STEAM

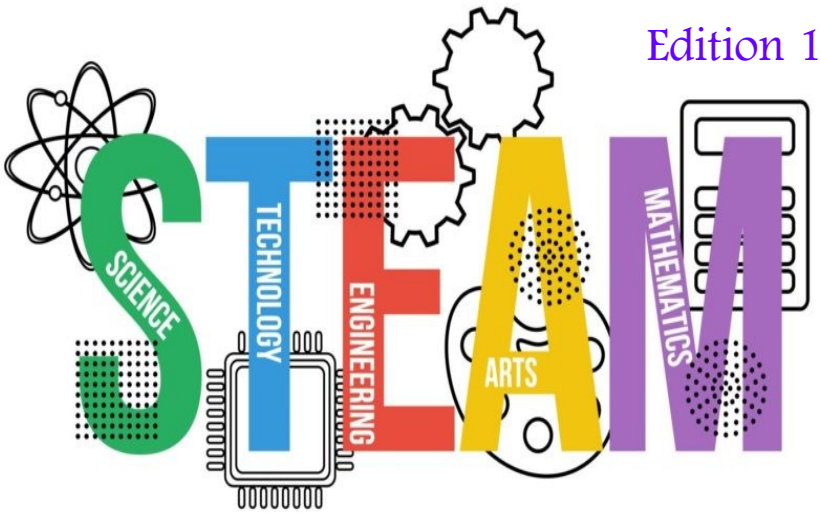
Bal Bharati PUBLIC SCHOOL ROHINI

Inside this issue:

Volume V , Issue XIII January 2022

Dear Readers

We bring to you our special series on STEAM stories, a display of our students' work using multidisciplinary and experiential learning . This special series comprises of five different editions-each emphasizing on the individual element . Here is the edition 1 which deals with Science .



Edition 1

STORIES

"S" for science

STEAM

From The Principal's Desk

"STEAM is an educational approach to learning that uses Science, Technology, Engineering, the Arts, and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking."
Susan Riley, CEO and Founder of the Institute for Arts Integration and STEAM

Dear Readers,
The genesis of this e-newsletter on STEAM has its roots in showcasing the different innovations taken up in our school in recent times. We continuously strive to inter weave different threads of scientific learning with creative colours of Art for improved application of knowledge and better outcomes for science based academic disciplines.
It will be interesting to share the journey of STEAM with the readers and also, transition of STEM into STEAM. The concept for special curriculum for scientific learning that catered to future jobs grew around in 1990s worldwide and it was in 2001 that the acronym STEM - Science, Technology, Engineering and Mathematics was coined. The purpose was to nurture technical workers and industry leaders and to provide the intellectual foundations and tools for future scientists, inventors and engineers.
Stratford Schools say that a program that incorporates the Arts into the curriculum has been proven to increase creativity, improve academic performance, increase motor skills, enhance visual learning, and boost higher decision-making skills. It was around 2007 that A of Art was introduced in STEM making it STEAM. When Art was added, STEM came to life and sparked connections for many more students to engage meaningfully, critically, and confidently in their learning. Indeed, STEAM is the humanising piece of transdisciplinary and interdisciplinary instruction that broadens the spectrum of learners along with enhanced engagement and improved Learning Outcomes for students.
Dear readers, futuristic approach to education is pivotal for making learning process meaningful for our children. After going through the activities, events, olympiads etc mentioned in the e-newsletter, we are aspiring to minimise the gaps between the school and the real world.
Happy reading

GEETA GANGWANI
PRINCIPAL

Bal Bharati PUBLIC SCHOOL ROHINI

STEAM

From The Vice Principal's Desk

"Equipped with his five senses, man explores the universe around him and calls the adventure Science."
Edwin Powell Hubble

Teaching of Science in the present times of online mode is a very challenging task. In absence of physical senses like touch, smell or due to experiential limitations, the whole premises for science teaching learning seems compromised. And, due to this, the job of science teachers becomes exceptionally demanding. For deep learning to happen, they have to strive to create virtual opportunities for experiential learning tools and spaces. In this endeavor, the school management strives to provide all kind of logistic, training and motivational support to teachers to overcome the hurdles.

I would like to take this opportunity to share with the readers the innovations undertaken by the school to make teaching learning of STEAM subjects interesting and meaningful. Learning of Science and experimentation of scientific concepts and theories are corelated and integral to each other. Understanding this, school initiated the shift to virtual laboratories and all students were registered on OLABS along with using simulations on PHET Colorado. There are other numerous exciting platforms like Quizizz, Kahoot used by teachers which act as reinforcements as well as assessment tools.

Project Based Learning was taken up in an emphatic way wherein all the subjects were integrated with science in a project which would enable holistic learning. Also, research work in science was carried out with emphasis on interdisciplinary streams by the teachers as well as students. Collaborative learning was sought after by seeking support from homes. For example, the teacher related concepts such as Acids, bases and salts with routine life by getting material from kitchen.

Art integrated learning was emphasized in science where various concepts were related to different art forms viz puppetry was related to control and coordination. Moreover, activities were designed in which yoga was integrated with concepts in biology and the importance of yoga in maintaining the efficiency of various organs was explained. A lot of events which were initiated by DOE like Poshan Maah, International Year of Millets etc were conducted. These events/ competitions were able to relate science with daily life. With Ek Bharat shresth Bharat campaign, students of primary classes did research on water conservation techniques used in Sikkim.

The temperament of enquiry and curiosity has its roots in scientific scrutiny and BBPS, Rohini used all available resources, tools and strategies to ingrain it in our children despite the limitations. Our achievements and accolades in the field are also validation of the fact that the impact of these initiatives is visible and palpable.

BANDHANA SHARMA

VICE PRINCIPAL

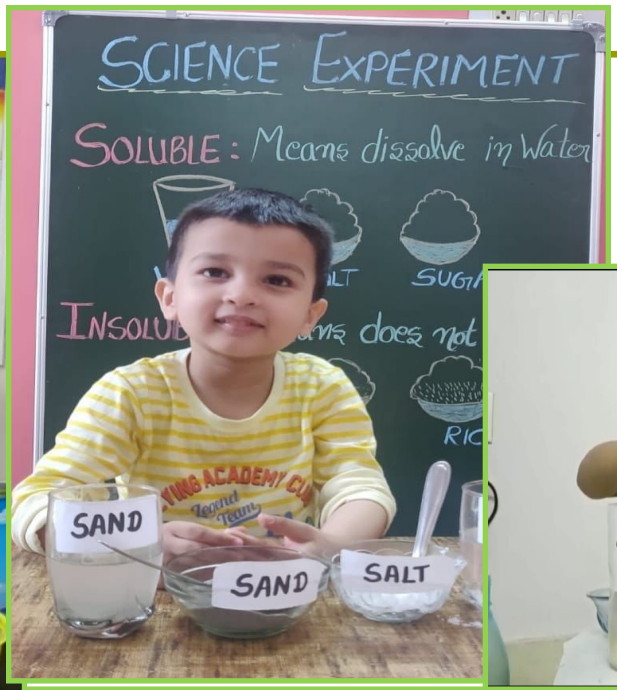
Bal Bharati PUBLIC SCHOOL ROHINI

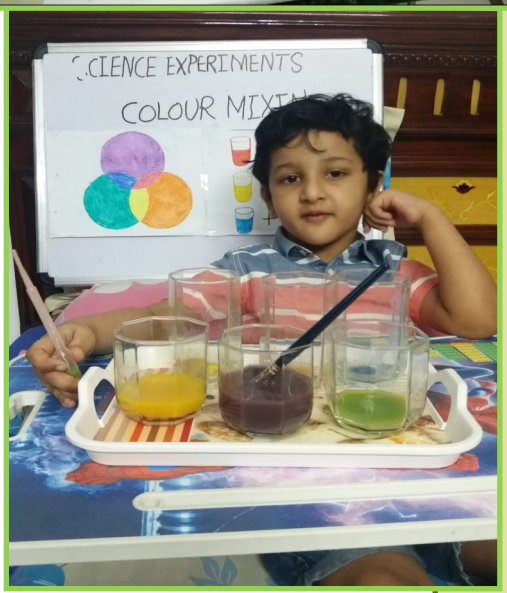
STEAM: SCIENCE

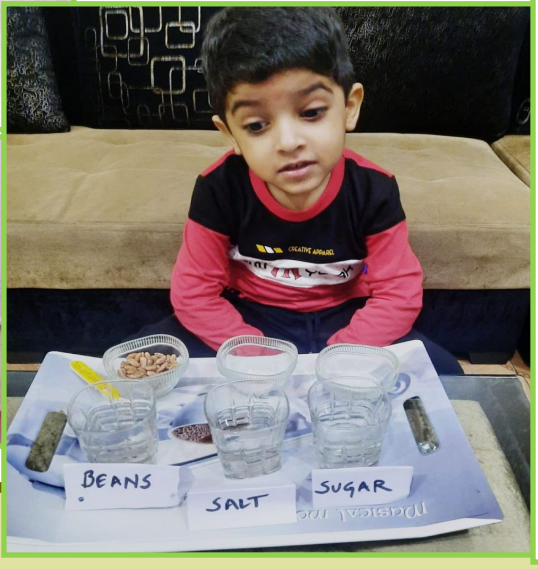
STEAM

BUDDING SCIENTISTS

Tell me and I forget. Teach me and I remember . Involve me and I learn.





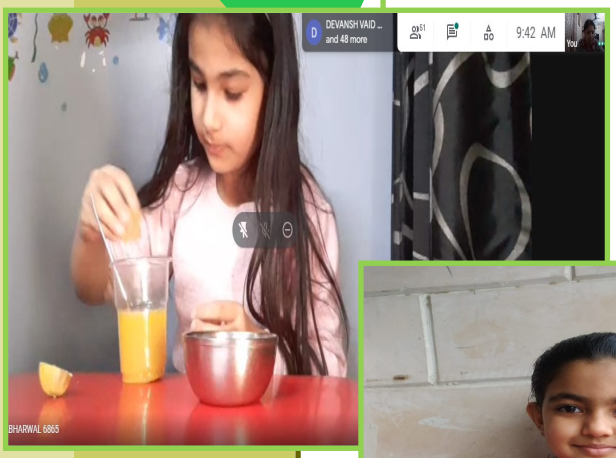


STEAM

EXPERIENTIAL LEARNING

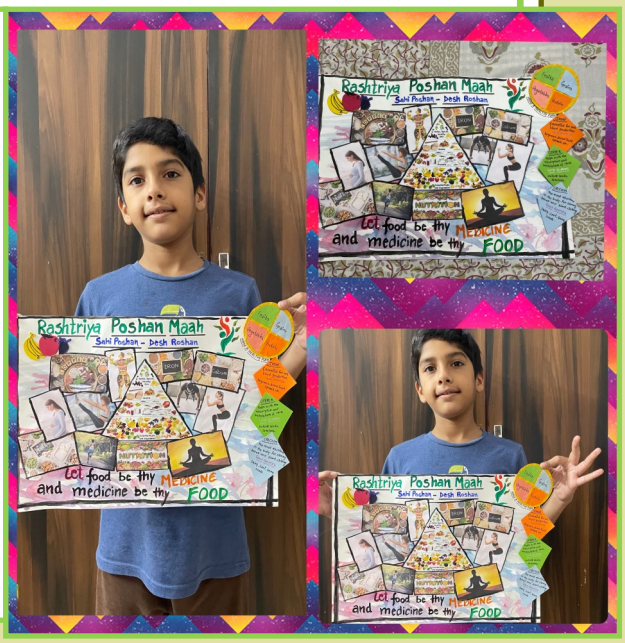
Science experiments were conducted in the virtual class to create first hand learning experiences. The students were encouraged to conduct the same experiments, simultaneously, and discuss the observations.

Hands on activities to explain the concept of density, air pressure, floating and sinking, oxygen is needed for burning, miscible and immiscible liquids were held.



POSHAN MAH

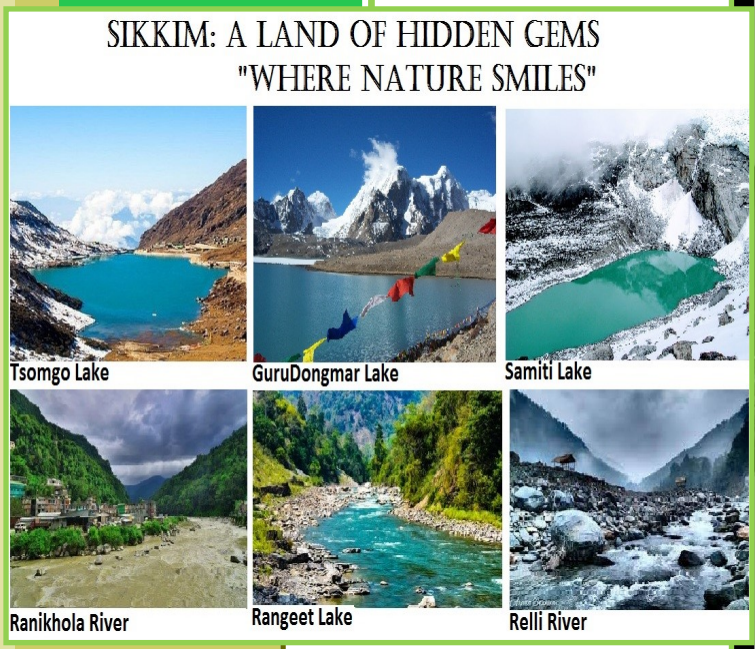
To celebrate Rashtriya Poshan Mah, students designed beautiful paper head gears and highlight healthy diet along with balanced diet charts.



STEAM

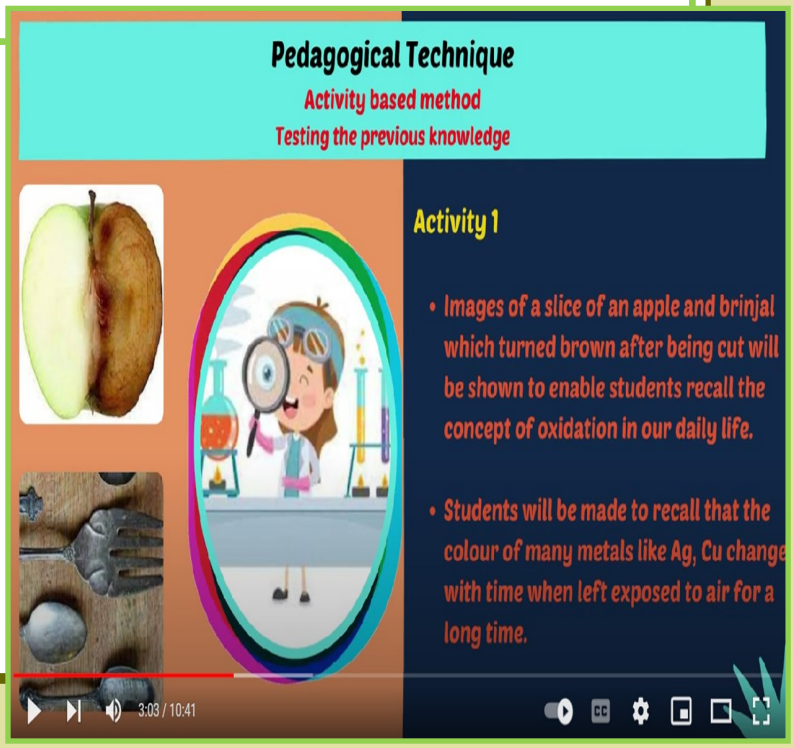
Ek Bharat Shreshth Bharat (EBSB)

Under EBSB Programme, students were engaged in various activities to create awareness about natural water bodies and water sheds of the paired states. (Delhi & Sikkim)



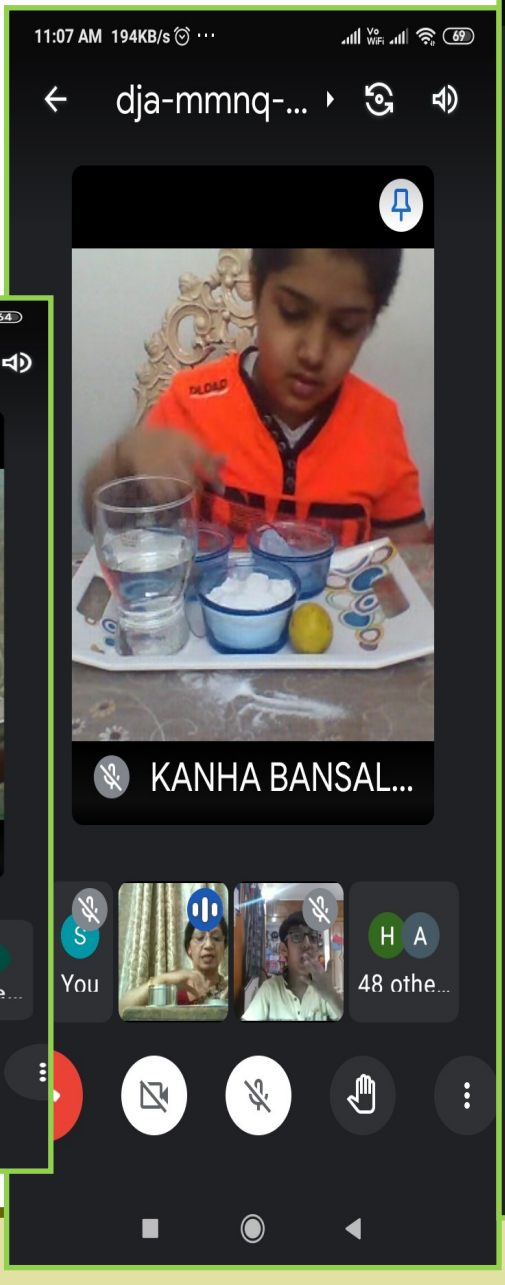
CAPTURE AND EXPLORE

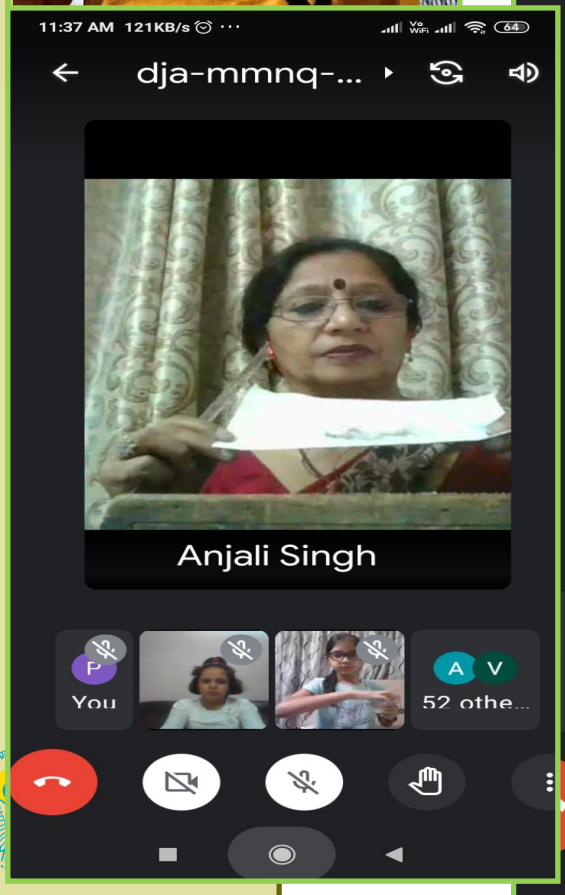
Students of the middle school clicked photographs of processes or phenomena related to chemistry in day to day Life.

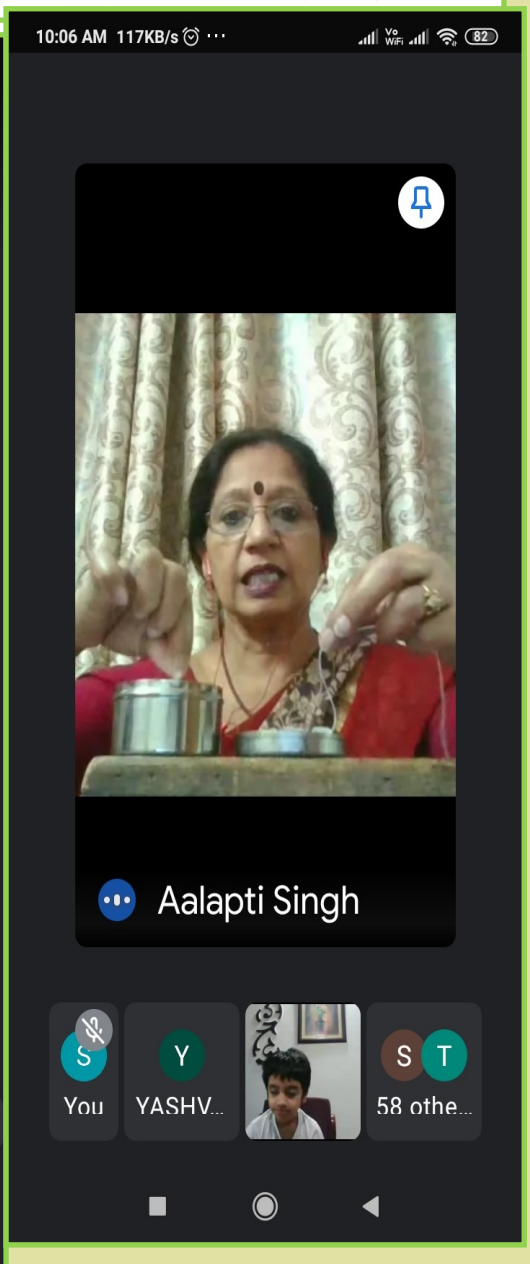


STEAM

Learning never exhausts the mind







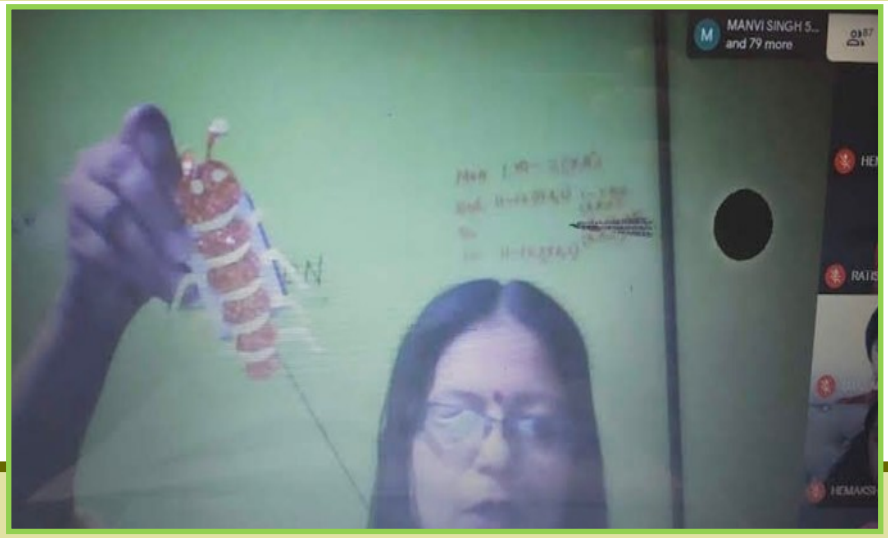
STEAM

Understanding Biology

Study of leaf pigments

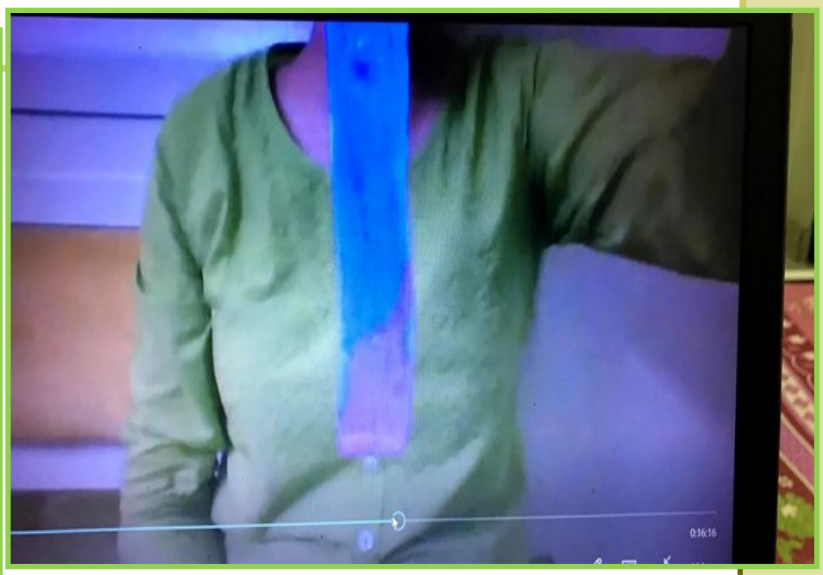
Explaining plant responses

Insect model made for structural analysis

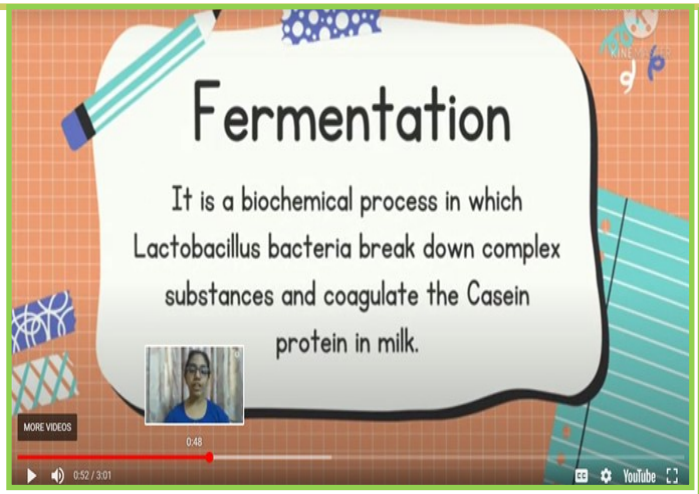


Bal Bharati PUBLIC SCHOOL ROHINI

Indicators made using turmeric solution and lemon juice



Fermentation as explained by students



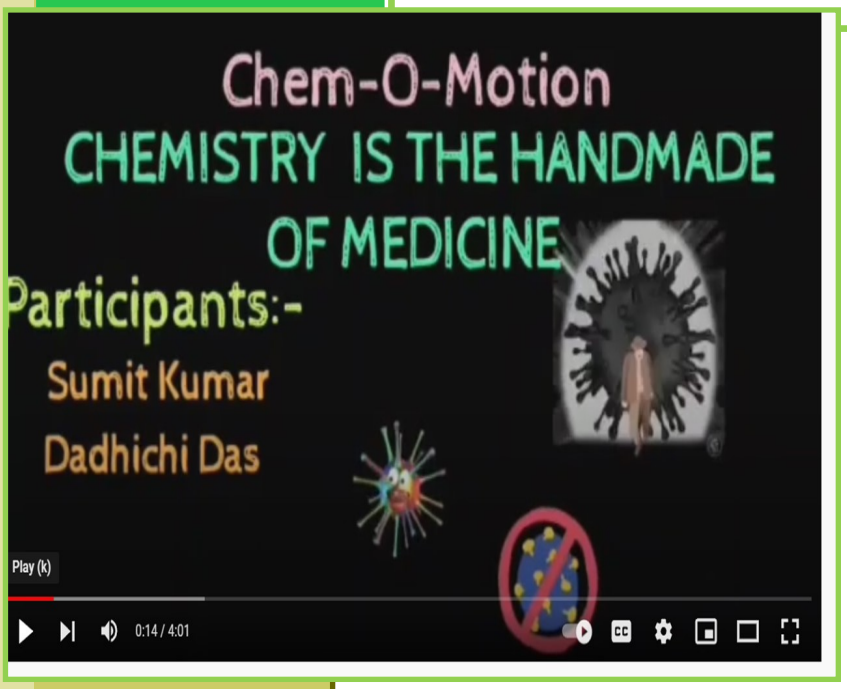
Eco-Bricks using plastic and non-biodegradable waste

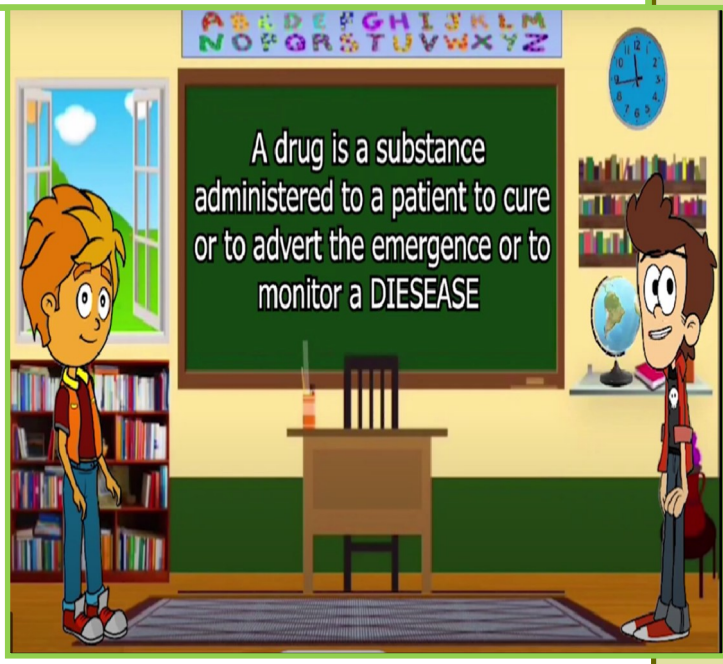
STEAM

Chemistry In Action

CHEM-O-MOTION

CHEM-O-MOTION: Students of XI & XII designed and presented animated movies highlighting the contributions of chemistry in drug development for corona virus .





EXPERIENTIAL CHEMISTRY

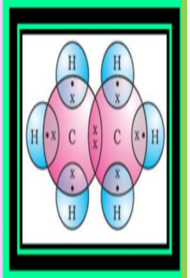
Students of class X performed and presented experiments at home to lead the class in concept building activities.

STEAM

LEARNING CHEMISTRY THROUGH STORY

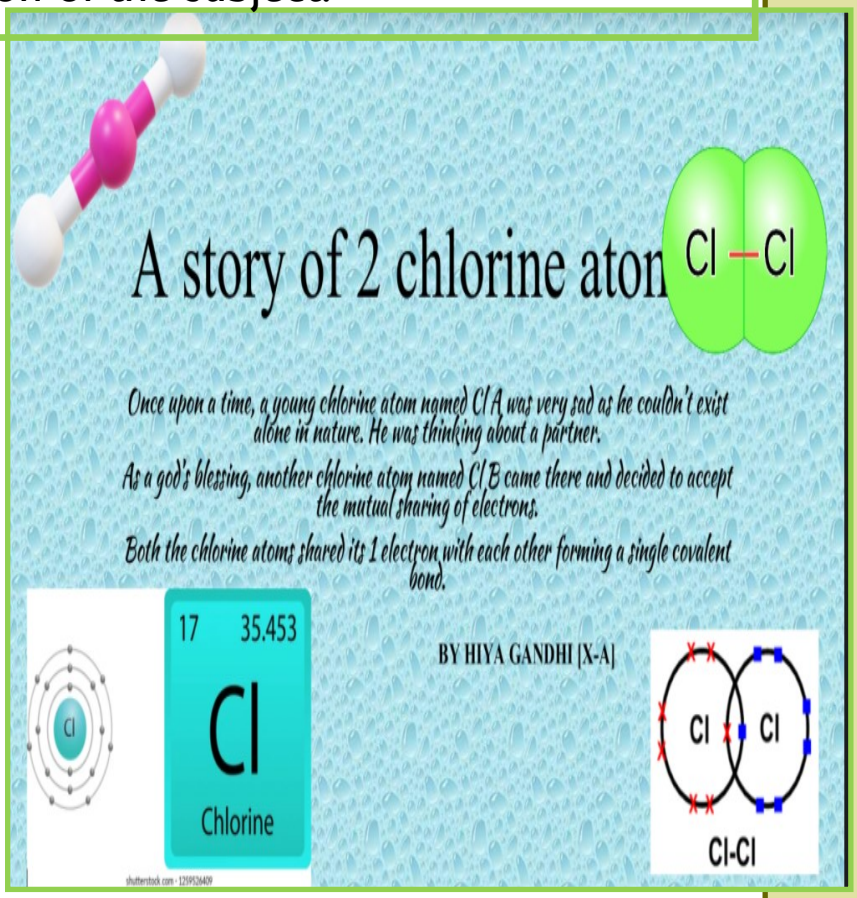
The students of class X used the narrative of a story to connect and elaborate the relationship of various atoms within a molecular structure to enhance and display their comprehension of the subject.

Once upon a time there was a bond which was formed due to sharing of electrons between two atoms which was called covalent bond. There was a protective and good hearted element whose name was Carbon, which had four electrons in its atom's outermost shell but it required 8 electrons to be stable so he shared it's electrons with other elements who were also unstable and didn't not have the required electrons in the outermost shells of their atoms. Because of this sharing of electrons not only Carbon attained stability but also other elements also acquired stability and due to this every element was able to become stable and happy in their lives by forming a friendship or bond named the covalent bond.



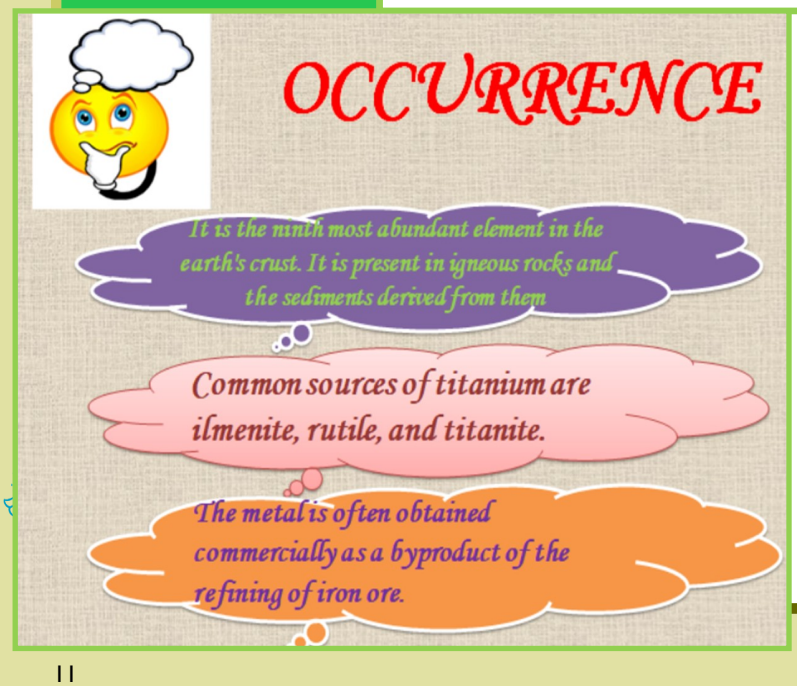
COVALENT BOND

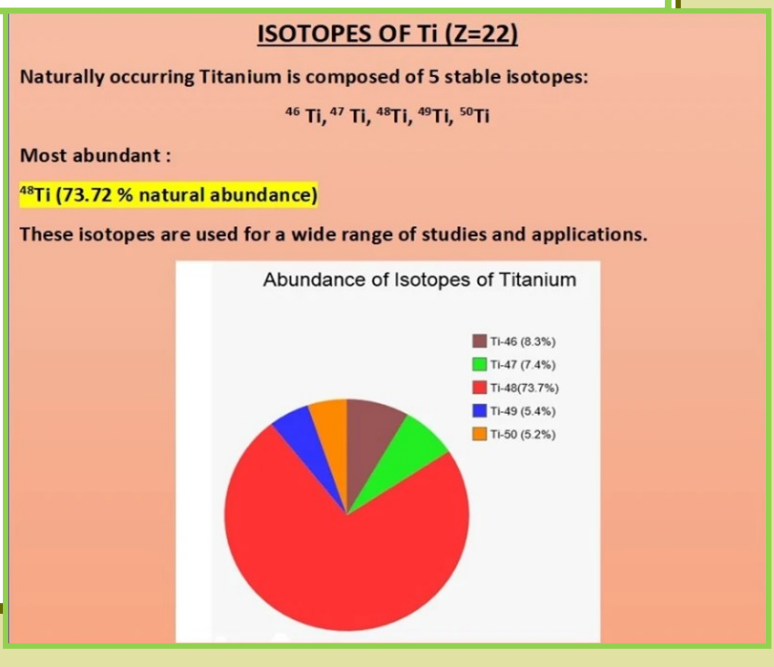
Moral- Sharing always helps oneself and others.



INTEGRATING ICT

Students of classes IX - XI used various ICT Tools to create and present their understanding of the concepts of Chemistry.



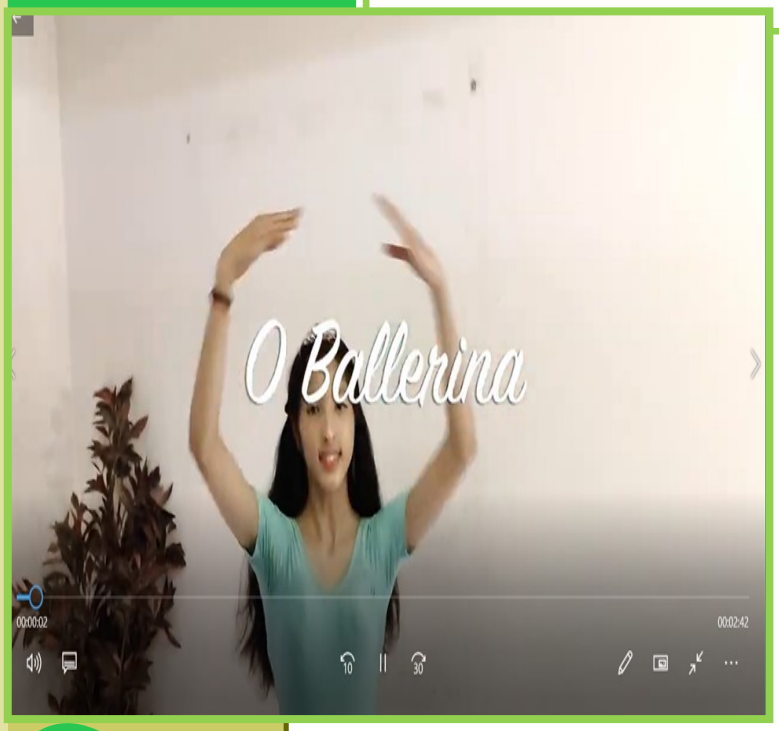


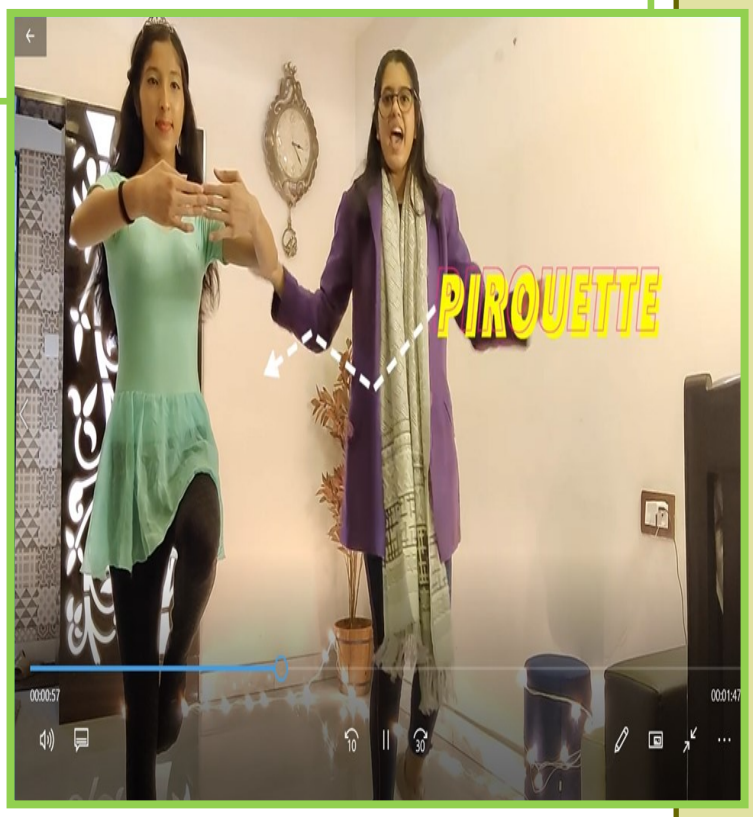
STEAM

Learning Physics

USING PERFORMING ARTS

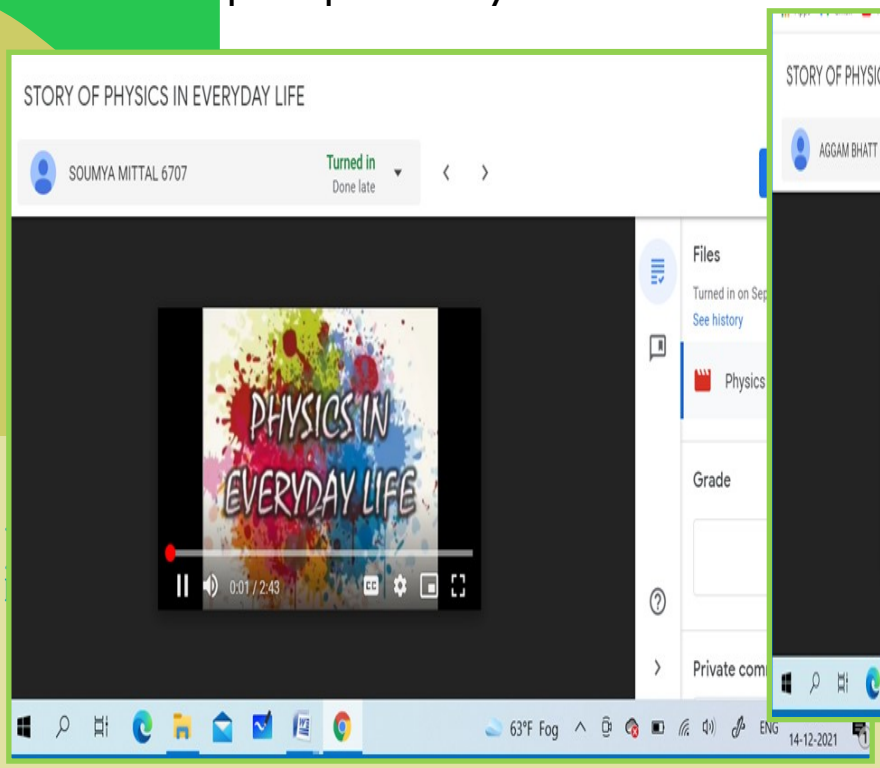
The students collaborated to formulate a script, enacted the postures and movements of a ballet dance to explain the concepts of Physics, beautifully.

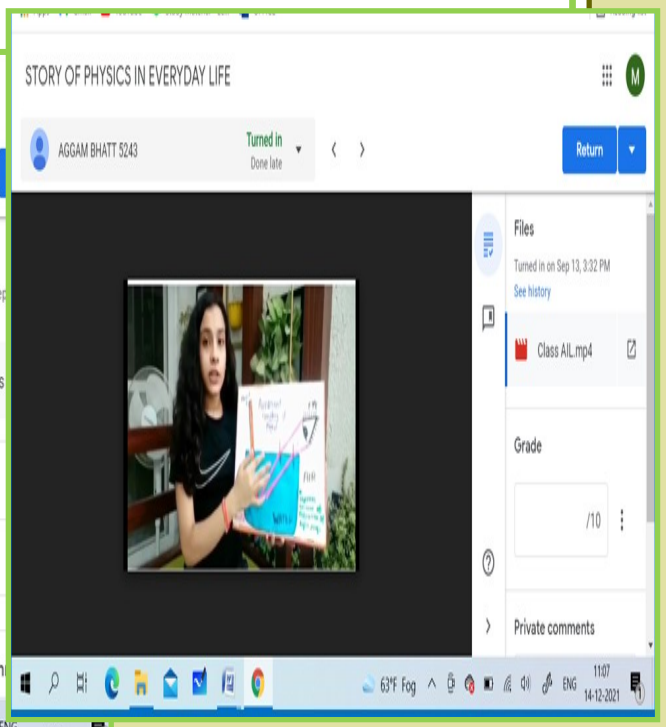




USING VIDEOGRAPHY

The students collaborated their work in small groups, recorded and shared a short video on the theme "PHYSICS IN EVERYDAY LIFE" , explaining the concepts and principles of Physics around them.

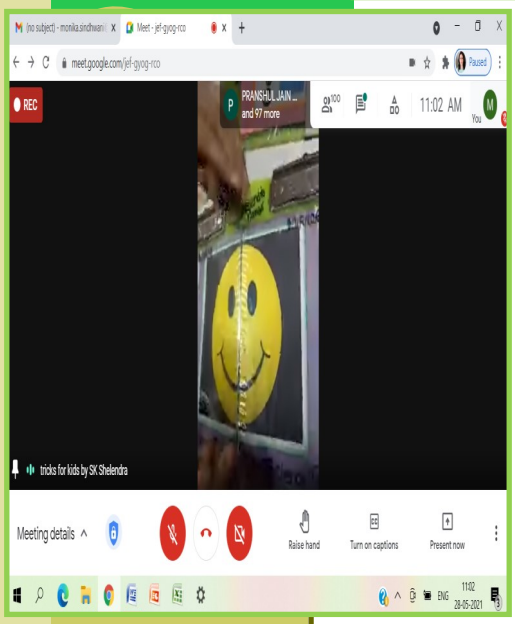


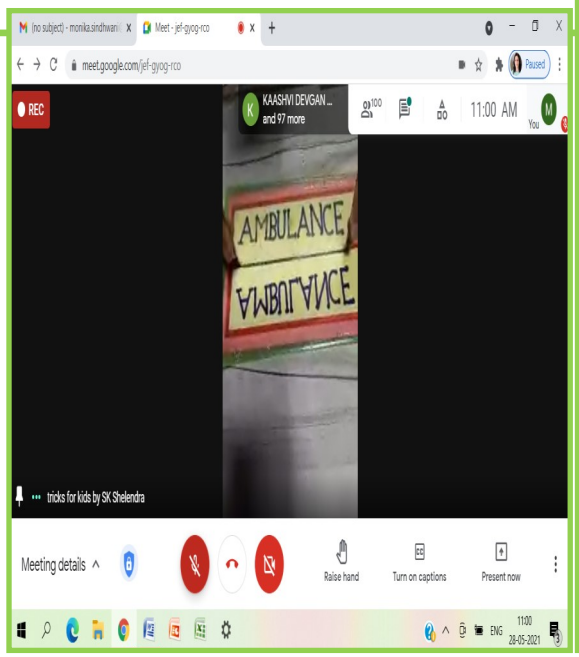


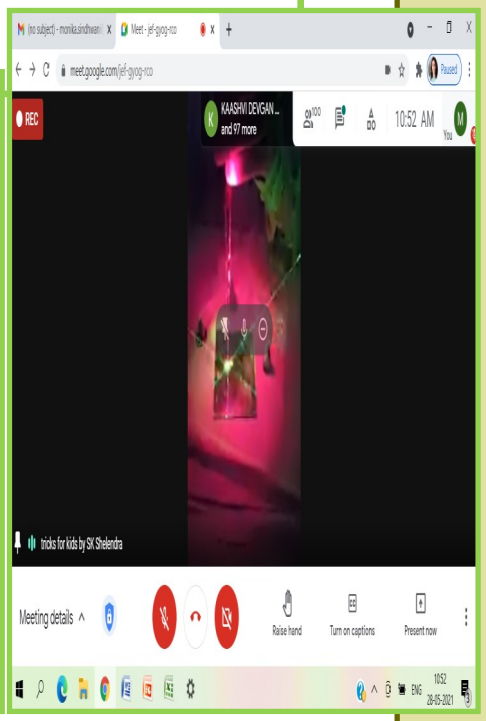
STEAM

LEARNING BY DOING

Live demonstrations and hands on activities on the topic : LIGHT

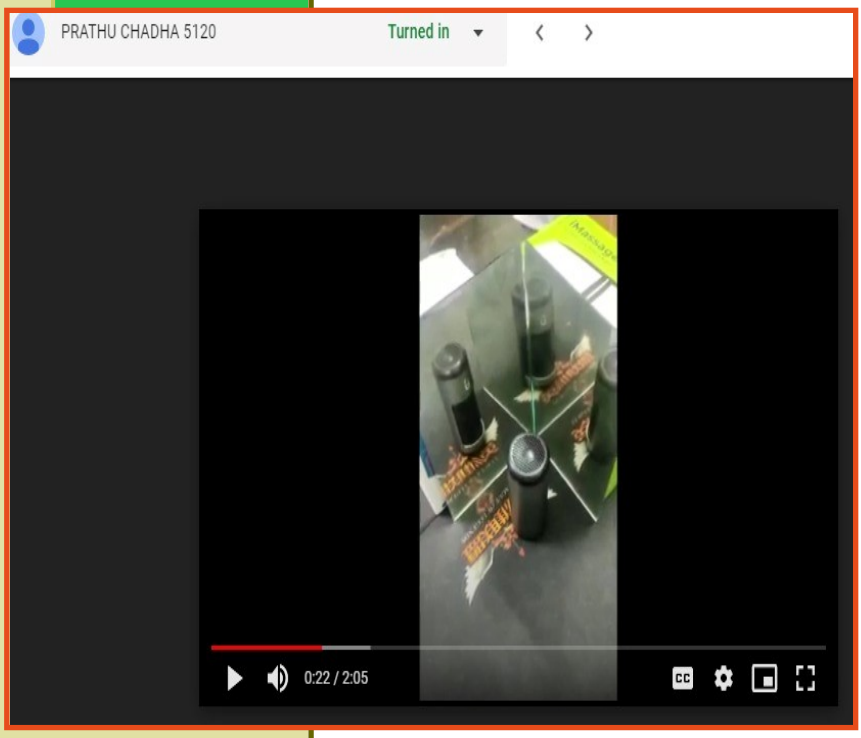






STORY OF PHYSICS IN EVERYDAY LIFE

Everyday phenomenon associated with physics including electrical effects, magnetic effects, heating effects of current, light - reflection, refraction etc were observed, recorded and presented by students.



STEAM Learning Through Virtual LABS

All students of classes IX to XII are registered on OLABS