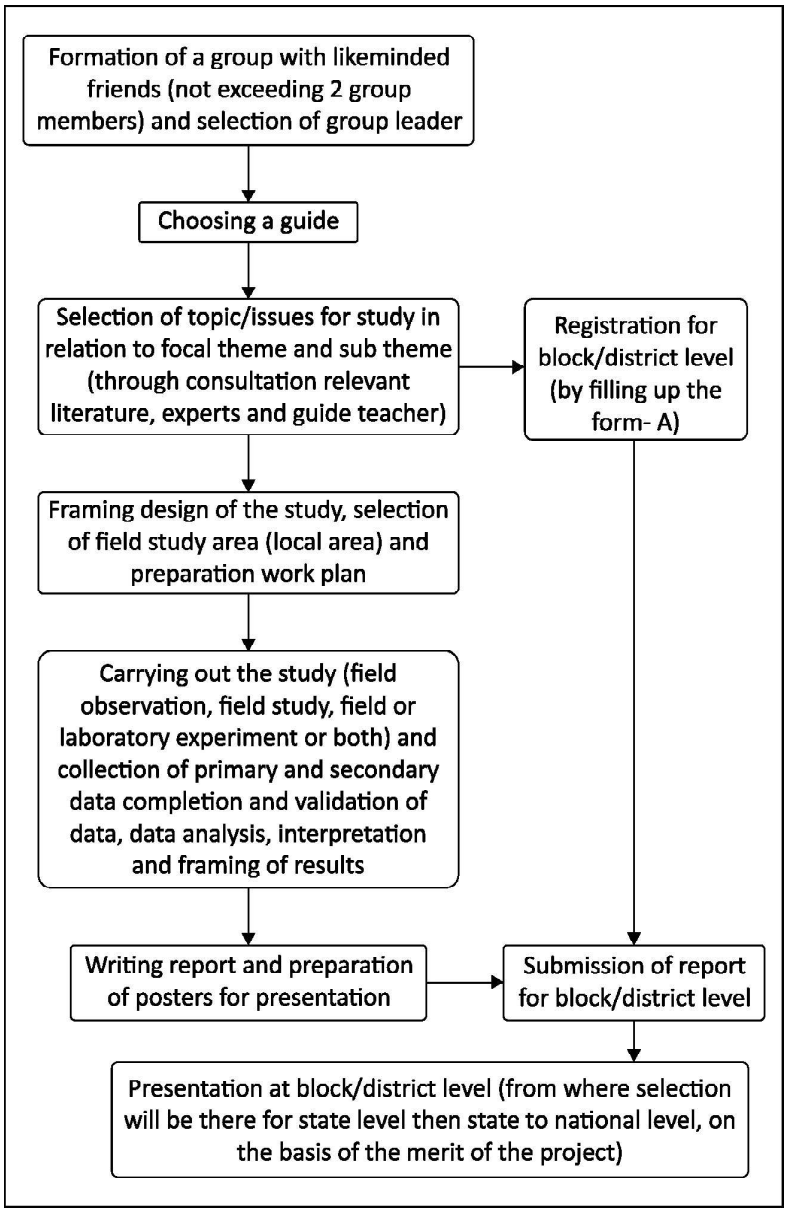
(ii) State to National: As per State-wise quota indicated at Annexure-III is in the ratio 1:10

(iii) The selection ratio of Lower age group (10 to 14 years of age) to Upper age group (14+ to 17 years) should be 40:60.

15. Tentative Activity Schedule of CSC

	Activities	Time Schedule
1)	State level /District level orientation of Guide Teachers-	April-June
2)	Selection of subjects and activity for registration of teams :	June-July
3)	Working on the project:	Minimum 2-3 months
4)	District level Congress:	By September-October
5)	State level Congress:	By November
6)	National level Congress	27-31 December

Fig. 2 :Flow Chart showing Modalities for Different levels of Children's Science Congress



Project Evaluation

Methods of Project Evaluation

The innovative ideas and use of scientific methodology are the primary basis of a good project but one has to prove his/her communication skills also to make others listen and understand his/her findings.

1. Evaluation Criteria

i. **Originality of idea and concept**: A unique or novel project idea which attempts to answer a specific question (a hypothesis driven by curiosity to understand any concept related to focal theme). The idea should not be an exact replication of model projects as printed in the Activity Guide Book. A proper explanation of origin of the idea may be enquired by the evaluator(s).

ii. **Relevance of the project to the theme**: This section focuses on how the project is relevant and linked to the focal theme/sub-theme.

iii. **Scientific understanding of the issue**: Refers to the extent of knowledge (scientific area, basic principles and concepts etc.) the child scientist has in relation to the project idea.

iv. **Data collection**: Systematic collection of information (qualitative and/or quantitative) using relevant tools - experimental data, interviews, surveys (socio-economic/ecological), case studies etc. Sample size should be statistically relevant and sufficient to support the issues under study.

v. **Analysis**: This includes tabulation, categorization/classification, and simple statistics as applicable to the study.

vi. **Experimentation/validation**: Conducting of experiments/field study and validation applying simple methods of science. Experiment need not be very sophisticated but could be simple, self-developed and inexpensive too. Adequate importance should be given to the rigour of the process.

vii. **Interpretation and Problem solving attempt**: To what extent the group has addressed the proposed hypothesis and objectives through the project.

ix. **Team work**: It refers to work division, cooperation and sharing between and beyond the group.

x. **Background correction**: In this case the background of the children is verified like geographical location of their school, village, town etc. in relation to infrastructure, information and other input related facilities available with them. The logic is that children from difficult geographical situation must get some weightage in comparison to the children from advantageous geographical location. Non-school going children and children with disabilities also qualify for the weightage under this criterion.

xi. **Report and Presentation**: Written Report and Oral Presentation are to be evaluated separately. Reports are to be evaluated considering clarity of the objectives, design of methodology, experimental or survey design, systematic presentation of data, tabulation of data, graphical representation and the clarity with which the study has been documented and explained. A Log Book (actually a daily diary) is mandatory and should be authenticated with the signature of the guide on a regular basis. The cover page of the Report and Log Book should carry the title of the project, names of the child scientists, the district and the state, in English/Hindi. Oral presentation would be evaluated on the basis of the interaction with the evaluators, presentation of charts/posters, log book and any other supporting material.

xii. **Follow up Action Plan** (Only for State level): The child scientists should try to find out scientific solution to the identified problem. Has the group conveyed the message to the community? How was it communicated? Will effort continue to involve more people till the problem is solved? Was any action plan suggested? Credit shall be given for similar efforts.

2. Evaluators

i. As the participating children are budding scientists from the age group of 10 to 17 years with limited access to knowledge centres and from different socio-economic backgrounds, they need to be assessed with care. Having understood their limitations, capabilities and capacities, the evaluators must provide them with constructive inputs, positive feed-back and encouragement so that they feel enriched. Evaluators should give suggestions for improvement/refinement of the project or any additional works that they may carry out.

ii. Evaluators need to appreciate and value the efforts, innovativeness and confidence of the participating child scientists and ensure that their unbiased

assessment will work as a guiding light for future endeavours of the child scientists and each one feels intellectually rich and more confident.

iii. Evaluators should evaluate the projects on the basis of subject matter and scientific content and not influenced by the gadgetry or models used or oratory skills of the participants. They should avoid unwarranted comments and comparing the works of the child scientists with those carried out by senior researchers.

iv. Evaluators should avoid creating any distraction to the child scientists while presentation is going on. They should not consider it as a test of what the participating child does not know, rather, they make efforts to know what the child scientist know about the subject area as he/she is dealing with.

Decision of the evaluators are final & no complaints will be entertained

Criteria for Evaluators:

1. The first priority for evaluators will be their expertise and experience in subjects related to Focal Theme and /or Sub Themes having authoritative and field based knowledge so that they are fully capable of assessing projects. It would be ideal if the pool of evaluators is enriched by inducting Ex- Child Scientists working in the field of academia who are involved in academia or pursuing research/ post-graduation in Science, Technology, Engineering or subject relating to the Focal theme.
2. Ideally, the evaluators should have prior exposure to the Children's Science Congress or otherwise would have worked Child-centric projects and having exposure to working with children.
3. Evaluators should not be members of any state academic or organising committee for that particular year.
4. Parents of children participating in CSC in the ensuing year cannot act as an evaluator at any level.
5. Guides of projects participating in CSC, also, cannot act as Evaluator in that particular year.

3. Evaluation Sheet

i. District level

Sl. No.	Criteria	Max. marks		Total
		Written Report	Oral Presentation	
1	Originality of idea and concept	10	10	20
2	Relevance of the project to the theme	10	10	20
3	Understanding of the issue	15	15	30
4	Data collection & analysis	15	15	30
5	Experimentation/validation	10	10	20
6	Interpretation and Problem solving attempt	10	10	20
7	Team work	10	10	20
8	Background correction	10	10	20
9	Presentation	10	10	20
	Total	100	100	200

ii. State level

Sl. No.	Criteria	Max. marks		Total
		Written Report	Oral Presentation	
1	Originality of idea and concept	05	05	10
2	Relevance of the project to the theme	10	10	20
3	Understanding of the issue	15	15	30
4	Data collection & analysis	15	15	30
5	Experimentation/validation	10	10	20
6	Interpretation and Problem solving attempt	20	20	40
7	Team work	05	05	10
8	Oral presentation/ written report (as applicable)	10	10	20
9	Improvement over the previous level suggested	10	10	20
	Total	100	100	200

iii. National level Screening

1. The same team of evaluators will evaluate each project for Oral, Written and Poster presentations.
2. Project evaluation would be for 15 minutes per project - including 8 minutes for Oral Presentation, evaluation of the written report and the posters followed by interaction with the team leader.
3. The parameters and attributes for evaluation at national level are given below.

Sl. No.	Criteria	Max. Points
A	**Oral Presentation**	
1	Originality of idea and concept	05
2	Relevance of the project to the theme	05
3	Understanding of the issue	05
4	Data collection & analysis	10
5	Experimentation/validation	10
6	Interpretation and Problem solving attempt	05
7	Oral Presentation	10
	Sub Total - A	50
B	**Written Report**	
1	Data Collection /Analysis, Graphical Representation etc.	15
2	Methodology-Experiment/Survey design	15
3	Discussion and Conclusion	10
	Sub Total - B	40
C	**Poster Presentation**	
1	Lay out	05
2	Logical Framework	05
	Sub Total - C	10
	Grand Total (A + B + C)	100

Thus each project would have total points of 100, out of which 50% would be for Oral presentation, 40% for Written Report and 10% for Poster presentation.

Evaluation Criterion for the projects under PWD Category (Subject to change)

For the sake of evaluation, the projects will be categorised as & weightage will be given accordingly-

Category-A: Normal children doing projects on PWD

Category-B: Heterogeneous group (normal plus CWDs)

Category-C: Homogeneous CWDs

Distribution of Weightage in % over Total Marks that will be scored by the child):

Category	District & State levels	National
A	5%	0
B	10%	5%
C	20%	10%

Note: The parameters for selection will remain same.

4. Steps to be followed by District Academic Committee (DAC) and State Academic Committee (SAC) for recommending projects for the next level of CSC.

a. Every DAC/SAC need to be more proactive in the evaluation process at respective levels of CSC and for this they need to take appropriate action to strengthen their Committees with subject related persons and also having experience of the programme much more in advance. They will be responsible for proper orientation of the experts, evaluators and mentors.

b. Every project selected to the next level should go through a quality mentoring process.

c. The selected projects from the states should be endorsed by the State Academic Coordinator and the State Coordinator.

d. National Academic Committee would not be responsible in any way for any selection that is done by the respective State Academic Committee (SAC) or District Academic Committee (DAC) or Coordinators at the district or state level. Any query in this regard, would be attended by respective SAC or DAC.

For the projects selected for National Level it is MANDATORY to satisfy the following criteria:

i. The cover page of the project should be either in English or Hindi giving all details like Project title, Sub theme, Language used, School/District/ State name, details of all the group members, Guide etc. The Project Code (State Code+Serial Number of Project assigned) should be given at the Right Hand Top Side of the First Page (Example: HP01 - Himachal Pradesh Sl. No. 01)

ii. Each project to have an Abstract in English also. (See Annexure II)

iii. Four numbers of Posters as already explained.

iv. Written report along with properly maintained Log book.

- *These instructions are to be followed strictly; else the project would not be evaluated at national level.*

Organisers

CSC is organised by National Council for Science and Technology Communication (NCSTC), Department of Science & Technology, Government of India.

State Level CSC is organised in each State/Union Territory by a State Coordinating Agency which in turn empowers State and District Coordinating Committees for organising the state and district level CSCs.

1. Role of District Coordinating Committee, District Coordinators and District Academic Coordinators

i. To agree in writing, on being selected, to act as a District Coordinating Committee and abide by rules and regulations prescribed in the programme guideline and also by the State Coordinating Agency;

ii. To constitute a District Organising Committee and a District Academic Committee consisting of not less than 7 (seven) teachers, activists, ex-child scientists, government officials, representatives of the local bodies etc. and send the list to the State Coordinator.

iii. To register CSC groups (2 children per group) in Form A (Annexure I) and provide them with necessary reference materials, kits and guidance. Number of groups registered to be intimated to the State Coordinator.

iv. While registering, the District Coordinator should assure that the age of the child scientist falls within the age group of 10-17 years as on 31st December of the participating year. If needed, a copy of the age certificate may be retained by the District Coordinator to avoid any confusion at the later stages.

v. To organise orientation workshops for guides and evaluators.

vi. To create linkages with resource institutions/scientists/experts and arrange for their periodic interaction with the registered group of children.

viii. Try to have maximum number of projects in the district including those from informal education system / special schools etc. and strive to increase the outreach in a continual manner.

ix. To organise District Level Congress in consultation with the State Coordinator.

x. To submit Feed-back Reports on all activities, containing names of schools and number of projects at district level and follow up action taken on

projects likely to become part of community action, photocopies of all Registration/Attendance Sheets for all Workshops/Meetings, Evaluation Sheets in original, samples of certificates issued, mementos presented to child scientists, photo documentation etc. related to CSC at the District level to the State Coordinator in the manner and by the date specified;

xi. To maintain a bank account and proper books of accounts at the district level and submit an audited Receipts & Payment account to the State Coordinator by the date and in the manner specified;

xii. To maintain infrastructural facilities, including electronic communication facility, such as internet connectivity, fax etc.

xiii. To arrange review and mentoring of the projects selected for presentation at the State level CSC.

2. Role of State Coordinating Agency, State Coordinators and State Academic Coordinators

The State Coordinating Agency shall have the overall responsibility for the implementation of CSC at the State level. The specific responsibilities shall be-

i. To constitute a State Organising Committee (SOC) and a State Academic Committee (SAC) where minimum 7 (seven) members to be selected from teachers, activists, ex-child scientists, government officials, officials of the local bodies, organisations specifically active in a region in the State, where the State Coordinating Agency does not have a reach. Submit the list of SOC, SAC, DOC and DAC along with Project Proposal for districts and state.

ii. To constitute Regional Coordinators, if found necessary, in case of Big States and to involve SCERT, DIET, IRIS and organisations working with children / elder citizens with disability and media representatives. Distribution of geographical area for organisational purposes etc. will be the prerogative of the State Coordinator

iii. To locate individuals, schools specially interested in other curricular activities;

iv. To select District Coordinating Agencies and obtain consent letter from the respective organisation, where they have to agree to abide by the guideline of CSC and willing to follow the guidelines of NCSTC-DST and State Coordinating Agency of the State;

v. To organise State Level Orientation Workshops of District Coordinators and District academic coordinators, resource persons, evaluators etc.

vi. To coordinate translation of the Activity Guide Book to be used by the guides, resource persons and children in local language and make them available to all concerned.

vii. To maintain a Bank Account and books of accounts at the State level and submit an audited Statement of Expenditure and Utilization Certificates etc. as per standard DST guidelines with a Project Completion Report.

viii. To submit Feed-back Reports on all activities, samples of certificates issued, mementos presented to child scientists, photo documentation etc. related to CSC at the State level to the funding agency in the manner and by the date specified;

ix. To make funds available to District Coordinating Agencies.

x. To create linkages with various technical institutions/organisation along with Testing & Monitoring facilities within the State, to help children in better implementation (information collection/sample testing) of their activities (Identity Cards may be issued to children registered for activities) through District Coordinators/State Coordinators;

xi. To arrange review and monitoring of the projects selected for presentation at the CSC.

xii. To ensure that Evaluation sheets, both written and oral are forwarded to the next higher level, i.e. from district to State and from State to National level.

xiii. State Academic Coordinators should work in close association with the district/State Coordinators for arranging evaluation process and shall make an effort to send one member from State Academic Committee as an Observer to the district level CSC. His/her signature on the selection list is mandatory. The entire process of evaluation is to be supervised by the Observer. Decision of the State Academic Committee shall be final word on the selection.

3. The National Academic Committee (NAC) - Roles & Responsibilities

The National Academic Committee (NAC) looks at the academic aspect of the CSC in a holistic manner at all levels.

The NAC is appointed by the NCSTC, DST for a term of three years. The NAC is an honorary body which frames the guidelines and streamline the conduct of the CSC from time to time in consultation with the National Programme Coordinator.

The NAC has a Chairperson along with a team of members having experience in CSC and expertise in science communication.

NAC also provides constant inputs in improving the methodology, technical content like finalization of the Activity Guidebook, helps in national brainstorming and orientation workshops at various levels - all of which aims at capacity building of stakeholders

One of the critical roles of the NAC is to continuously evolve a child-friendly screening system of CSC projects at all levels. A massive programme like CSC cannot have a static model of evaluation system and thus requires constant up gradation with inputs from state/districts with mutual flow of ideas / suggestions which are practical, realistic and implementable.

The person who is nominated to the National Academic Committee should not be part of any CSC committees or evaluators at state/district level. But every NAC member can definitely help the states in terms of training programmes, orientation of various stakeholders as observers in the state CSC activities and for overall strengthening of the quality of CSC at various levels from district to national level.

Annexure-I

National Children's Science Congress

REGISTRATION FORM -A

Fill this form in Capital letters and submit to your District Coordinator

1. STATE
2. DISTRICT
3. TALUKA
4. TITLE OF THE PROJECT
5. SUB-THEME CODE
6. LANGUAGE USED
7. AREA [RURAL/URBAN]
8. NAME OF THE INSTITUTION
Address
PIN Phone E-mail ID
10. . NAME OF PRINCIPAL/HEADMASTER/HEAD OF INSTITUTION
11. NAME OF GROUP LEADER
Gender [Male/Female]
Date of Birth / / AGE Whether has disability (Y/N) Type of disability (see code)
Address
PIN Phone E-mail ID
12. NAME OF GROUP MEMBER
Gender [Male/Female]
Date of Birth / / AGE Whether has disability (Y/N) Type of disability (see code)
Address
PIN Phone E-mail ID
13. NAME OF GUIDE
Gender [Male/Female]
Address
PIN Phone E-mail ID

Name & Signature of District Coordinator Name & Signature of Head of Institution Date:

Sub Theme Codes : Eco System for Sustainable Living, 02-Appropriate Technology for Sustainable Living, 03-Social Innovation for Sustainable Living, 04-Design, Development and Modelling for Sustainable Living, 05-Traditional Knowledge System (TKS) for Sustainable Living

Types of Disabilities /Codes: Visual Impairment: VI, Low Vision: LV, Totally Blind: TB, Mental Retardation: MR Hearing Impairment: HI, Speech Impairment: SI, Multiple Disability : MI, Learning Disability : LD, Autism: AUT, Orthopedically Impaired: OI, Cerebral Palsy : CP

Age should be between 10-17 years as on 31st December of the current calendar year

District Coordinator to verify the age of all participants with Birth Certificates.

Copy of this form to be enclosed in the Project Written Report

Annexure-II

FORMAT OF THE ABSTRACT
___TH NATIONAL CHILDREN'S SCIENCE CONGRESS 20__

STATE- _____ STATE CODE: _____

Language : _____ Category:Lower/Upper
Area of Participation: Rural/Urban

Title : Project Title
Author's Name: Aaaaa, (Team Leader), Bbbbbb†

Name of School:……
Address of School: ……
Distrct…….. State:…… PIN: ……..
E-mail: …… Contact
No.....

ABSTRACT

[TEXT]
Put your text here which will contain the Objectives, Objective wise Methodology & Work plan, Experiments carried out, Observation, Results and Analysis & Conclusion in short
(The Abstract should give clear idea as to what your project is, how it was carried out and also what has been the inferences and conclusion, follow up carried out etc.)
Maximum 250 words for projects in the Lower Age Group and 300 words for projects in the Upper Age Group

Name & Address of Guide Teacher: ……
…….. PIN……
Phone.....

Note: 1. The write-up should be in New Times Roman in 12 point font in A4 size paper.
† 2. Write the names of both the members with the Group leader's

Annexure-III

STATE WISE QUOTA FOR NATIONAL LEVEL OF CHILDREN'S SCIENCE CONGRESS

State/UT	Category	No. of Projects	Escort Teacher	Coordinator SC + SAC	Total
1. Andaman and Nicobar Island	T	4	1	2	7
2. Andhra Pradesh	M	17	4	2	23
3. Arunachal Pradesh	MS	10	4	2	16
4. Assam	B	26	7	2	35
5. Bihar	VB	30	8	2	40
6. Chandigarh	T	4	1	2	7
7. Chhattisgarh	M	16	4	2	22
8. Delhi	S	8	2	2	12
9. Dadra & NH & Daman & Diu	T	4	1	2	7
10. Goa	S	8	2	2	12
11. Gujarat	B	26	7	2	35
12. Haryana	M	16	4	2	22
13. Himachal Pradesh	M	16	6	2	24
14. Jammu	S	7	2	2	11
15. Kashmir & Ladakh	S	9	2	2	13
16. Jharkhand	M	16	4	2	22
17. Karnataka	VB	30	8	2	40
18. Kerala	M	16	4	2	22
19. Lakshadweep	T	4	1	2	7
20. Madhya Pradesh	VB	30	8	2	40
21. Maharashtra	VB	30	8	2	40
22. Manipur	MS	10	4	2	16
23. Meghalaya	S	8	3	2	13
24. Mizoram	S	8	3	2	13
25. Nagaland	S	8	3	2	13
26. Odisha	B	26	7	2	35
27. Puducherry	T	6	2	2	10

State/UT	Category	No. of Projects	Escort Teacher	Coordinator SC + SAC	Total
28. Punjab	M	16	4	2	22
29. Rajasthan	VB	30	8	2	40
30. Sikkim	T	4	2	2	8
31. Tamil Nadu	VB	30	8	2	40
32. Telangana	M	13	4	2	19
33. Tripura	MS	10	4	2	16
34. Uttar Pradesh (East)	L	21	6	2	29
35. Uttar Pradesh (West)	L	21	6	2	29
36. Uttarakhand	M	16	6	2	24
37. West Bengal	VB	30	8	2	40
Sub-Total		584	168	73	825
38. Kendriya Vidyalaya Sangathan		42	20	10	72
39. Navodaya Vidyalaya Samiti		32	15	8	55
Total		658	203	91	952

NB: 1.T-Tiny, VT-Very Tiny, S-Small, M- Medium, MS- Medium-Small, B- Big, VB- Very Big, G-Giant. When Coordinator is more than one, the State Academic Coordinator also should attend.

2.For Remote State/UT: Escort Teacher 1 for 3 Children, for others, 1 for 4 Children.

3.Actual quota will get reduced to the percentage of districts covered in the state CSC programme