



# NATIONAL SCIENCE DAY

## 2024



U R Rao Satellite Centre  
Indian Space Research Organisation  
Bengaluru - 560017

## Sir CV Raman

Sir Chandrasekhara Venkata Raman, born in Tiruchirappalli in Tamil Nadu on 7<sup>th</sup> November 1888, was a renowned Indian physicist, who was awarded the Nobel Prize for Physics in 1930 for his ground-breaking work in Physics. His father Chandrasekara Iyer, was a lecturer in Mathematics and Physics. His mother was Parvati Ammal. Raman had a good and congenial environment from childhood to pursue intellectual activities. He passed his matriculation at the age of 11 and graduated from the Presidency College, Chennai with gold medals in Physics and English. He also passed the I.C.S. examination with flying colors.

In 1907, while still in his teens, he was posted as Assistant Accountant General in Calcutta. However, he pursued his research in physics at the Indian Association for the Cultivation of Science (IACS). He studied the diffraction of light and his thesis on the subject was published in 1906. In 1907, he completed his Master's degree in Physics, at the age of 19. Raman was awarded the Doctorate degree in 1921 by Kolkata University. He studied the physics of musical instruments like violin, mridangam and tabla. In 1924, he became a Fellow of the Royal Society. In 1925, he went to Russia to receive an honor from the Russian Academy of Sciences. In 1926, he launched the Indian Journal of Physics.

Once during his return from Europe, Raman was amazed by the blue colour of the sea. He did some experiments and during this voyage, Raman sent two papers to the journal Nature stating that the colour of the sea was due to light scattering by the water molecules - a phenomenon he called molecular diffraction. Raman showed that the blue colour of the sea is due to molecular scattering and not due to reflection of the colour of the sky. Back home in India, Raman and his students studied the frequency shift of scattered light. The real discovery of the "Raman Effect" took place on the 28<sup>th</sup> of February 1928 when he pointed a direct vision spectroscope on the scattered track and observed that the scattered light contained not only the incident colour but at least one other which was a clear demonstration of change in wavelength due to scattering. His research on "Raman Effect" was awarded the Nobel Prize by the Swedish Academy of Sciences in 1930. The Government of India honored him with Bharat Ratna award in 1954. He was also awarded Lenin Peace Prize in 1958. He believed that his life was reserved for science.

C V Raman dedicated his entire life for science and he passed away in 1970. His legacy lives on with many notable students which he guided and inspired including Vikram Sarabhai who eventually envisioned the India's space research programme.

**Sunil Alias Balwantrao**

Chairman, Organizing Committee, NSD-2024  
Deputy Director, PDMSA  
U R Rao Satellite Centre, Vimanapura P.O, Bangalore-560017  
Email: [nsd@ursc.gov.in](mailto:nsd@ursc.gov.in)

29-Jan-2024

**Sub:** Celebration of National Science Day (NSD) – 2024

**Dear Sir / Madam,**

Government of India has marked 28<sup>th</sup> February of every year to celebrate the National Science Day to commemorate the discovery of the ‘Raman Effect’ by the Nobel Laureate and outstanding Indian Physicist Sir. C.V. Raman in the year 1928. This day is celebrated across India with great passion and enthusiasm to instill the spirit of scientific reasoning and inquiry in young minds.

U R Rao Satellite Centre (URSC), a pioneering establishment under Indian Space Research Organization (ISRO) for leading research and development of Satellite technology, is organizing multiple events on science day. I would like to invite students and teachers to participate in National Science Day organized at URSC on 17<sup>th</sup>, 24<sup>th</sup> and 28<sup>th</sup> of Feb,2024. The details are provided in the brochure. There are limited number of seats for all the events and prior registration is mandatory.

On behalf of the NSD-2024 organizing committee, I once again extend my warm welcome to the students and teachers to come and participate in the National Science Day program at URSC.



# **INVITATION**

Valedictory Function of

## **“National Science Day”**

**February 28<sup>th</sup>, 2024**

**Time: 09:30Hrs**

**U R Rao Satellite Centre  
Bengaluru**



## National Science Day 2024, UR Rao Satellite Centre - Event Matrix (Offline Only)

SL.No.	Event	Class/Std/Category			Date, Time & Venue	Convener's Details
		A: I – IV	B: V- VII	C: VIII-X		
1	Essay Writing Competition (Max 180 students)		Max. 3 students per school (one in each language category: English , Kannada and Hindi)	Max. 3 students per school (one in each language category: English , Kannada and Hindi)	17-02-2024 09:30 am to 11:30 am Satish Dhawan Auditorium 1st floor main building, URSC	PRASHANTH P S
2	Test of Scientific Temper (Max 180 students)			3 students per school (Language: English only)	17-02-2024 02:00 pm to 04:00 pm Satish Dhawan Auditorium 1st floor main building, URSC	ANKUR SHARMA
3	Painting Competition (Max 100 students)	2 students per school	2 students per school		17-02-2024 09:30 am to 11:30 am Parking Bay (Canteen Basement Area), URSC	BHANU BHASIN
4	Extempore Science Elocution (3-4 mins) (Max 25 students per category)		1 student per school	1 student per school	17-02-2024 Cat B: 09:30 am to 11:30 am Cat C: 02:00 pm to 04:00 pm MOCC conference hall 2nd floor main building, URSC	SHYAMA NARENDRANATH
5	Science in Action (Max 40 students per category)		1 student per school	1 student per school	24-02-2024 02:00 pm to 04:00 pm Pathway around the Lawn Main building entrance, URSC	SUNIL BALANWANTRAO
6	Teachers' Event (Max 15 teachers)	1 teacher per school			24-02-2024 02:00 pm to 04:00 pm MOCC Conference Hall 2nd floor main building, URSC	RAJENDRA A
7	Science Quiz (Max 180 students)			1 team of 3 students per school	24-02-2024 9:30 am to 12:00 noon Satish Dhawan Auditorium 1st floor main building, URSC	SRINIDHI M S

# Event # 1

## Essay Writing Competition- Hindi/ Kannada/ English

**Category-B:** V to VII Std.; **Category-C:** VIII to X Std.

(one student per language in each category; total 06 students per school)

**Date** : Saturday, 17<sup>th</sup> Feb, 2024

**Time** : 09:30 to 11:30 Hrs.

(Reporting time at URSC Reception by 8:30 Hrs)

**Venue:** Satish Dhawan Auditorium, 1<sup>st</sup> Floor, Main Building, URSC

Language	Topic for Category B (V to VII Std)	Topic for Category C (VIII to X Std)
English	Topic will be given prior to the Event.	Topic will be given prior to the Event.
Hindi		
Kannada		

### **Description:**

This event aims at assessing the writing skills as well as testing their understanding of the subject. It is an individual event. Students are expected to write on the given topic in one of the languages (Hindi/Kannada/English) registered for. Selected essays will be awarded based on the content, coherence and presentation styles. Importance will be given for the novelty of the ideas presented.

### **Note:**

1. Length of the essay to be restricted to maximum 3 to 4 A4 size sheets. Each page should be clearly numbered.
2. Sheets will be supplied. Students should bring pens/pencils and writing pads.
3. Students should legibly write their name, class and school name at the top of the first page.
4. Students must not use any reference materials/books while writing the essay.

### **Contact Person for clarifications:**

**Convener** : PRASHANTH P S

**E-mail** : [nsd-essay@ursc.gov.in](mailto:nsd-essay@ursc.gov.in)

## Event #2

### Test of Scientific Temper (What, Why & How of Things):

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**Category-C:** VIII to X Std.

(Maximum 3 students per School)

**Date** : Saturday, 17<sup>th</sup> Feb, 2024

**Time** : 14:00 to 16:00 Hrs.

(Reporting time at URSC Reception by 13:00 Hrs)

**Venue:** Satish Dhawan Auditorium, 1<sup>st</sup> Floor, Main Building, URSC

#### **Description:**

This competition is mainly to test the approach and reasoning ability of students to happenings related to normal day-to-day activities and observations of things around them. Some of those inquisitive questions could be as follows:

- How a human can fly around earth?
- Why do you feel breathless while running?
- Why do we see only one face of the moon always?

The students are expected to answer based on scientific principles/concepts. The event ***Test of Scientific Temper*** tries to explore scientific awareness among student community.

The solution should cover the understanding of problem, equipment required, principle of operations, logic and reasoning for choosing solution (whatever applicable to problem). For example, when asked, "how a human can fly around earth?", in proposed solution(s) candidate should think about environment in which human need to fly, the equipment required to fly around.

#### **Note:**

1. This is an individual event.
2. Medium of test will be English.
3. Sheets will be supplied. Students should bring pens/pencils and writing pads.
4. Solutions need to be brief and focused. Original ideas, approach and answers will be appreciated.
5. While evaluating an answer, emphasis will be given for the understanding of basic scientific principles and approach to solve problem rather than solution of the problem.

#### **Contact person for clarifications:**

Convener : ANKUR SHARMA

E-mail : [nsd-tst@ursc.gov.in](mailto:nsd-tst@ursc.gov.in)



## Event #3

### Spot Painting Competition

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**Category-A:** I to IV Std., **Category-B:** V to VII Std.

(Two students per category per school; Max 4 students per school)

**Date** : Saturday, 17<sup>th</sup> Feb, 2024

**Time** : 09:30 to 11:30 Hrs.

(Reporting time at URSC Reception by 8:30 Hrs)

**Venue:** Parking Bay (Canteen Basement Area), URSC

#### **Instructions:**

- Students shall bring necessary drawing and painting materials (Pencils, Colors, Crayons, Brushes etc.)
- Drawing sheet of size 450 mm x 350 mm will be supplied by the organizers.
- The topics for spot painting are as follows:

**Category A** (I to IV Std): Topic will be given prior to the Event.

**Category B** (V to VII Std): Topic will be given prior to the Event.

#### **Contact person for clarifications:**

Convener : BHANU BHASIN

E-mail : [nsd-pc@ursc.gov.in](mailto:nsd-pc@ursc.gov.in)

## Event # 4

### Extempore Science Elocution

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**Category B:** V to VII std; **Category C:** VIII to X std

(One student per category per school; Max 2 students per school)

**Date** : Saturday, 17<sup>th</sup> Feb, 2024

**Time** : 09:30 to 11:30 Hrs. for Category B (Reporting time at URSC Reception by 8:30 Hrs)

14:00 to 16:00 Hrs for Category C (Reporting time at URSC Reception by 13:00 Hrs)

**Venue:** MOCC Conference Hall, 2<sup>nd</sup> Floor, Main Building, URSC

**Description:**

This event aims at improving students' oratory skills as well as testing their knowledge about general science. It is an individual event. Students are expected to speak for 3 (three) minutes on a topic picked 10 minutes earlier. All topics will be related to textbook science and well-known scientists. Best talk will be selected for the award of prizes based on the content, coherence and oratory skill.

**Note:**

1. Students must not bring any reference materials/book.
2. Students must not use any presentation material while presenting their topic. This event is entirely oratorical in nature.
3. Change of assigned topic is not allowed.

**Contact person for clarifications:**

Convener : SHYAMA NARENDRANATH

E-mail : [nsd-ext@ursc.gov.in](mailto:nsd-ext@ursc.gov.in)

## **Event #5**

### **Science in Action**

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**Category B:** V to VII std; **Category C:** VIII to X std

(One student per category per school; Max 2 students per school)

**Date** : Saturday, 24<sup>th</sup> Feb, 2024

**Time** : 14:00 to 16:00 Hrs

(Reporting time at URSC Reception by 13:00 Hrs)

**Venue:** Pathway Around the Lawn, Main Building Entrance, URSC

**Note:**

- 'Science in Action' is a display and demonstration of scientific experiments for the participants to test the understanding of basic principles in science.
- In this event some Science experiments will be demonstrated and the students are asked to write answers to a small quiz based on the experiments.
- Not Participation in the competition is limited to 40 students per category.
- The medium of instructions will be only in English.

**Contact person for clarifications, if any:**

Convener: SUNIL BALWANTRAO

E-mail: nsd-sa@ursc.gov.in



## Event # 6

### Teachers' Event

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(One teacher per school)

**Date : Saturday, 24<sup>th</sup> Feb, 2024**

**Time : 14:00 to 16:00 Hrs**

**(Reporting time at URSC Reception by 13:00 Hrs)**

**Venue: MOCC Conference Hall, URSC Main Building**

**Topic: Science for a Sustainable Future**

**Description:** Science, Technology, and Innovation (STI) evolve continuously with improving knowledge. Being interdependent, all three needs to evolve in unison in order to achieve the best for the humanity. This year's main topic for the event is "**Science for a Sustainable Future**". Following are the Sub-topics for the event.

1. Climate Change
2. Resource Depletion
3. Environment Degradation
4. Sustainable Development.

It is appropriate to bring in the thoughts of teachers to utilize them for implementation in Indian education system.

The focus of the presentation has to be on new ideas and concepts of Science for a Sustainable Future to evolve future-ready generation. All participants pre-selected by the head of the school (one teacher per school) are requested to send their presentation. Selected participants will be allowed to present for 5 minutes with an additional 2 minutes for discussion and Q&A.

**Note:**

1. This is an **individual** event. Medium of presentation will be English.
2. The slides shall be in PDF format (Audio visuals if any, separately to be attached).
3. **PDF presentations (max. file size 20 MB) can be sent to the below mentioned E-mail id by 12<sup>th</sup> Feb from the event along with teacher's full name, school address & their e-mail ID.**
4. While evaluating the abstracts, emphasis will be given for innovative ideas, motivating skills and content.
5. **Selected teachers will be intimated via e-mail by 16<sup>th</sup> Feb,2024.**
6. **Selected teachers have to make presentations using presentation material submitted during registration.**
7. Presentation skills, content, time management and responses to the questions will be the selection criteria for final awards.

**Contact person for clarifications**

Convener : RAJENDRA A

E-mail : nsd-te@ursc.gov.in

# Event # 7

## Science Quiz

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**Category-C:** VIII to X Std.  
(3 students per team and 1 Team per school)

**Date** : Saturday, 24<sup>th</sup> Feb, 2024

**Time** : 09:30 to 11:30 Hrs.

(Reporting time at URSC Reception by 8:30 Hrs)

**Venue:** Satish Dhawan Auditorium, 1<sup>st</sup> Floor, Main Building, URSC

**Description:**

- This event aims at inculcating interest in science and technology amongst students and also assessing the knowledge about basic science and latest technologies.
- The quiz will be conducted in two phases. The first phase will be the preliminary round. This will be in the form of written test.
- The top six teams of the preliminary round will be shortlisted for the final round. The final round will be oral quiz form.
- The topics covered will be from various facets of science.

**Contact Person for clarifications:**

Convener : SRINIDHI M S  
E-mail : [nsd-sq@ursc.gov.in](mailto:nsd-sq@ursc.gov.in)

# General Instructions

1. All students and teachers coming to URSC shall carry their school Identity Card.
2. All the students must be accompanied by their respective teachers. There is no entry for the parents.
3. Participants have to be present at least 1 hour prior to start of the event.
4. The registrations for all the events shall be made by the school through online mode only on NSD website. <https://www.ursc.gov.in/science-promotion/nsd-2024>
5. Last date for registration is 12<sup>th</sup> February. Spot registrations are strictly not allowed. After the registration the students will get an acknowledgement email and registration number which need to be shown at the time of entry.
6. Names of prize winners will be announced by 26<sup>th</sup> February on the NSD website.
7. Prizes will be distributed during the NSD valedictory function on 28<sup>th</sup> February, 2024 starting at 09:30 Hours. All the prize winners are requested to attend the Valedictory function.
8. All students participating in the competitions will be given "Participation Certificate" on the day of the event.
9. Lunch will be served to the participating students / teachers on 17<sup>th</sup>, 24<sup>th</sup> & 28<sup>th</sup> Feb 2024 between 12:30 to 13:30 PM.
10. School have to make their own transport arrangements for the teachers and the participants. There is no provision for stay/accommodation for participating students and teachers.
11. Mobile phones, CDs, pen drives, cameras, bags or any other electronic items are not permitted inside the URSC campus as per rules. Participants / visitors are requested not to bring any such item. In case such items are brought, own arrangements need to be made for safe keeping of the same outside the campus.

Important Dates:	
Registration Lines Open on	1 <sup>st</sup> February, 2024
Last Date for Registration	12 <sup>th</sup> February, 2024
Event Dates	17 <sup>th</sup> and 24 <sup>th</sup> February, 2024
Announcement of Winners	26 <sup>th</sup> February, 2024
Valedictory Function	28 <sup>th</sup> February, 2024

Note: Any queries for NSD-2024 events can be emailed to [nsd@ursc.gov.in](mailto:nsd@ursc.gov.in) or call 080-25082906(Jyoti Kumari) or 080-61458102(Brinda) during 9:00hrs to 16:00hrs. visit <https://www.ursc.gov.in/science-promotion/nsd-2024/index.jsp>



# URSC ROUTE MAP





