

ZOOLOGY BUZZ

DEPARTMENT OF ZOOLOGY

St. Bede's College Shimla-2

Vol. 5

2022

ZOOLOGY HIGHLIGHTS

THE WORLD OF VACCINE



Three year into the incessant outbreak of Novel Corona Virus, we are still highly presumptuous about the disease and its consequences. Corona virus (COVID-19), which is an infectious disease caused by the SARS-CoV-2 virus originated in Wuhan, China in December 2019 and soared swiftly across China and spread worldwide as of 25th May 2020.

New rules of isolation, distancing and sanitization were announced and as a part of same struggle, COVID-19 Vaccines were introduced to reduce risk and save lives.

WHAT IS A VACCINE?

A vaccine is a biological preparation that provides active immunity to a particular infectious disease. It contains an agent that resembles a disease-causing micro-organism and is often made from weakened or killed forms of the microbe, its toxins, or one of its proteins. The agent stimulates the body's immune system to recognize the agent as a threat, to destroy any of the microorganisms associated with that agent that it may encounter in the future. The administration of vaccines is called vaccination.

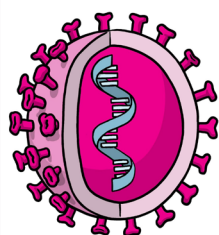


The first ever vaccine was developed by Edward Jenner, for smallpox in 1796. After that several scientists worked to develop vaccines like DTP Vaccine, Measles, Mumps and Rubella (MMR) vaccines. When polio vaccines were licensed in 1955, Jonas Salk, its inventor, became an overnight hero.

The COVID-19 vaccine is intended to provide acquired immunity against severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), the virus that is responsible to cause COVID-19. A single dose of the COVID-19 vaccine made by either Pfizer or AstraZeneca cuts a person's risk of transmitting the SARS-CoV-2 to their closest contacts by as much as half, according to an analysis of more than 365,000 households in the united kingdom. Although the vaccines have been shown to reduce COVID-19 symptoms and serious illness, their ability to prevent corona virus transmission has been unclear.

COVAXIN® IS INDIA'S INDIGENOUS COVID-19 VACCINE BY BHARAT BIOTECH, DEVELOPED IN COLLABORATION WITH THE INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR) - NATIONAL INSTITUTE OF VIROLOGY (NIV).

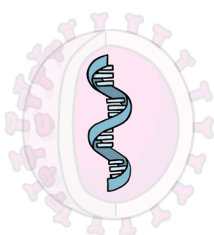
There are three main approaches to making a vaccine:



Using a whole virus or bacterium



Parts that trigger the immune system



Just the genetic material

There are three main approaches to designing a vaccine. Their differences lie in whether they use a whole virus or bacterium; just the parts of the germ that triggers the immune system; or just the genetic material that provides the instructions for making specific proteins and not the whole virus.

Inactivated vaccines do not replicate and are therefore unlikely to revert and cause pathological effects. They contain dead virus, incapable of infecting people but still able to instruct the immune system to mount a defensive reaction against an infection.

-Shruti Chauhan (B.Sc. III Year)

INSIDE THE NEWSLETTER

- Zoology Highlights
- Teacher's Corner
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- Articles, Anecdotes, Art Gallery
- Departmental Activities
- Students' Achievements

EDITOR'S NOTE:

Fascinating as it seems, Zoology is a field of life sciences, devoted to experimental and comparative study of animals. It presents a common forum for all scientists who take an explicitly organism oriented and integrative approach to the study of animal form, function, development and evolution.

Studying Zoology can provide self employment opportunities and you can become an entrepreneur. Economic Zoology is a branch of science that deals with economically useful animals. It involves the study of application of animals for human welfare.

The need of Zoology is not just to improve our economic condition but also to provide food security and provide employment opportunities. Based on the economic importance, animals can be categorized as:

- Animals for food and food products
- Economically beneficial animals
- Animals of aesthetic importance
- Animals for scientific research

Zoology offers immense scope to a candidate who has done master's degree in the subject. They can work as Animal Behaviourist, Conservationist, Wildlife Biologist, Zoo Curator, Wildlife Educator, Zoology faculty, Forensic experts, lab technicians, and Veterinarians.

As the Editor of 5th edition of our own Newsletter Zoology Buzz, it's a pleasure to invite you all dear readers inside the magnificent World of Science and Zoology. As young zoologists, we should all keep in mind that Zoology is the culture that we celebrate, subject we honour with passion and path that we follow meticulously. Happy reading everyone!!

- Shruti Chauhan (B.Sc. III Year)

TEACHER'S ACHIEVEMENTS:

➤ Dr. Shweta Thakur

Assistant Professor, Department of Zoology

Research Publications

- Brari J, **Thakur, S.** Bioactivity of ionic liquid against two major Coleopteran stored grain insect pests. International Journal of Pharmaceutical & Biological Archives 2021; 12(4): 163-169. **UGC CARE LIST**

Conferences/ Webinars attended

- Webinar on Azadi ka Amrut Mahotsav "Science and Technology: India @75" organized by St. Bede's College, Shimla in collaboration with Indian Science Congress Association (ISCA) - Shimla Chapter (September 23, 2021).
- Multi-disciplinary International Conference on Indian culture Science and Traditions organized by HFRI Shimla. (13-14 November 2021)

Workshop attended

- Online workshop on NAAC, from March 28th – April 2nd, 2022 organised by Jharkhand Government MSME Tool Room, Ranchi

Faculty Development Programme

- Faculty Development Program on "Design and Development of Moocs" at St. Bede's College (1-5 January 2022).
- Faculty Development Program "Revamping Emotional and Professional Paradigms for an Inclusive Approach to Holistic Education" organized by Department of Commerce and Management under the aegis of IQAC, St. Bede's College Shimla. (March 3-7, 2022).

Faculty Induction Programme

- Induction Programme for faculties of university/colleges/ Institutes of higher Education by Teaching Learning Centre, Ramanujan College, University of Delhi (20 December 2021-19 January 2022)

➤ Dr. Jyotika Brari

Assistant Professor Department of Zoology

Research Publications

- **Brari J, Thakur, S.** Bioactivity of ionic liquid against two major Coleopteran stored grain insect pests. International Journal of Pharmaceutical & Biological Archives 2021; 12(4): 163-169. **UGC CARE LIST**

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- Multi-disciplinary International Conference on Indian culture Science and Traditions organized by HFRI Shimla. (13-14 November 2021)

Workshop attended

- Multi-disciplinary International Workshop on Indian culture Science and Traditions organized by HFRI Shimla. (5-14 November 2021)

Faculty Development Programme

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SUNSETS

*One fine evening I fell in love with
The Sunset
Because there's nothing about it
One can forget
The warm colours fill your eyes with
love
And at the same time it is peaceful as
Dove
I wonder how God created this
beautiful mess
Which even in severe times helps me de-
stress
Apparently sunsets are so common that
their beauty is often forgotten
So take out some time from all your
duties
And learn how to admire these little
beauties...*

- Awantika B.Sc. II Year

MOTI KI KHETI

In this new age of ever growing populations the government understands the need of socio-economic upliftment by creating various skill-based entrepreneur opportunities even in the remote areas. The same agenda is being achieved with the help of CSIR Institute of Himalayan Bio-resource Technology, Palampur. Who have initiated cultivation of pearl integrated with aquaculture in Himachal Pradesh. Pearl Cultivation utilizes fresh water mussels. A small part of mantle tissue is implanted or bead of shell is added so as to provide a nucleus for the pearl. The mussels secrete layers of aragonite and conchiolin that also make up its shell, which creates a material called nacre. Nacre is also known as 'mother-of-pearl'. In a span of months to years depending upon the species used; pearls are harvested. Pearl cultivation will expand the farming horizon of the state where a big portion of the population still depends on farming.

- Sarah Gupta (B.Sc. III Year)



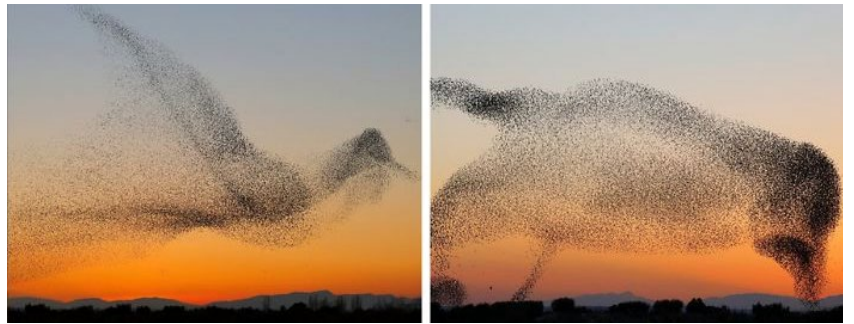
MAGIC MUSHROOMS



Psilocybin, an indole-alkylamine and tryptamine, is the main active ingredient of the group of fungi known as "magic mushrooms." Psilocybin is a prodrug, a substance that is metabolized after administration to become pharmacologically active as psilocin. The most potent are members of the genus *Psilocybe*, such as *P. azurescens*, *P. semilanceata*, and *P. cyanescens*, but psilocybin has also been isolated from about a dozen other genera. Psilocybin works by activating serotonin receptors, most often in the prefrontal cortex. This part of the brain affects mood, cognition, and perception. Although it has a potential to treat a range of psychiatric and behavioral disorders, it's yet to receive FDA approval for anything, as the effects can backfire on health of individual.

- Shruti Chauhan (B.Sc. III Year)

STARLING MURMURATION



Starlings are small- to medium-size birds that have a short tail and a pointed head with glossy black feathers streaked with hints of purple and green. In large numbers, starlings can create a "murmuration" when huge groups of these birds gather together, moving in one large mass across the sky. They don't simply fly in a flock. They twist and turn into all different shapes during this sky show.

Maybe the best comparison for this "celestial strangeness" is a school of fish moving as one in the ocean to avoid a predator. The fish dart rapidly from one direction to the next to distract and tire their predators. A starling murmuration works in much the same way. Starlings produce a synchronized cloud of movement over their chosen roosting site. A roost is where they will rest as a group for the night, which is why murmurations occur most often at sundown. Another hypothesis centres on body heat. A murmuration can attract other starlings in the area to one central roosting site. Especially in the colder months, more starlings congregated together to create a warmer roosting spot. They gather over their roosting site, and perform their wheeling stunts before they roost for the night.

-Shreya Dubey (B.Sc. III Year)

HER TRAVEL JOURNAL

A VISIT TO SARISKA TIGER RESERVE

It was November when I went off on a mini vacation to Alwar, Rajasthan with my whole family. I was mildly surprised that a wonderful place in such close proximity to both Delhi & Jaipur was bereft of tourists!

The jungles around Sariska seemed inviting. One can spot a variety of wildlife on both sides of the jungle road in Sariska. Since it was winter when I visited, the afternoons were the best time for the safari.

HISTORY OF SARISKA

Set in the majestic Aravalli Mountains, Sariska is believed to be the place from the Hindu epic Mahabharata where the Pandavas found sanctuary during their last year of exile. There is also a shrine dedicated to Hanuman at Pandupol (inside the core zone of the park), which literally translates to 'gateway of the Pandavas' in Sanskrit, which is thronged by pilgrims from nearby places on Tuesdays and Saturdays.

Among other important places located within the core of the reserve is Kankwari Fort. It was built by **Maharaja Jai Singh II** in the 17th century and has recently reopened to visitors. I was lucky to have even reached Kankwari Fort, it is sure in a remote location and permits are difficult to procure. Kankwari Fort is the place where Mughal emperor Aurangzeb had imprisoned his elder brother Dara Shikoh.

Sariska Tiger Reserve

Initially, Sariska was the private hunting ground of the Rajas of Alwar. In 1955, hunting was banned in Sariska. After that, Sariska was notified as India's 11th National Park in 1978-79.

In 2005, it notoriously became the first tiger reserve in the country to lose its entire tiger population as a consequence of killing and poaching.

In the present day after translocation of big cats from Ranthambhore, a lot of conservation initiatives and village relocations, Sariska is fast becoming a popular Wildlife Safari destination and has 14 tigers according to the last count in 2017.

The beautiful jungles of Sariska are home to not just wildlife; but also ruins, temples and unforgettable tales of history and mythology. It is highly recommended to roam these jungles with a local guide, to know more about the birds, fauna and flora.

-Aditi (B.Sc. II Year)

ART GALLERY 2021-22 (Artwork/Photography)



Sarah Gupta



Shreya Dubey



Sanjana Verma



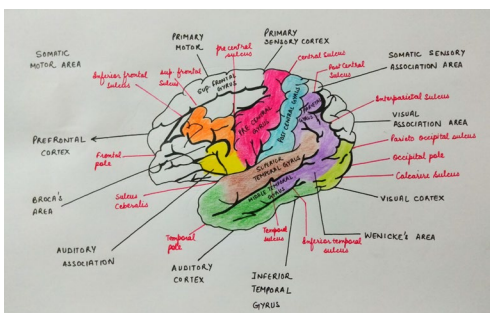
Shruti Chauhan



Sarah Gupta



Shruti Chauhan



(B.Sc. III Year)



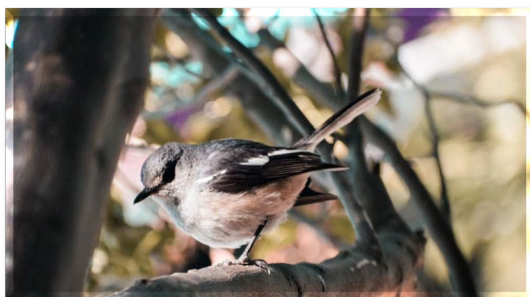
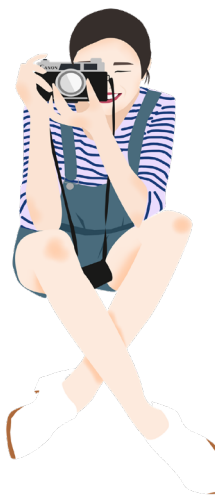
Sanjana Verma
B.Sc. III Year



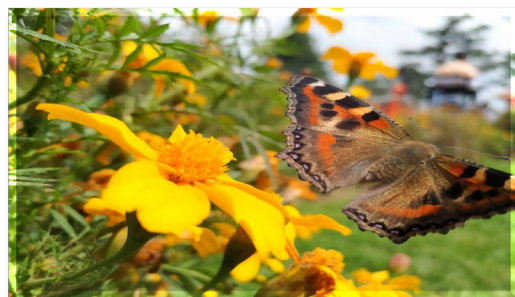
Anchal Daryal
B.Sc. III Year



Muskan Sharma
B.Sc. II Year



Isha Thakur
B.Sc. II Year



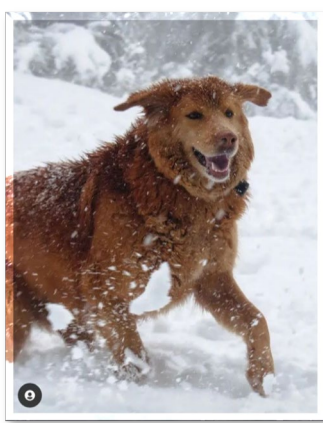
Shreya Dubey
B.Sc. III Year



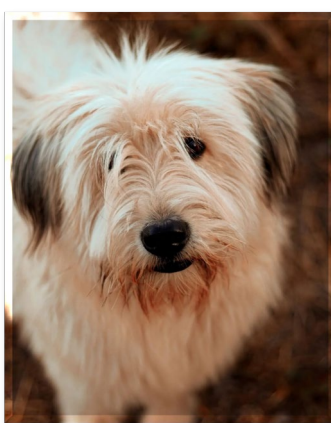
Ridhima
B.A. I Year (Wildlife Photography Contest)



Ridhima
B.A. I Year



Manisha Rawat
B.Sc. II Year



Aditi Sharma
B.Sc. III Year



Era Chauhan
B.Sc. II Year

DEPARTMENTAL ACCOMPLISHMENTS

WORLD ANIMAL WELFARE DAY

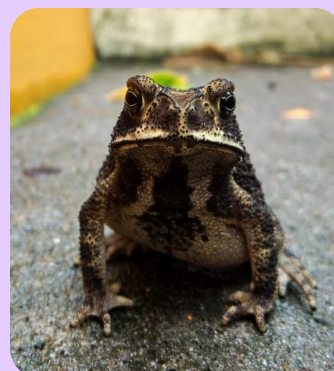
OCTOBER 4th, 2021: Department of Zoology, St. Bede's College Shimla organized two Inter-class activities for the students of Zoology Department. Animal Photography was the first activity in which winners were Mohini Vekta, B.Sc. (Med) 1st year, Sarah Gupta, B.Sc. (Med) 3rd year, and Shreya Dubey, B.Sc. (Med) 3rd year on first three positions respectively.

The Inter-class Quiz competition was the second activity in which five teams namely Panthers, Lions, Tigers, Cheetahs, and Jaguars were formed of three students each. Team Lions (Aditi, Avantika, and Manisha from B.Sc 2nd Year) was 1st, followed by team Jaguars (Premlata, Neha, and Payal from B.Sc 3rd Year) on 2nd position, and team Panthers (Jasmine 2nd Year, Sadhna and Diya from 1st Year) on 3rd position.

Animal Photography by: Mohini Vekta 1st year (left)
Shreya Dubey 3rd year (right)



TEAMS	I	II	III	TOTAL
Panthers	0+10 +10	0+0+5 20+5+5+25	5	20+25+5 50
Lions	0+0 +10	10+3+10 20+5+10+30	10+10	20+30 50
Tigers	0+10 +10	0+0+5 20+10+5+20	10	20+20 40
Jaguars	0+10 +10	5+0+10 20+10+5+30	10	20+30 50
Cheetahs	0+10 +10	5+10 20	15	20+15 35



WORLD FISHERIES DAY

November 20th, 2021: Departmental Club of Zoology, **ZOO QUEST**, commemorated World Fisheries Day by holding three mass awareness programmes.

On November 20th, 2021 the students from B.Sc. Zoology II and III year held a rally on the theme: "The Importance of Shimla's Rivers and Water Reservoirs and the Sustainable Development of the Fish Industry".

In the second activity the importance and the conservation of Shimla's river streams, namely **Ashwani Khad Solan**, **Pabbar River Rohru**, and the **Tattapani** water reservoir was discussed. The students were also informed about the Himalayan freshwater trout and carp. People showed curiosity on the unspoken benefits and issues of fish industry.

The third & final activity was an online awareness campaign in the form of a video representation. It was uploaded on Zoology Department YouTube channel "**Everybody's Zooing it**" on November 21st, 2021.

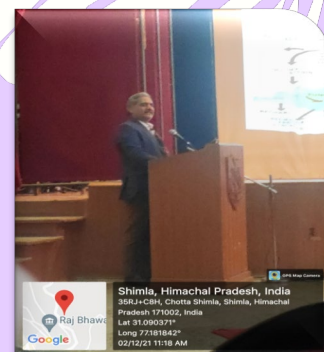
The video is available by the name: **WORLD FISHERIES DAY-2021**.

The link for the video is <https://youtu.be/6MNU3jv7FUc>



NATIONAL POLLUTION PREVENTION DAY

December 2nd, 2021: National Pollution Prevention Day was commemorated by the Department of Zoology in collaboration with the NCC Unit at St. Bede's College, Shimla, on December 2, 2021. Dr. Pawan Rana (Himalayan Forest Research Institute Scientist - E), spoke on this occasion on the topic '**Insecticide Pollution**', this was followed by a presentation given by the Zoology students. Cpt. Gati Singh recited a self composed poem. The NCC cadets presented a Nukkad Natak on the relevant theme.



ROLE-PLAY ON DARWINISM

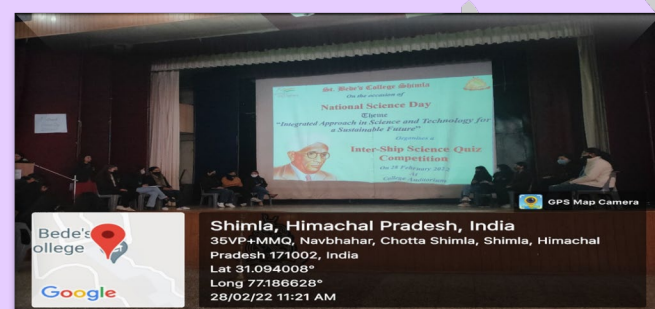
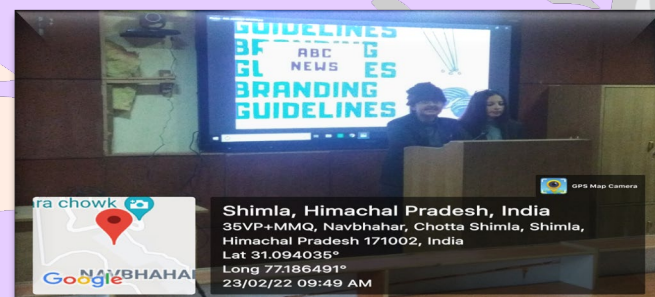
February 23rd, 2022: Zoology students of B.Sc. 2nd year performed a role-play on Darwin about THEORIES OF EVOLUTION. Darwinism and Neo-Darwinism were well-explained in a unique, innovative, and straightforward manner. The event highlighted the importance of creativity in changing young minds. The entire performance was videotaped and uploaded on YouTube. The link of the video is

<https://www.youtube.com/watch?v=Hz7q&dU8aFo>



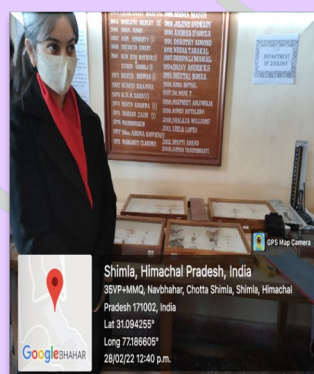
NATIONAL SCIENCE DAY

February 28th, 2022: The Science Department held an interdisciplinary activity to commemorate the National Science Day on February 28th, 2022. The theme for the Science Day was "**Integrated Approach in Science and Technology for a Sustainable Future**". Four teams of students from science and technology competed in an Inter-SHIP Science Quiz competition. Aditi from B.Sc. II Year and Shruti Chauhan, B.Sc. III Year bagged the 1st and 2nd positions respectively. The second event was a science exhibition in which students demonstrated various models and equipments.

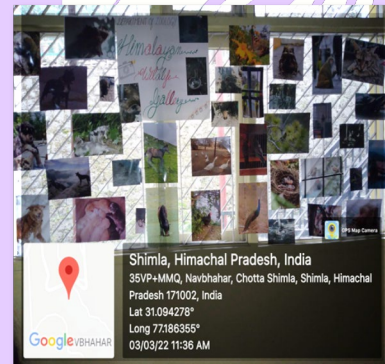
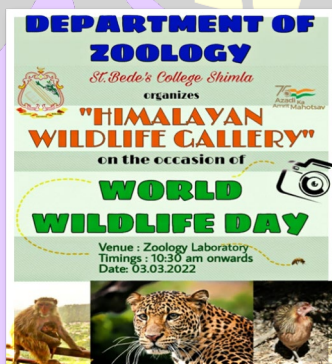


WORLD WILDLIFE DAY

March 3rd, 2022: Department of Zoology commemorated World Wildlife Day by organising a Wildlife Photography competition and hosting a Himalayan Wildlife Gallery on March 3, 2022 to emphasize the importance of biodiversity and saving endangered species. Ridhima of B.A. 1st year and Sanjana Verma of B.Sc. 3rd year shared the first position and Manisha Rawat of B.Sc. 2nd year and Isha Thakur of B.Sc. 2nd year stood second and third respectively.



THE HIMALAYAN WILDLIFE GALLERY



BEST PRACTICE OF THE DEPARTMENT

The Zoology Department of St. Bede's College, Shimla, in collaboration with the NCC Unit, proposes to attract volunteer blood donors to a common platform through an innovative concept in which a donor data base for IGMCS Shimla would be created where students would donate blood providing a humanitarian service to community.

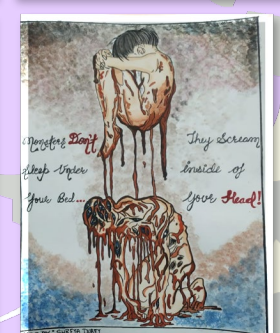
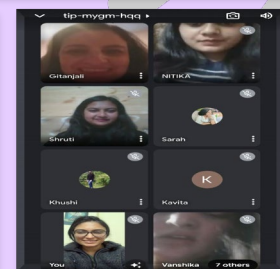
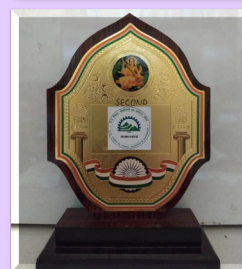


STUDENTS' ACHIEVEMENTS



THIRD YEAR

1. **Shruti Chauhan:** Secured 2nd position in a Quiz competition organized by Geography Dept. on World Ozone Day, participated in E-poster making and online Article Writing organized by the Environment Cell on "Impact Of Increasing Population On Ecosystem And Humanity" secured 1st position in article, secured 1st position in an Inter-ship Skit competition on "Humare Swatantrata Senani" on 1st December 2021, presented a presentation on Career Counselling on a webinar for GSSS Portmore school, organized by Community Outreach, St. Bede's College, Shimla, on 11th March 2022, secured 2nd position in Inter-college Quiz competition organized by HIMCOSTE at Sanjauli College, secured 2nd position in Inter-ship quiz competition organized by the Science Dept. on National Science Day, participated in a 24 hours Online Training Program on Bioinformatics & CRISPR Technology organized by Makeintern E-Cell IIT Kharagpur from 8th Jan to 20th Feb 2022, secured 2nd position in Painting competition and Slogan writing organized by Environment Cell on World Forestry Day and World Water Day, secured 1st position in Story Writing on the theme "Real the Reel" organized by Debates and Dramatics Society.
2. **Sarah Gupta:** Secured 2nd position in a Quiz competition organized by Geography Dept. on World Ozone Day, secured 2nd position in Animal Photography competition organized by Zoology Dept. on World Animal Day, presented a presentation on Career Counselling on a webinar for GSSS Portmore School organized by Community Outreach, St. Bede's College, Shimla, on 11th March 2022. She was crowned 1st runner up in farewell of college, The Grad's Nite 2022.
3. **Shreya Dubey:** Secured 2nd position in a Quiz competition organized by Geography Dept. on World Ozone Day, secured 3rd position in Animal Photography competition organized by Zoology Dept. on World Animal Day, attended 70th Wildlife Week organized by Wildlife Wing, Forest Dept. Himachal Pradesh from 2nd to 8th October, 2021. She stood 1st in a Painting competition organized by Psychology Dept. on the occasion of World Mental Health Day, participated in Inter-ship Skit competition on "Humare Swatantrata Senani" on 1st December 2021, organized by St. Bede's College Shimla. Secured 1st position in Painting competition and Slogan Writing organized by Environment cell on World Forestry Day and World Water Day.

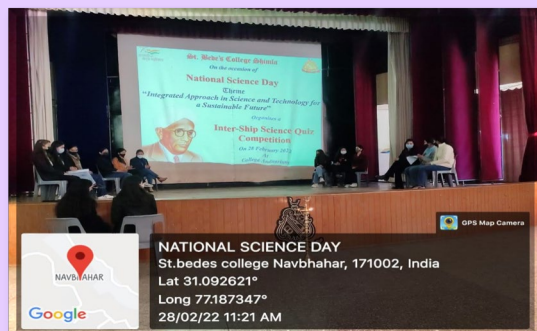
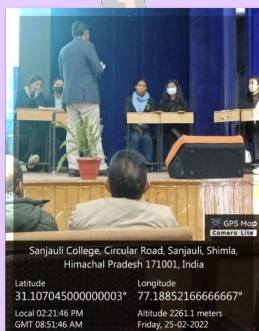
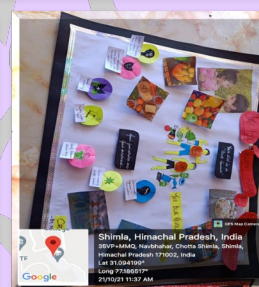


4. **Megha Sharma:** Stood 1st in a Science Quiz Competition organized by Science Department of St. Bede's college Shimla on 23rd September, 2021. The team was named McClintok.
5. **Payal:** Stood 2nd in Animal Quiz competition organized by Zoology Dept. on World Animal Day.
6. **Sanjana Verma:** Stood 1st in a Photography Competition organized by Zoology Dept. on World Wildlife Day, March 4th 2022.
7. **Preeti Verma:** Participated in Inter-Ship Skit competition on "Humare Swatantrata Senani" on 1st December 2021, organized by St. Bede's College Shimla.
8. **Aditi Sharma:** Participated in Inter-Ship skit competition on "Humare Swatantrata Senani" on 1st December 2021, organized by St. Bede's College Shimla.
9. **Shaiphali Kaushal:** Participated in 24 hours Online Training Program on Bioinformatics Tools and Software & Genetic Engineering Using CRISPR Technology organized by Makeintern E-Cell IIT Kharagpur from 8th Jan to 20th Feb 2022.

SECOND YEAR

1. **Manisha Rawat** secured 1st position in Quiz competition held on World Animal Day by Zoology Department.
2. **Awantika** secured 1st position in Quiz competition held on World Animal Day by Zoology Department and 1st position in Inter-ship Quiz competition held on the occasion of National Science Day by Science Department.
3. **Chinmay Sharma** secured 1st position in poem writing competition organised by NCC and 1st position in collage making competition held on World Food Day by Botany Department.
4. **Aditi** secured 1st position in Quiz competition held on World Animal Day by Zoology Department, 1st position in Collage making competition held on World Food Day by Botany Department, 2nd Position in Extempore competition on Blood Donation by Red Ribbon Club, 1st position in Inter-ship Quiz competition held on National Science Day by Science Department, represented college in inter-college competition on National Science Day by HIMCOSTE and secured 2nd position.

Team	Round 1	Round 2	Round 3	Round 4
1. M.C. Gauri	10	10	10	10
2. K. K. K. K.	10	10	10	10
3. S. S. S. S.	10	10	10	10
4. M. C. Gauri	10	10	10	10
5. A. A. A. A.	10	10	10	10
6. K. K. K. K.	10	10	10	10



Patron: Prof. (Sr.) Molly Abraham

Principal St. Bede's College Shimla

Student Editors: Shruti Chauhan, Sarah Gupta and Shreya Dubey

Student Co-editors: Aditi, Awantika

Staff Editors: Dr. Shweta Thakur

Dr. Jyotika Brari

Created and Designed by: Shruti