

Children's Science Congress-2022

Focal Theme: 2022 & 2023

**UNDERSTANDING ECOSYSTEM
FOR
HEALTH AND WELL-BEING**

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National Children Science Congress-NCSC

- Flagship Programme of DST, Govt. of India-NCSTC, State S&T Councils, Department of Education....etc.
- **Duration:**
 - Year 2023 is the 31st year
- **Levels and Age: (as on 31.12.2023) :**
 - 10 to 14 years – Junior
 - 14+ to 17 years – Senior
 - Even if one child is 14+, the team will be included in the Senior category
- **Team members:**
 - ✓ Two Children and a Guide Teacher
 - ✓ Children not in schools- can also participate

National Children Science Congress-NCSC

- Large number of Children, Guide teachers, Evaluators, Mentors, Scientists , Experts involved in this programme.
- One of the most innovative, historical programme ever carried out at such large scales
- A programme where the whole country is engaged, from Universities, Technical Institutions, Colleges, Formal / Informal schooling / Education, Central to State, District to the village
- Focus on pedagogy, learning outcomes, teacher education/capacity building through critical thinking and action research
- ✓ **16 projects selected for national level from HP**

OBJECTIVES

- To provide a forum to the young scientists to pursue their natural curiosity and to quench their thirst for creativity by experimenting on open-ended problems;
- To make one feel that science is all around and him/her, can gain knowledge as well as solve many problems also be relating the learning process to the physical and social environment of the neighborhood;
- To encourage children throughout the country to visualize the future of the nation and help building generations of sensitive, responsible citizens;
- To stimulate scientific temperament and learning the scientific methodology for observation, collection of data, experiment analysis arriving at conclusions and presenting the findings.

Objectives

- ✓ Learning by Doing
- ✓ **Bringing out natural talent of children**
- ✓ Giving them opportunity to work on a neighborhood societal problem
- ✓ **Bring a viable solution through scientific means**
- ✓ Apply their mind on topics of current importance

Overview

- Project activities through adopting the process of learning through doing
- Exploration /theorizing / surveying / experimentation/relating to surroundings
- Applying of 'What is learnt at school' and 'creating new insights'
- How science works: From known to unknown or from unknown to known
- 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

Scientific Projects

- **Scientific project is a systematic and basic study of a problem**
- **Different questions asked to find the solution of the problem**
- **Different experiments carried out in a scientific project to get new knowledge about the project**
- **The scientific method is a way to ask and answer scientific questions by making observations and doing experiments.**

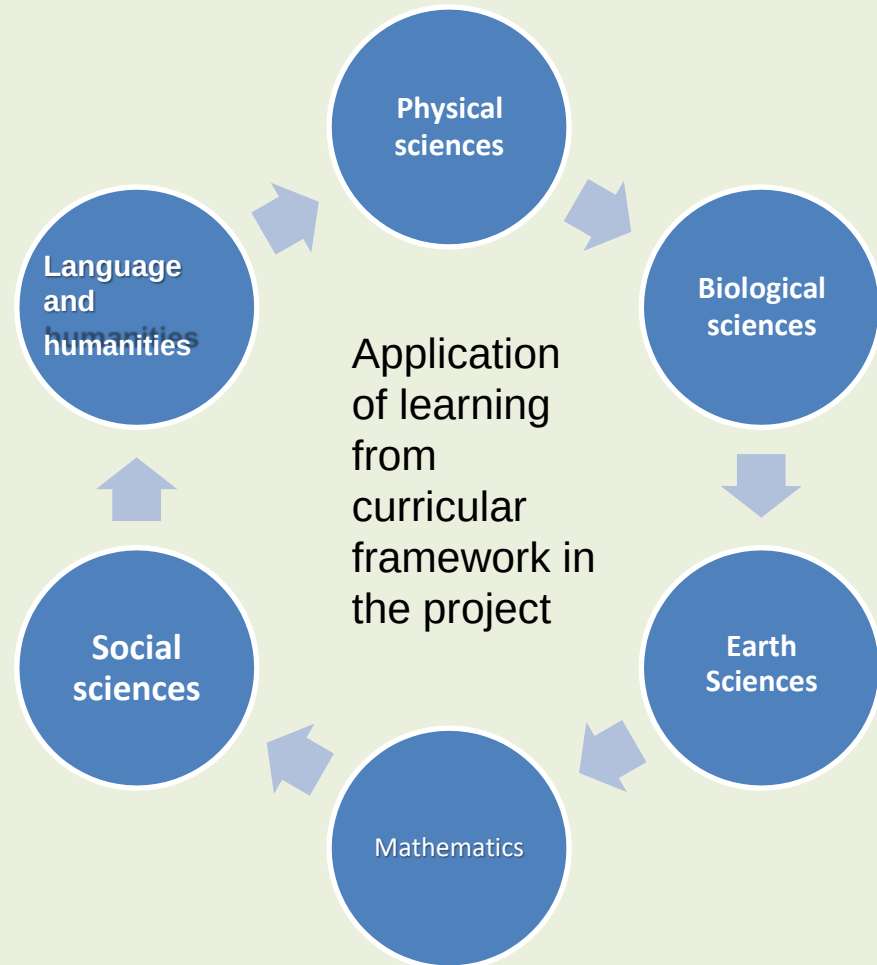
Principle one

- Inquiry based learning



Principle two

- Integrated learning



Good Scientific Projects

- **Innovative**, simple and **practical**
- Representing teamwork
- Based on exploration of **everyday life-situations**
- Involving **Experimentation** and/or field based data collection
- Having definite outputs, arrived through **scientific methodology**
- Related directly to community work in the **local geographical area**
- Having definite **follow-up plans**.



GOOD SCIENTIFIC PROJECTS



Innovative



Original / New



**Scientific
Methodology**



**Neighborhood /
Local Problem**



**Solution /
Follow-Up Action**



**Log-Book /
Data Collection**



Team-work



Language

SMART Projects

- **S – Specific**
- **M – Measurable**
- **A – Appropriate**
- **R – Realistic**
- **T – Time Bound**



SMART APPROACH

Issue of study be measurable
in Quantitative / Qualitative
forms so that component of
Comparability is maintained

Issues of the study must
be realistic along with
the methodology
adopted for the purpose



SPECIFIC

The subject / issues of
study must be specific



MEASURABLE



APPROPRIATE

Topic must be
appropriate to focal
theme & sub-themes,
along with field study
area, methodology must
be appropriate to nature
of the issues considered
for the study



REALISTIC



TIME-BOUND

Study carried out in
limited time-frame.
Project activities may
not de-stabilized
normal activity
schedule of the child

STRUCTURE OF THE PROJECT REPORT

- **Cover page –**
 - Title of the project
 - Name and address of Group leader and co-workers
 - Name and address of guide
- **Form – A (Registration form)**
- **Abstract –**
- **Contents/Index-**
- **Introduction-** description on background of the study
- **Aims and objectives of the study**
- **Hypothesis**
- **Need statement**
- **Work plan**
- **Methodology**
- **Observations**
- **Data analysis and interpretation**
- **Results**
- **Conclusions**
- **Solution to the problem**
- **Future plan**
- **Acknowledgement**
- **References**



REPORT STRUCTURE

1 Cover Page

English or Hindi; Project Title;
Name & Address of GL, GM &
GT; Name of School;
Language Used & Project
Code

2 Form - A

Registration Form

3 Abstract

Compulsory in English, 250
words for Junior & 300
words for Senior

4 Contents

List of Chapters with detail
heading & sub-heading; list of
table, chart, maps along with
reference against page numbers

5 Introduction

Description on background
of the study

6 Hypothesis

To be written clearly in one or
two sentences

7 Objectives

To be written point by point
(Not more than five)

8 Methodology

Experimentation, Survey & Case
Study

9 Observation & Data Collection

10 Data Analysis & Interpretation

14 Future Scope of the Work or Follow-Up

13 Solution to the Problem

Results

12 Conclusion & Inference

15 Acknowledgment

16 References / Bibliography

Posters

(Four posters)

Organize your information like logically so that your audience can quickly follow the thread of your experiment/Project.

Use a BIGGER font size. (Write in bigger letters so that people can see your charts from a distance itself.

The title should be big and easily read from across the room.

Give your main tables/data analysis etc. leading to the Conclusion.

A graphical representation/picture speaks a thousand words!

Project Title:
Project Team /State
Name of School

Objectives:

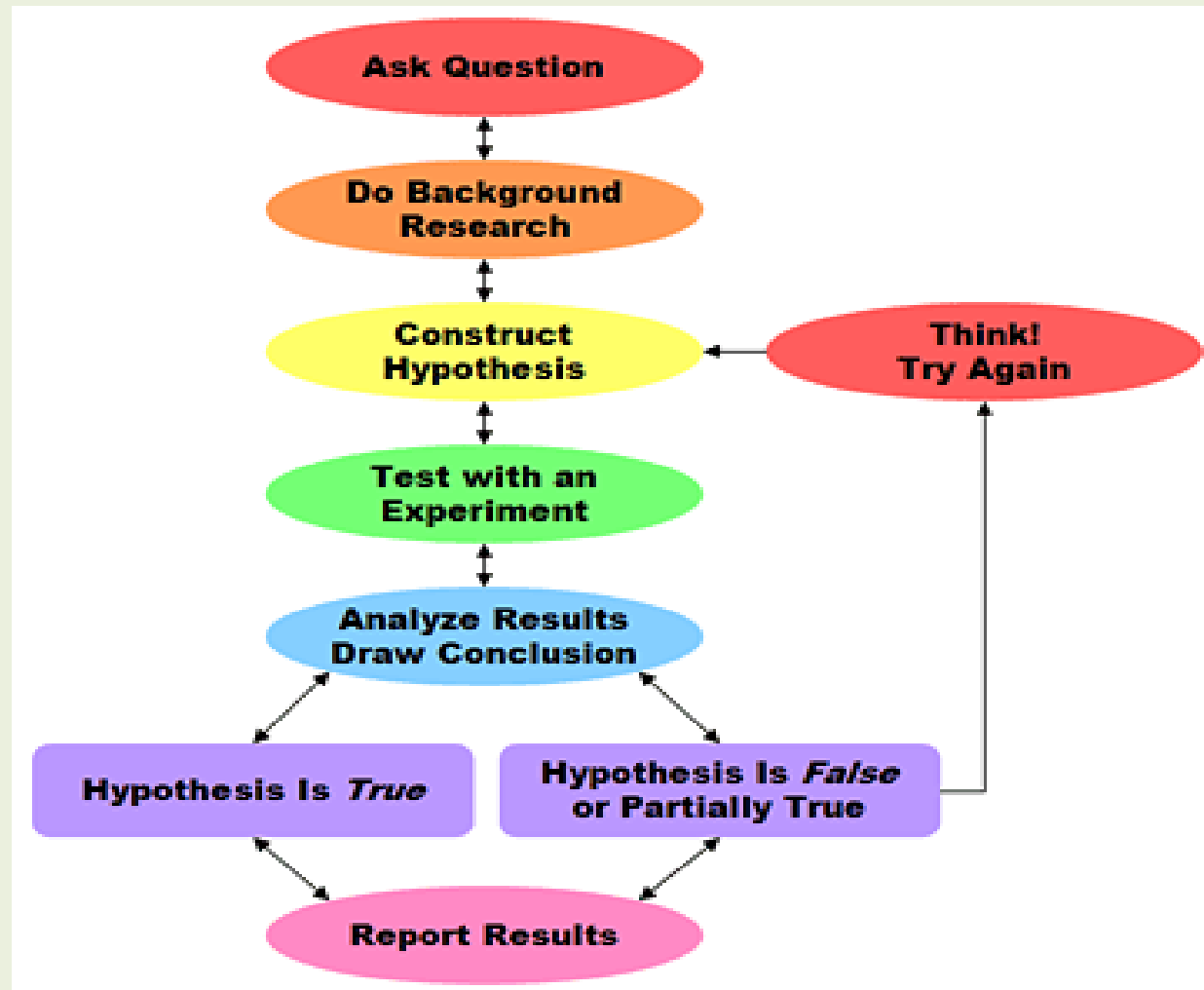
MAP/Methodology:

Work Plan
Experimental
Design./Methods
Observations
Compiled Data
Table

Results/Data
Analysis/
Graphical
Representation

Conclusions/
solution/
Follow up / Any
other matter of
relevance.
Photographs (3-4
nos).

Methodology



Hypothesis

Construct a Hypothesis: A hypothesis is an educated guess about how things work:

"If _____*[I do this]*_____, then _____*[this]*_____will happen."

You must state your hypothesis in a way that you can easily measure, and of course, your hypothesis should be constructed in a way to help you answer your original question.

e.g. When you wash a bunch of leaves of a garden plant in a bowl of clean water, and if you get a change in colour of the water, the area has a lot of dust particles or could be a polluted area. (which can be quantitatively measured by setting up an experiment)

Key Elements of the Experimental Procedure

- **Description and size of all experimental and control groups,**
A step-by-step list of everything, complete experiment, and record exactly what will need to be done in each step.
- **The experimental procedure must tell how you will measure the change in independent and dependent variable or variables**
- **The experimental procedure must explain how you will measure the resulting change in the dependent variable or variables**
- **If applicable, the experimental procedure should explain how the controlled variables will be maintained at a constant value**
- **The experimental procedure should specify how many times you intend to repeat your experiment, so that you can verify that your results are reproducible.**

Materials List.

Make a list of the materials that you require in your project as specific as possible, and be sure you can get everything you need before you start your project.

A Good Materials List Is Very Specific	A Bad Materials List
500 ml of tap water	Water
Stopwatch with 0.1 sec accuracy	Clock
500 ml Conical Flask	Glass Flask
Card-board box of dimensions-15cm x 25cm x 30 cm.	Box
Plastic measuring scale of length 30 cm.	Measuring Scale
AA alkaline battery – 1.5 Volts.	Battery

Conducting a Science Experiment

If you haven't already, obtain a notebook to record all of your observations during your experiment.

Before starting your experiment, prepare a data table or a DUMMY table so you can quickly write down your measurements as you observe them.

Follow your experimental procedure exactly. If you need to make changes in the procedure (which often happens), write down the changes exactly as you made them.

Be consistent, careful, and accurate when you take your measurements. Numerical measurements are best.

Take pictures of your experiment for use on your display board if you can.

TABLE

Day (Date)	Morning Temp (5AM)	Night Temp (10 PM)
1 (22.7.18)		
2 (23.7.18)		
3		
4		
..		

Analyze Your Data and Draw a Conclusion:

Once your experiment is complete, you collect your measurements and analyze them to see if your hypothesis is true or false.

Scientists often find that their hypothesis was false, and in such cases they will construct a new hypothesis starting the entire process of the scientific method over again.

Even if they find that their hypothesis was true, they may want to test it again in a new way.

Communicate Your Results

- To complete your CSC project you will communicate your results to others in a final report and/or a display board.
- Professional scientists do almost exactly the same thing by publishing their final report in a scientific journal or by presenting their results on a poster at a scientific meeting.

Log/Laboratory notebook

Throughout the process of doing your science fair project, you should keep a record containing all of your important ideas and information. This record book is called a laboratory notebook or a **LOG BOOK**.

Please remember that LOG BOOK IS MANDATORY FOR ALL NCSC PROJECTS AND SHOULD BE BROUGHT WHILE MAKING THE PRESENTATION!

Log book:

- Have date-wise entries in the book.
- Use the log book regularly and systematically.
- Put your name, address, phone numbers etc.
- Number the pages.
- Record the date and time of every observation.

ABSTRACT

Introduction. This is where you describe the purpose for doing your science project or invention. Why should anyone care about the work you did?

Motivate the reader to finish the abstract and read the entire paper or display board.

Problem Statement. Identify the problem you solved or the hypothesis you investigated.

Procedures. What was your approach for investigating the problem? Don't go into detail about materials unless they were critical to your success. Do describe the most important variables if you have room.

Results. What answer did you obtain? Be specific and use numbers to describe your results. Do not use vague terms like "most" or "some."

Conclusions. State what your science project or invention contributes to the area you worked in. Did you meet your objectives? For an engineering project state whether you met your design criteria.

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:

District: 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 name shown first & Underlined as shown above

Project Report : Summary

- The project file may be prepared in **regional languages**, however, a **brief summary** of the project must be given in **English**
- The summary of the project should be given to the evaluators before the main presentation
- The summary should contain the topic, brief account of survey/experiments and the outcome of the project along with follow up actions

Project Report- Improvement

- If the project gets selected at the district or state level for further participation, each report should include a last page in their report regarding **improvements carried out after the last level according to comments received from the evaluators.**
- Remember the improvements from the last level carry special marks.
- The Report also should clearly mention, under **which Sub Theme the project is categorized**, the language used in the Report & Presentation.

Size & Look of the Project Report

- Keep your report precise and avoid unnecessary information and things which are not needed to make YOUR work understandable. Limit the report to what you have done and not what others have done in the world. If you want to make references, just mention them and give reference at the end.
- For JUNIOR projects (10 – 14 years), the length of the project should NOT be more than **2500 words**.
- For SENIOR projects (14+ - 17 years), the length of the project report should not be more than **3500 words**.
- Reports can be hand written or typed with FONT Size of 12 points for the main text.
- DO NOT PRINT YOUR REPORT IN EXTRA LARGE FONT SIZE
- Use Normal FONTS for the report and not Fancy Fonts..
- While presenting bring your LOG BOOK (original data recordings).
- Language – **Local, National or English**

Project Presentation

- **Total 10 minutes**: 8 minutes to present the report and 2 minutes for interaction with evaluators and written report evaluation etc.
- Working models/charts/transparenties can be used for presentation
- **Group Leader** to present the Report
- Summary of Report in around **500 words in English** required
- **Three copies** of report to be prepared
- **4 posters** (55 cm x 70 cm) Mandatory and in addition, 5 power point presentation slides may be used monitoring

Posters

(Four posters)

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NCSC-2023

- **NCSC – Theme changes every 2 years**

Focal Theme: 2020 & 2021

Science for Sustainable Living

Current Focal Theme: 2022 & 2023

**UNDERSTANDING ECOSYSTEM
FOR
HEALTH AND WELL-BEING**

Current Focal Theme: 2022 & 2023

UNDERSTANDING ECOSYSTEM FOR HEALTH AND WELL-BEING

- I. Know your ecosystem**
- II. Fostering health, nutrition and well-being**
- III. Social and cultural practices for ecosystem and health**
- IV. Ecosystem based approach (EBA) for self-reliance**
- V. Technological innovation for ecosystem and health**

SUB-THEME I: KNOW YOUR ECOSYSTEM

- To explore, identify and carry out studies on the ecosystem(s)
- Different components (abiotic and biotic)
- Inter-relationship & functions
- Role of certain species in the ecosystems
- Association of biodiversity with the ecosystem
- Ecological services
- Human dependency on the ecosystem
- Impact of human activities on the ecosystem

SUB-THEME I: KNOW YOUR ECOSYSTEM

FOCAL AREAS

- Exploring and understanding the ecosystem in your neighbourhood
- Freshwater (stream, river, pond, lake, tank etc)
- Forest
- Grassland
- Agroforestry
- Farmland
- Home garden
- Trees
- Community-based practices
- Anthropogenic pressure /interruption

Sub-Theme I: Know Your Ecosystem

Project ideas:

- 1. Comparison of butterfly populations in urban and rural environs**
- 2. Diversity in the mangrove**
- 3. Diversity of water plants in the local pond/wetland**
- 4. Diversity of water plants in the disturbed pond/wetland and intact pond/wetland in the locality**
- 5. Impact of urbanization on the mangrove ecosystem**
- 6. Impact of solid and liquid wastes on the mangrove ecosystem**
- 7. Impact of solid and liquid wastes on the wetlands**
- 8. Diversity of flora and fauna in the sacred grove**
- 9. Comparison of soil organism in sacred grove and agricultural land/plantations in the neighbourhood**
- 10. Urban birds and their survival tactics**
- 11. Probe in to reasons of the disappearance of sparrows in urban/ rural environs**
- 12. Pollinators in the home gardens**
- 13. Diversity of spiders in the paddy fields and their role in pest control**
- 14. Mixed hunting party of birds in rural areas and their dynamics**
- 15. Birds in the paddy fields**
- 16. Study of heronry and the dynamics**
- 17. Fruit eating birds in the locality and their role in seed dispersal**

Sub-Theme 1: Know your ecosystem

Project ideas:

- 18. Dragonfly and damselfly diversity in the locality**
- 19. Dragonfly larvae and their role in mosquito larvae control**
- 20. Bird flowers and flower birds**
- 21. Ecosystem restoration of different mined areas**
- 22. Coastal erosion and impacts**
- 23. Choice of native and exotic plants in the home gardens and the transformations in the garden ecosystems**
- 24. Change in riparian vegetations in different zones in a river**
- 25. Analysis of change in the local landscape based on satellite images and land surveys**
- 26. Riparian vegetation dynamics and its relation to diversity in aquatic fauna in the locality**
- 27. Earthworm presence and density as an indicator of soil organic content and soil health**
- 28. Study of pollinators in the mustard field.**
- 29. Pollinators and pollination**

SUB-THEME II: FOSTERING HEALTH, NUTRITION AND WELL-BEING

- **Scientific inquiry about situation of health (both human and animal), nutrition and well-being**
- **Identify ways and means to fortify and foster the situation ensuring health safety and security**
- **Nutritional security and well-being at individual, family and community levels**

SUB-THEME II: FOSTERING HEALTH, NUTRITION AND WELL-BEING

Focal Areas

- **Know your health**
- **Know your food**
- **Sources of food in your locality**
- **People's practices**
- **Myth and reality**
- **Disaster and health safety**

Theme II: Fostering health, nutrition and well-being

Project ideas:

- 1. Water disinfection / treatment using solar energy**
- 2. Correlation between junk food and obesity**
- 3. Nutritive value of local / seasonal fruits / vegetables**
- 4. Study of common / local zoonotic diseases**
- 5. Evaluation of level of essential nutrients in food stuffs**
- 6. Impact of climate change on the diseases of humans and/or plants and/or animals**
- 7. Assessment of animal feeds on production**
- 8. Study of food-system in tribals and its impact on their health and well-being**
- 9. Role of public health system on societal well being**
- 10. Study of deficiency diseases and approach to overcome at local level**
- 11. Comparison of balanced diet across cultures**
- 12. Study of methods adopted for physical / social well-being at school level**
- 13. Companion animal health and impact on household well-being**
- 14. Study of nutritional deficiency in the community and means to overcome**
- 15. Analysis of nutritive values of plant-based versus animal-based food for specific ingredient**

SUB-THEME III: SOCIAL AND CULTURAL PRACTICES FOR ECOSYSTEM AND HEALTH

- **To identify, document and validate local sociocultural practices in their local contexts evolved over a period of time for the protection of ecosystems and their associated services**
- **To identify the sustainability and conservative nature by which such knowledge systems got transferred from one generation to another**

SUB-THEME III: SOCIAL AND CULTURAL PRACTICES FOR ECOSYSTEM AND HEALTH

Focal Areas

- **Understanding the society and culture, people and their practices, interrelation to ecosystem and health**
- **TKS base frame of references**
- **Acquired modern frame of references**

Sub-Theme III: Social and cultural practices for ecosystem and health

- 1. Agriculture related social and cultural practices leading to non-chemical farming with respect to biological pest and nutrient management.**
- 2. Human animal conflict and linkage to local ecosystem degradation and coping mechanisms.**
- 3. Land use changes causing ecosystem changes leading to flash-floods/land-slides including vulnerability mapping of potential landslide hotspots.**
- 4. Cloud-burst and resultant flooding and its impact on agro-ecosystems.**
- 5. Rain-gardening/farm ponds/soil erosion control measures / Continuous Contour Trenches/gabion etc. and study of regeneration of green cover over sloppy terrains.**
- 6. Season watch – mango and other fruit orchards / other species / link to local marketing and study the process of flowering and its linkage to whether they have the same latitude/longitude etc.**
- 7. Sacred groves and their importance / role in conservation and local traditions and ecosystem services.**
- 8. Selective and controlled pruning of trees/fodder for cattle rearing / Jack tree leaves for goats etc. as a conservative measure.**
- 9. Role of traditional games/sports and their linkage to health / Physical activity mapping/ seasonal games etc.**
- 10. Food preservation/processing linked to seasonal availability of resources / fish /meat /vegetable process / in various agro-ecosystems.**
- 11. Fisheries / Conservative measures leading to sustainable fishing.**

Sub-Theme III: Social and cultural practices for ecosystem and health

12. Pest-predator balance in agro-eco systems and cultural pest control measures as opposed to conventional farming / comparative study / economics of input-based farming with natural farming systems
13. Study on sustainable menstruation as a means to avoid plastic waste.
14. To study role of rain garden in water recharge.
15. Study and compare lifestyle of different group/communities either in village or cities.
16. To study the effect of market force on changing pattern of festivals / dresses / food habits/ Community celebration and its effect on ecosystem.
17. To study the importance of our various festivals/traditional games/toys and their relation with our cultural aspects and mental health.
18. To study traditional biological control methods of pest management and its role in ecosystem.
19. Study on biofencing plants of local area and its role in a)checking man animal conflict b)conservation of ecosystem.
20. Scientific study on traditional method of food storage processing and its role in ecosystem.
21. Study on land use and its role in ecosystem conservation by sea buckthorn (Hippophae)[In reference to local area of Leh- Ladakh]
22. Study on local community knowledge of polyherbal medicine to control tick infestation in Dairy Animals in eco-friendly way.
23. Study of machining Makhana(Fox nut/Gorger nut) popping a way to save health and improve livelihood of makhana growers.

IV: Ecosystem based approach (EBA) for self-reliance

Ecosystem based approach (EBA) is an integrated approach of planning and managing interaction of ecosystem with human activities.

Thrust Areas

1. Natural resource management like water level management, soil erosion etc.
2. Farm based activities like – sustainable agriculture, agro-forestry, animal husbandry, sericulture, aquaculture, apiculture etc along
3. Non-farm based activities like value addition of farm based products.

IV: Ecosystem based approach (EBA) for self-reliance

Objectives

1. To understand various sustainable uses, conservation of natural resources and restoration of ecosystems
2. To understand multiple social, economic and cultural benefits to local communities.
3. Studying/documenting existing or innovative methods of Increasing resilience to climate change.

Sub-theme: IV: Ecosystem based approach (EBA) for self-reliance

- 1. Study of dependency of a village on the nearby forest.**
- 2. Documentation of the wild edibles from different habitats in the surrounding area.**
- 3. Assessment of current scenarios of different natural resources in the surrounding area of your school.**
- 4. Management of solid waste in urban areas- Reduce, Segregation, Collection (efficiency), Transportation, Resource recovery, Disposal.**
- 5. Study of impact of traditional agriculture on water harvesting system.**
- 6. Study of propagations techniques of different wild edibles.**
- 7. Study of vulnerable/ degraded resource areas in the surrounding.**
- 8. Study of restoration practices (indicative) for degraded ecosystems.**
- 9. Study of different man-made habitats like gardens and other open spaces and their role in urban areas.**
- 10. Study of aquatic flora to reduce water pollution.**
- 11. To study different practices of crop rotation, relay cropping, etc. for sustainable production (documentation, reflected in soil health, comparison between two patches).**
- 12. To study the diversity of birds in agriculture systems and their role.**
- 13. Study of mushroom cultivation.**
- 14. Study of beekeeping and its role in maintaining the ecosystem.**
- 15. Effect on food supply chain during pandemic.**

Sub-theme IV: Ecosystem based approach (EBA) for self-reliance

- 16. Study and documentation of food preservation practices for crisis period.**
- 17. Study of per capita water resource availability (domestic use) for a village or town.**
- 18. Study of salt tolerant and salt loving plants in coastal agroforestry and agriculture.**
- 19. Assessment of existing fish habitats and measures to improve them.**
- 20. Study of aquaponics cultivation.**
- 21. Study of different groundwater recharge practices.**
- 22. Study of role of vegetation in water percolation, retention, reducing runoff and erosion.**
- 23. Integrating plants and water for cooling and air conditioning within settlements and buildings.**
- 24. Micro watershed mapping.**
- 25. Carbon sequestration in your surroundings (Vegetation- Height, girth of trees-)**
- 26. Terraced cultivation in hilly areas**
- 27. Study on After effect of flash floods, storms, landslides.**
- 28. Water usages in packaged water bottle vs from Tap bottle water**
- 29. Study of road killed small vertebrates and invertebrates**
- 30. Survey and documentation of the biodiversity in the potential Biodiversity heritage sites**
- 31. Study on different Tree species in an Homestead Agroforestry systems**
- 32. Study of multipurpose tree species in the locality**

Sub-theme-V: Technological innovation for ecosystem and health

- 1. Biomass (Algae, Bio-residue, waste, etc.) as green energy**
- 2. Design and development of simple and economical devices for measuring water quality**
- 3. Appropriateness of water purifiers**
- 4. Technology for potable drinking water delivery during flood**
- 5. Design, development of a solar water still for coastal and brackish water areas**
- 6. To develop a simple tool for measuring water table depth in tube well**
- 7. Bamboo as a sustainable engineering material.**
- 8. Solar/ biomass-based crop dryers for farmers**
- 9. Simple technology for weather monitoring (measurement of rainfall, wind, solar radiation duration, humidity, etc.)**
- 10. Technologies for person with disability**

V: Technological innovation for ecosystem and health

Technology has evolved much on the scientific principles of 'low inputs to get high output', reducing wastage of material, time and labour, tapping renewable energy resources, tapping wealth from waste.

Thrust Area

Ideal design and development of new or existing technology for :-

1. Ecosystem conservation
2. Sustainable resource management
3. Health safety
4. Sanitation management
5. Disease diagnosis

V: Technological innovation for ecosystem and health

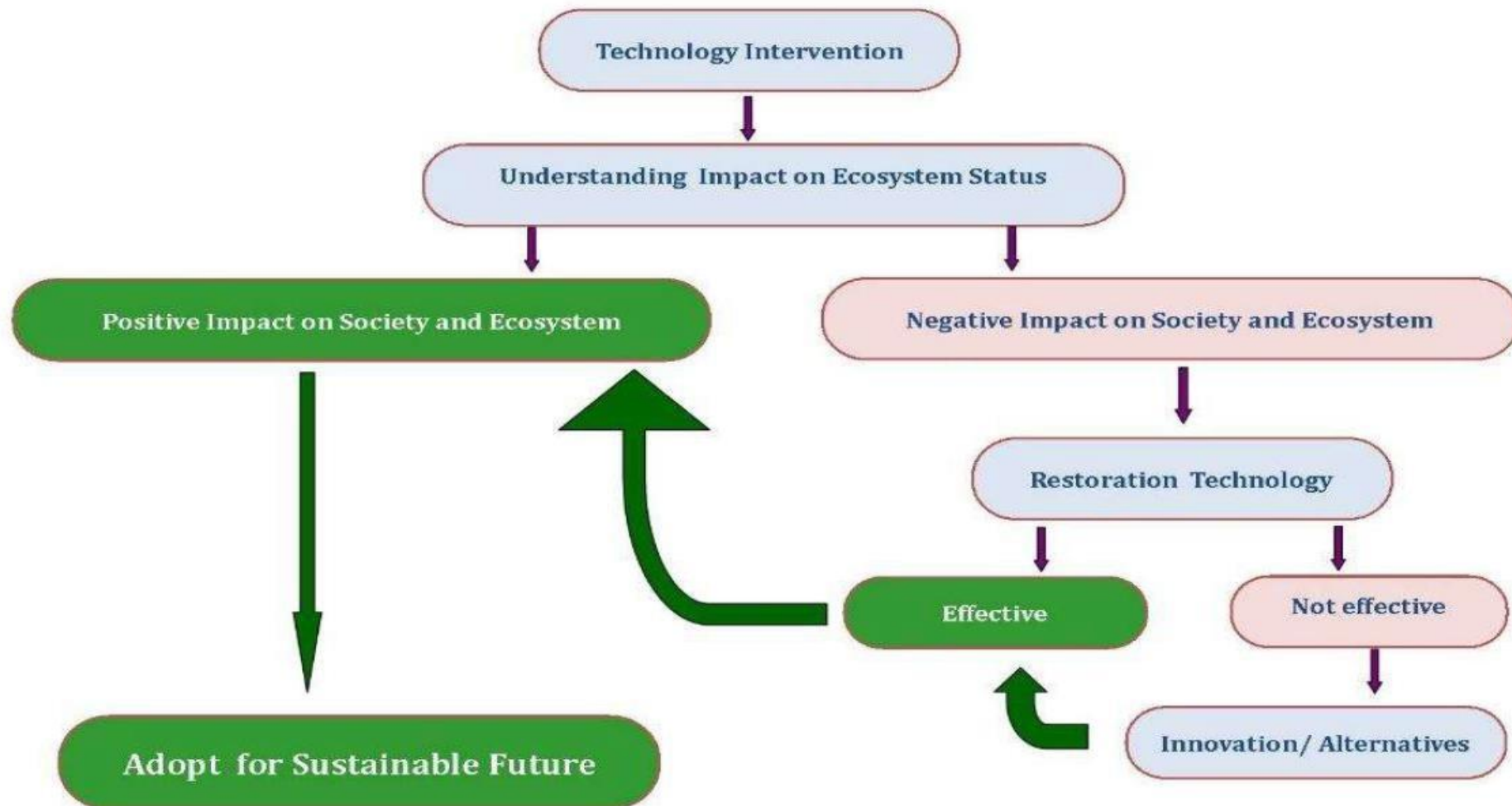
Objectives

1. To understand and appreciate the impact of technology on ecosystems, health and wellbeing.
2. Use of appropriate technologies to restore and strengthen ecosystem health.
3. To innovate tools /technologies / and processes to support sustainable living.

V: Technological innovation for ecosystem and health

Scopes

1. Traditional knowledge systems and community participation is crucial to innovation:



Sub theme V: Technological innovation for ecosystem and health

- 11. Grey water treatment using plants and microorganisms.**
- 12. Use of Biochar to improve moisture and nutrient retention in soil**
- 13. To study traditional fishing tools and gears and its modification to make it more efficient and productive**
- 14. Rain water harvesting accessories**
- 15. Comparative study of thermal performance of traditional and modern houses**
- 16. Exploring electric mobility**
- 17. Measuring specific heat of water and appreciating its role in ecosystem maintenance**
- 18. Information and communication technology (ICT) for decentralized healthcare delivery**
- 19. – to develop a frugal process**
- 20. Application of artificial intelligence for estimating market demand for agri-products**
- 21. To study micro climate condition at the habitat level**
- 22. To develop solutions for stubble burning issue**
- 23. To explore the use of fruit and vegetable waste for extraction of value-added materials like pectin or pigments<**

Important Instructions for District Coordinators

- **Ensure that only best quality projects are selected for the State Level Congress**
- **Ensure to send the detailed results of the District Level Congress as per the Performa provided for this purpose**
- **District Congresses should be completed with in the given time frame**
- **Results should be sent as soon as possible after the completion of the District Congress**
- **Only one teacher and two students per project can participate officially in the state level congress.**
- **Three copies of the summary of project(in English) and two copies of complete project report are to be brought by each team**

General Guidelines for District Coordinators

- **Select teachers/activists interested in such activities**
- **Register group of children and provide them necessary material**
- **Schools selected from rural and urban areas should be in equal ratio**
- **Ensure that no blood relatives are selected for State Level Congress**
- **Ensure that projects carried out on similar issues by different groups are not copied versions of each other.**
- **Age limits for participation will be 10-17 years**
- **Arrange teachers training with the help of reference materials, kits etc.**
- **Interact with local scientists and manage their interaction with children for improving the quality of projects**
- **Try to involve at least 5000 children or 100 schools in each district**

Screening Criteria for Evaluation

Evaluation: Important Points

Main Aim

To develop taste & interest for Science amongst children

1. **Evaluation not Judgment**
2. Time : Only 10 Mins
3. **Motivation** /Interest/ Confidence
4. **Suggestions**

What to Evaluate ?

1. Subject matter
2. Scientific content
3. Scientific Methodology
4. Not be influenced by gadgetry or models used or oratory skills.
5. TEAM Work

Evaluation

1. Should not be focused on:

- What they do not know

2. But it should be:

- To expose what they know about the subject/ project
- What he learned from the study (scientific aspect)
- Development of Scientific attitude

What to Avoid ?

- Avoid unwarranted criticism.
- Avoid **comparing** their works with those carried out by **senior members or scientists**.
- Avoid being **a source of distraction during presentation**

Evaluator's Duties

- Provide them with **constructive inputs** and **positive feedback**.
- Appreciate and value :
 1. His/Her Efforts,
 2. Innovativeness and
 3. Confidence
- Feed back about their experience

Model Consolidated Evaluation Sheet for District Level

S. No.	Criteria	Maximum Marks		Total
		Written Report	Oral Presentation	
1	Originality of Idea & 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 & Problem-solving attempt	10	10	20
7	Team-work	10	10	20
8	Background Correction	10	10	20
9	Presentation	10	10	20
	Total	⁶³ 100	100	200

EVALUATION SHEET - STATE LEVEL

S. No.	Criteria	Max. Marks	Max. Marks	Total
0.	State Level Evaluation Sheet	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 & Problem-solving attempt	20	20	40
7.	Team-work	05	05	10
8.	Oral Presentation/Written Report (As applicable)	10	10	10
9.	Improvement over the previous level suggested	10	10	10
	Total	100	100	200

Evaluation Criteria for the National Level Screening

Each project would have a total points of 100 each, out of which-

- **50% for Oral presentation.**
- **40% for Written report .**
- **10% for Poster presentation.**

NCSC Common Evaluation Criteria

S. No.	Criteria	Max. Points
A.	Oral Presentation	
1	Originality of Idea & 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 & 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 & 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

Student Gains from Scientific Projects

- **To know the way of getting observations/ samples/ data**
- **Exposure to exploration, analysis of data**
- **Method of science**
- **Learn to make connections with societal problem**
- **Team work**
- **Documentation**

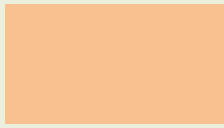
Incentives for participation

- Children (the presentors) who will qualify as outstanding will be handed over a '**Certificate of Merit**'.
- All children irrespective of categories will be handed over participation certificates.

Incentives for Participating in CSC

- ❖ One student from each selected project will participate in **National Level CSC** while the other team member will go to **Rashtriya Kishore Vaigyanik Sannam** of Indian Science Congress
- ❖ Selected projects **mentored by DST, GOI** and given training in various **National Institutes** and **Labs**

Thank You



Thank You