

CALENDAR

STAGE I : Proposal writing, submission and selection

Date	Activities
12 March	Send invitation and TOR to all MSS, HSS and CS.
13 March to 1 April	Schools to form a team to write proposal on the given theme for submission to REC.
2 April	Last date for schools to submit proposal to REC Last date for teachers and students to submit symposium paper
4-10 April	Evaluation of proposal and symposium paper
12 April	Result declaration I - 20 best proposals

STAGE II : School-level project development

Date	Activities
13 April to 2 May	Provide training to selected schools by trainers
10 May	Selected schools to complete the development of prototype
11-20 May	Evaluation team visit the schools to assess the prototype and conduct cognitive test
22 May	Result declaration II - 16 best prototypes

STAGE III : National-level STEM Olympiad

Date	Activities
27 May	16 Schools report to the venue
28 May	Schools prepare their exhibits
29 May	Opening Function, Competition of 16 prototypes
30 May	Exhibition Open to general public Symposium
31 May	Exhibition open to general public Result declaration, Award Function and Closing Ceremony



Organiser

REC in collaboration with Ministry of Education and with technical support from FabLab Bhutan



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National STEM Olympiad 2019

“Artificial Intelligence for Sustainable Farming”

Royal Education Council, Paro

May 29-31, 2019

BACKGROUND OF STEM OLYMPIAD 2019

National STEM Olympiad is a three-day programme, devoted to improve the quality of STEM education. This programme is expected to spark students' interest in STEM related areas and provide recognition for outstanding achievement in STEM education. The STEM Olympiad programme is a rigorous academic interscholastic competitions that consist of team events, individual scholastic works which students and teachers prepare on the given theme. These challenging and motivational events are well balanced between the various science disciplines, mathematics, and technology.

Generating knowledge and understanding through STEM equips people to find solutions to today's emerging challenges and achieve the national goal of sustainable development and greener society. The STEM subjects provide greater scope to mitigate the emerging national and global issues in terms of food security and the wellbeing of people and the world at large. The emerging field in the areas of science and technology is artificial intelligence. Artificial intelligence is used for solving some of the emerging issues across the world. Therefore, the theme for National STEM Olympiad 2019 is based on *“Artificial Intelligence for Sustainable Farming”*.

The event is organised with the following broad objectives:

- Provide a platform for teachers and students to showcase their scholarly works and appreciate the contribution of STEM subjects to solve the contemporary issues.
- Provide opportunities for students to experience hands-on applications through collaboration and discussion.
- Challenge students to come up with innovative and creative ideas to solve real world problems.
- Provide opportunities for participants and guests to experience hands-on activities.
- Instill in learners the positive attitude and values for science and technology.

The National STEM Olympiad 2019 shall consist of the following programmes:

EVENTS

1. School level proposal development and selection

All MSS and HSS shall write a proposals on the development of the prototype based on the given theme and submit it by April 2, 2019 to REC, who will select the 20 best proposals.

The selected school will be provided materials and training on the development of the prototype with the support from FabLab Bhutan before they begin to work independently.

An evaluation team will visit the schools to assess the prototype and administer cognitive test which will determine the selection for the national level STEM Olympiad. Sixteen best schools will be selected by May 22, 2019.

2. National STEM Olympiad

The National STEM Olympiad will be held at Mongar from May 29 to 31, 2019. The event will gather policy makers, professionals from education and other sectors, parents, and local communities, besides the teachers and students who will be exhibiting their prototypes and participating in the symposium. During the event, a wide range of fun related hands-on activities and shows will be arranged to inspire and create awareness

on the STEM education. The REC, therefore, extends invitation to various relevant organizations and agencies to participate at the event with their displays of charts, models, research findings, artefacts, etc. Participation of different organizations and agencies at the event is without fees or charges.

3. Exhibits

The science exhibition is one of the ways in which students from different age groups work together to create a science projects through which they can enhance skills and knowledge like collaboration, critical thinking, problem solving, creativity, etc that related to both science and daily life. Students also get the opportunity to practically test the concepts learned in science classroom through innovative and engaging experience.

The 16 selected schools will compete at the national level from May 29 to 31, 2019.

The exhibits are expected to:

- generate excitement about science and its possibilities
- help children to relate and apply the scientific concepts to their day to day lives
- apply STEM concepts to visualize and solve problems pertaining to everyday life
- explore the possibility of using Artificial intelligence to address social and environmental issues
- To understand the importance of science for the wellbeing of the society and the environment

4. Symposium

It is a platform created for teachers and students to discuss and express their opinion on the theme “*Artificial Intelligence for Gross National Happiness*” before a larger audiences. During the symposium, teachers and students will deliberate their understanding or findings with the audience through presentation and question-answer sessions. The symposium is expected to give a platform for school teachers and educators to inform the audience about a given topic that will enable the listeners to arrive at a decision, values, or a judgment.



5. Fun Activities

Multiple fun activities will be arranged during the national event for visitors, particularly students, to experience scientific concepts through fun ways. The Fun Corner will provide opportunities to engage in 3D show (scientific documentary), hands-on experiments, mathematical puzzles, optical illusions, and awareness programmes by relevant organizations. Participants get to observe and reflect, hypothesize and try out the science, and evaluate and make explanation of how science works.

The fun activities are expected to:

- Stimulate visitors to engage in hands-on fun activities
- Develop understanding of how science works
- make participants to realise that doing science is fun and recreational.

AWARDS

1. Certificate of Commendations
2. Certificate of Recognitions
3. Certificate of Championships

PRIZES

1. First: Nu. 75,000/-
2. Second: Nu. 60,000/-
3. Third: Nu. 45,000/-
4. Consolation Prizes: Nu. 10,000/- each for 13 schools.