Journey of National ICT Awardee Teacher

19th April 2023

Live / Online Session

Organized by

CIET – NCERT, New Delhi

Dr. Yogendra Kumar Kothari

Lecturer, Chemistry

Govt. Excellence Higher Secondary School

Madhav Nagar, Ujjain, M.P.

ICT Environment in my School

- **One of the missions of our school is the integration of ICT technology with regular classes**
- **Teachers are encouraged to keep an ICT plan; Identify the videos, animations can be included in teaching**

Computer Systems

Virtual Classrooms

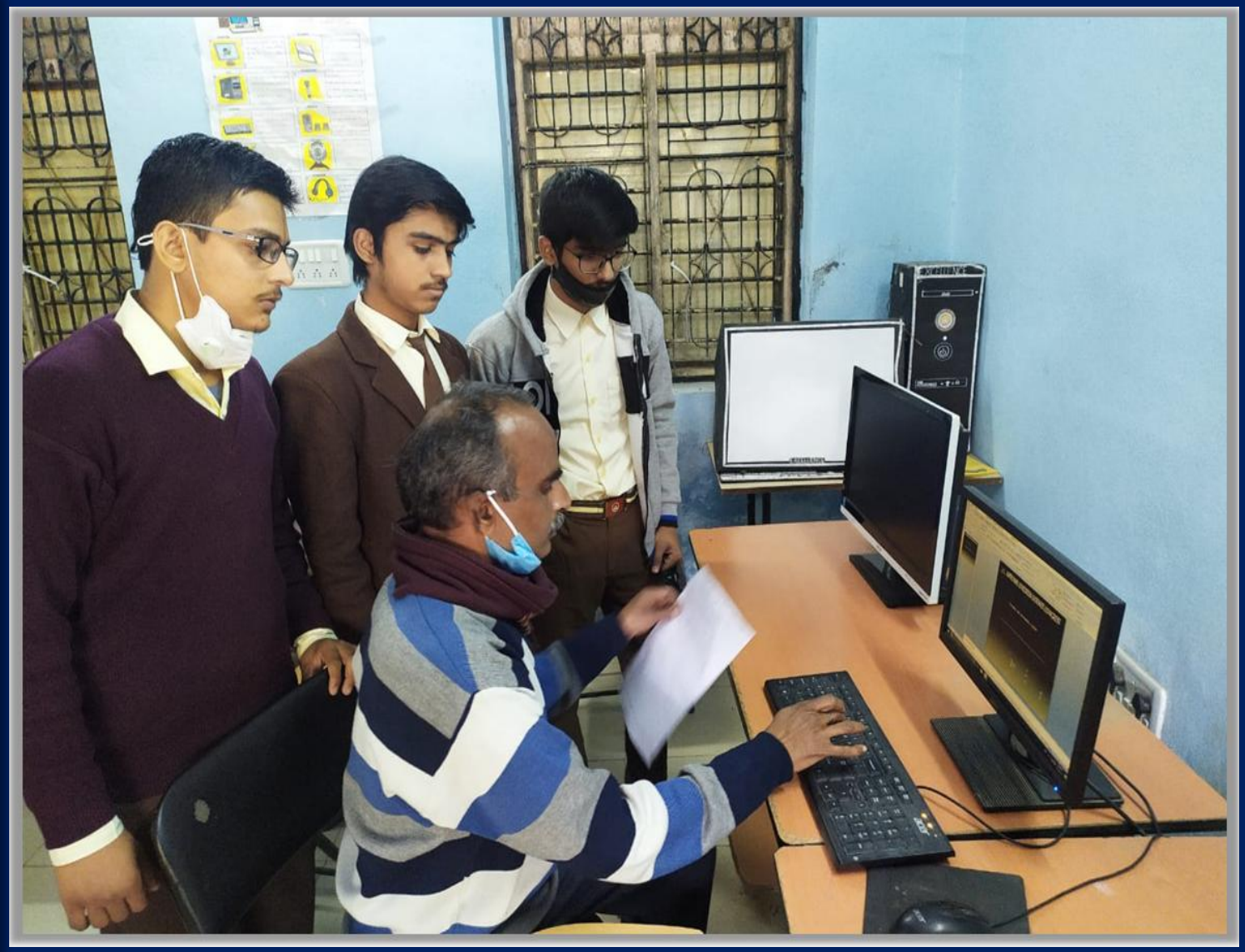
Smart Class Rooms

Software's used in teaching

- MS Office (Ppt)
- YouTube
- Google Form
- EBIX Smart Class and Board
- MS Teams & Google Meet

Lectures, documentaries stored in CDs, DVDs, Hard drive, Cloud based apps (YouTube)

School Computer Lab



Smart Classroom

My ICT Journey

1991 to Present

Involving Students via Science Clubs & Science Competitions

- ✓ Mentored students in making presentations, videos, other materials using ICT tools

2012

- ✓ PGDCA Course

2013 to 2015

- ✓ Tele Teacher
- ✓ Virtual Classes
- ✓ Resource person for Micro scale Chemistry

2016

- ✓ Smart Classes
- ✓ Blog on scientific knowledge and life
- ✓ Rural IT Quiz
- ✓ Science Olympiads
- ✓ TESS-101x Course on edX

2017 to 2018

- ✓ Started YouTube Channel for Chemistry and Science

2019 to 2020

- ✓ Master Trainer
- ✓ PhET Simulations
- ✓ OpenShot Video Editor
- ✓ DIKSHA
- ✓ NISHTHA
- ✓ DIGILEP Programme

2021 to present

- ✓ IUPAC Global Women's Breakfast
- ✓ CIET Resource Person
- ✓ CIET-NCERT trainings - Digital Tools, Multimedia Resource, Digital Pedagogy, Animation
- ✓ Intel AI for All and AI Aware
- ✓ Science Magic Shows
- ✓ Chemistry Lab Training

Recognitions

Awards	Year	Awarded by
Dr. C.V. Raman Science Popularization Teachers Award	1999	Science Centre, M.P
Innovative Science Teachers Award	2001	MPCOST, Bhopal
State Level Best Teachers Award	2007	Department of Public Instructions, School Education, M.P. Bhopal
National Teacher Award	2008	MHRD, Govt. of India
Vigyan Sanchar Samman	2010	Science Centre, Gwalior, Madhya Pradesh, Bhopal
Silver Zone Educational Excellence Award	2012	Silver Zone Foundation, New Delhi
Best Chemistry Teacher Award	2013	TATA Chemicals, ACT, Royal Society of Chemistry, and CII
Patrika Teachers Excellence Award	2016	Patrika Newspaper Group, India
Outstanding Science Teachers prize for the year	2016	CNR Rao Education Foundation, JNCASR, Bengaluru
National ICT Award	2018	CIET-NCERT, Govt. of India

National ICT Award – 2018
by CIET - NCERT

National Teachers Award – 2008
by Ministry of Education, Govt. of India

Best Chemistry Teacher Award – 2013
By TATA Chemicals

Outstanding Science Teachers Prize – 2016
CNR Rao Foundation, JNCASR, Bangalore

61 वें राज्य स्तरीय शक्षक सम्मान समारोह में डॉ योगेंद्र कुमार कोठारी को माननीय शालेय शक्षा मंत्री, मध्यप्रदेश शासन श्री इन्दर संह परमार सम्मानित करते हुए

शिक्षा मंत्रालय भारत सरकार , नई दिल्ली द्वारा शासकीय उत्कृष्ट उच्चत्तर माध्यमिक विद्यालय, माधवनगर, उज्जैन के व्याख्याता डॉ योगेन्द्र कुमार कोठारी को नेशनल आई सी टी अवार्ड प्राप्त होने के फलस्वरूप जिला कलेक्टर, उज्जैन श्री आशीष सिंह ने डॉ कोठारी को प्रोत्साहित किया ।

My Teaching Methodology

Tell me - I forget, Teach me - I may remember, Involve me - I learn - Benjamin Franklin

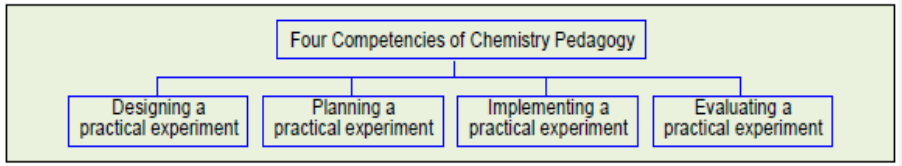
Innovative Lesson Plans for Engaging Classes	Student Involvement with Science Club	Participation in Science Competition
• Lesson plans to deliver the right content using appropriate **teaching aids and technology for effective learning** • Linking practical sessions with theory classes • Group projects	• **Games, Quizzes** for fun based learning • Stories of scientists • Science Exhibition • Sessions with teachers and scientists • Science centers visits	• With participation in Science competition students go through a series of **brainstorming sessions**, **problem solving** and **experience a diverse form of learning**, which they usually don't practice at schools • Self confidence

My Article in ACT Newsletter

Effective Pedagogy in Chemistry

Dr. Yogendra Kumar Kothari
Govt. Excellence Higher Secondary School, Madhavnagar,
Ujjain, Madhya Pradesh.

Chemistry is a mother of all sciences. Chemistry is an interesting subject, but some students and teachers think it is complex and difficult. People even say that Chemistry is a tough and boring subject as compared to Physics and Mathematics. Most of the students' feel Chemical formula of the compounds, Chemical equations, and Organic Chemistry are very boring therefore do not take interest in the subject. This also proves that teaching a subject such as Chemistry is always challenging and often is a tough task for the teachers. However, by adopting some innovative teaching methodology (called Chemistry Pedagogy), chemistry can be made very interesting.



Chemistry pedagogy must be effective, communicative, focusing towards skill development, should create interest, enhance understanding of the concepts, and should motivate students to explore knowledge by themselves. This way students can fall in love with chemistry and chemistry teachers. We all are aware that in the context of relationships, chemistry is a simple 'emotion' that two people get when they share a special connection.

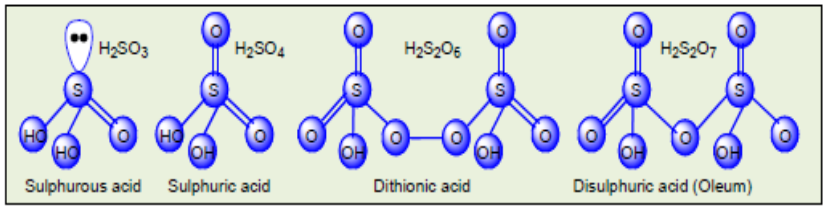
Once the above platform is set, students will love to explore the world of chemistry and as an innovative teacher you must add wings to the expectations of students through effective teaching methods that facilitate students' active participation.

The modern world in which we live in is a digital era. Most of the students and teachers are equipped with smart phones. Many of them have easy access to internet facilities. Hence, one can believe lots of advancements and privileges of this digital era are in students' fist. It is quintessential for the teachers to make sure students are using them wisely and are aware of the latest technological updates. Today's digitally boosted education system focuses a lot on student's engagement and active participation during the classroom. Hence, being an innovative teacher, we must use effective and innovative teaching methods that facilitate students' active participation.

Creating/Making a periodic table : With the help of element cards prepared above, students choose a group and prepare periodic table with cards Schlumberger-Private.

Making formula : With the help of cation and anion cards, students can prepare a chemical formula of the resultant compound.

Structural formula of oxy acid : To understand the 3-Dimensional structure of oxy acids, students can prepare models.



Concept of orbital by Balloon : Visualization of the concept of s, p, and d orbitals by balloon can intrigue students very much. This helps in strong foundation of the concepts.

By Video : Videos are excellent tools of teaching. Videos related to Science and Chemistry are very helpful for students as it gives them a good gut feeling on grasping of the concepts. They can jot down the notes from videos and use them to prepare for the examinations.

By Cartoon : With the help of cartoons, we can explain the nature of various gases like H_2, N_2, HCL, Cl_2 and NH_3. Eventually, you can use some off the way tips and methods to make chemistry easy for your students.

By Model : Geometry and Hybridization of molecules like $BeCl_2$, H_2O, NH_3, CH_4 etc are explained by model of molecules.

By Power Point presentations : The best way of getting students excited in chemistry is by presenting it in a dynamic manner. Instructors should present the lectures with the combination of boards and audio-visual aids such as PowerPoint slides and videos etc. that makes chemistry more alive and real to the students as our millennium students are mostly visual learners due to the image-centric, visual world in which they are raised. Students grasp the concepts better if they can picture them.

Chemistry in Everyday life : Chemistry touches all aspects of our lives. An experienced instructor can connect the depth of the science of chemistry with its every-day-life importance. For example: we are surrounded by the usage of chemicals in our daily routine: Toothpaste ; Salt ; Soap ; Detergents etc.

ICT Tools Used

Simulations

- Interactive Periodic Table
- PhET Simulations
- ChemTube 3D

Online Meeting Tools

- Microsoft Teams
- Cisco Webex
- Google Meet
- Zoom

Presentations

- Projector
- Laptop
- Microsoft PowerPoint
- Internet

YouTube Videos

- Laptop
- Smart Phone
- OpenShot video editor

Digital Learning Platforms

- edX
- DIKSHA
- NISHTHA

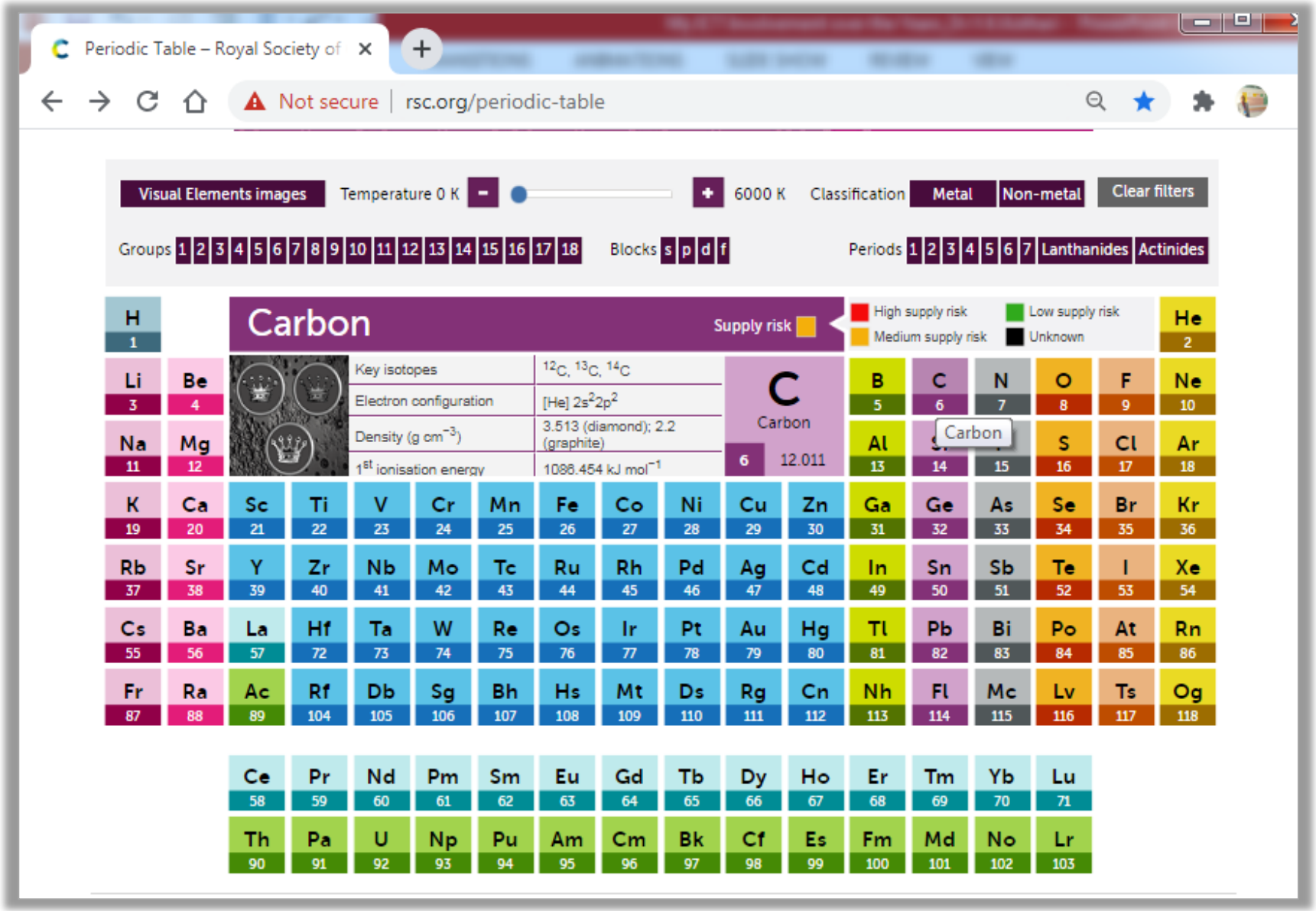
Other Software's

- Google forms
- Google Drive
- MS Excel
- MS Word

Free or open-source tools for chemistry

- *Interactive periodic table* - royal society of chemistry
- *Jmol* is one of the most recognized molecular viewer tools.
- *Avogadro* is compatible with nearly 80 file formats. 2D and 3D molecule editor and viewer.
- *PhET* simulation-PhET provides fun, free, interactive, research-based science and mathematics simulations (University of Colorado Boulder)
- *Chemtube 3D* -Nick Greeves, Director of Teaching and Learning

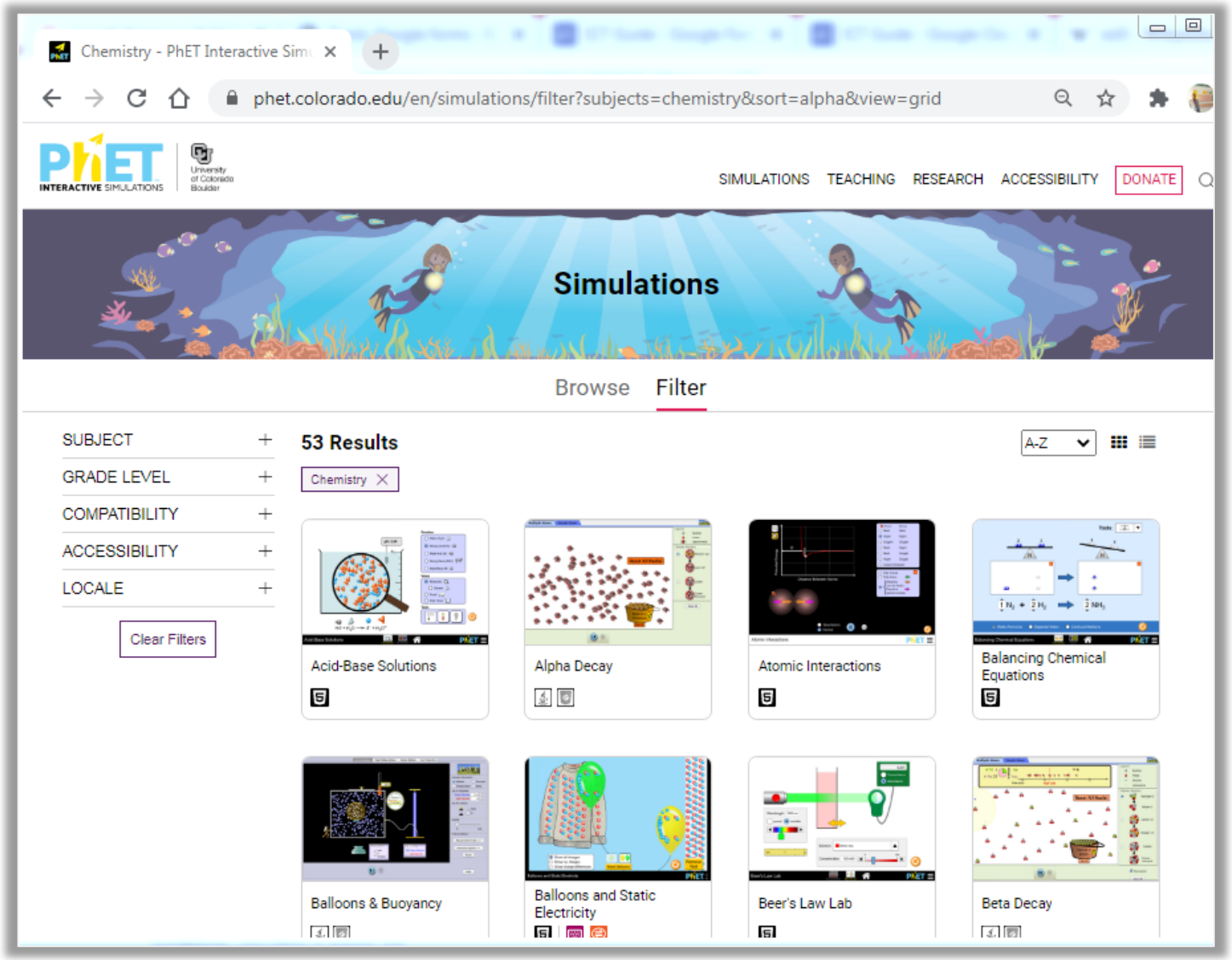
Interactive Periodic Table



The **Royal Society of Chemistry's** interactive periodic table features

- Atomic Number & Mass
- Classification into metals & non metals
- Effect of Temperature on states of matter
- Electronic Configuration

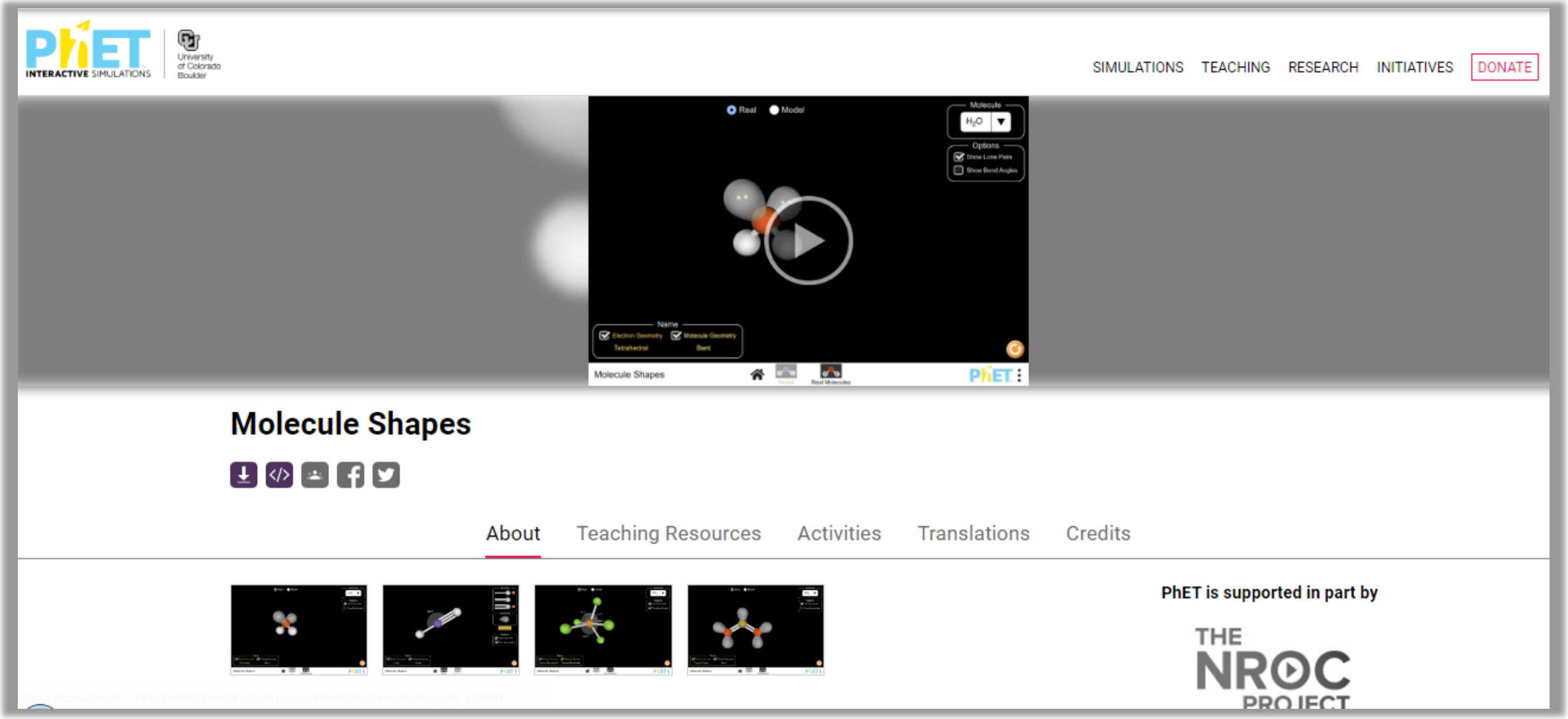
PhET Simulations in Chemistry Teaching



- PhET Interactive Simulations is a non-profit **open educational resource** project that creates and hosts explanations
- It was founded in 2002 by Nobel Laureate **Carl Wieman**
- PhET began with Wieman's vision to **improve the way science is taught and learned**

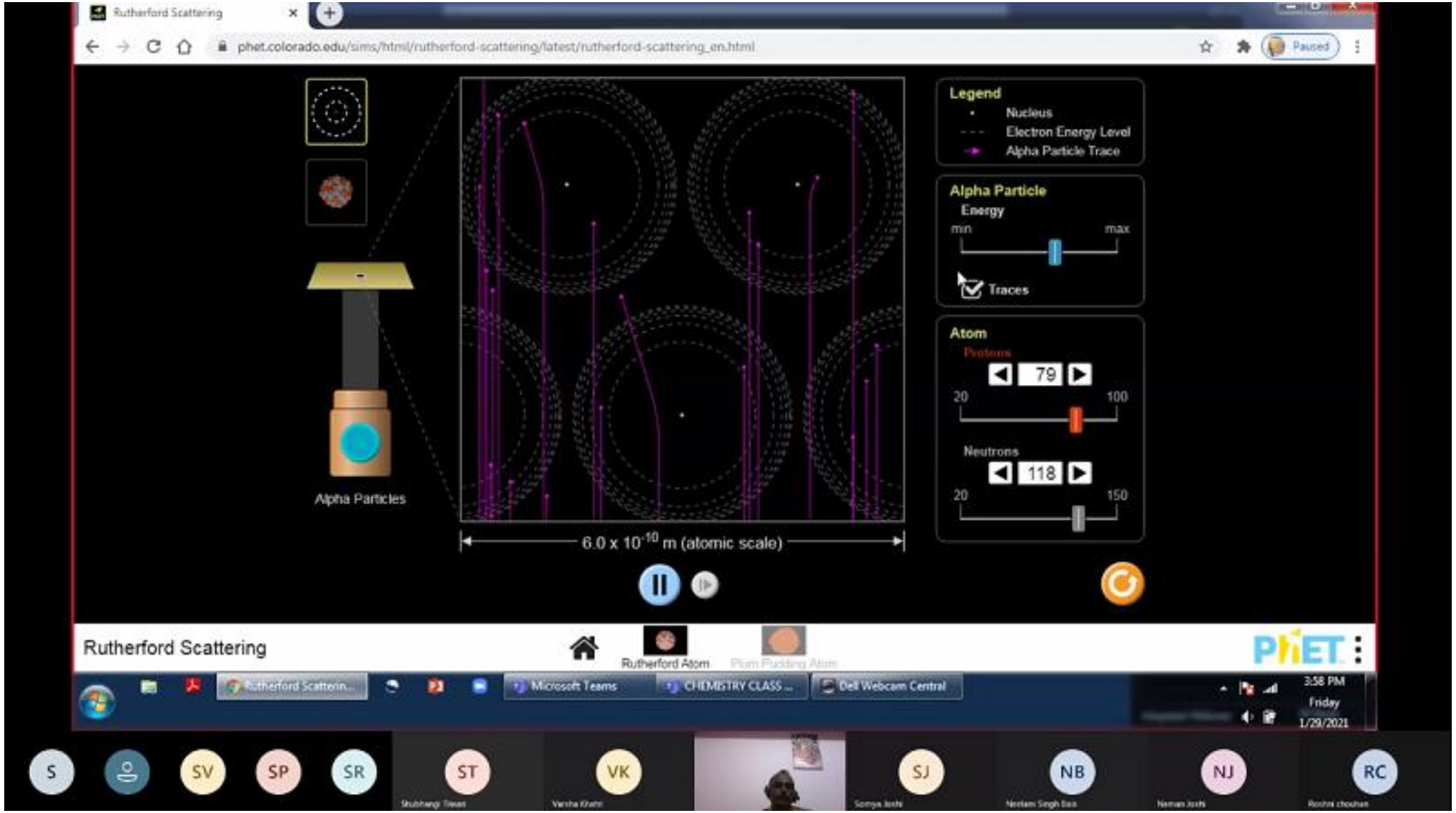
https://phet.colorado.edu/

PhET Simulation: Molecule Shapes



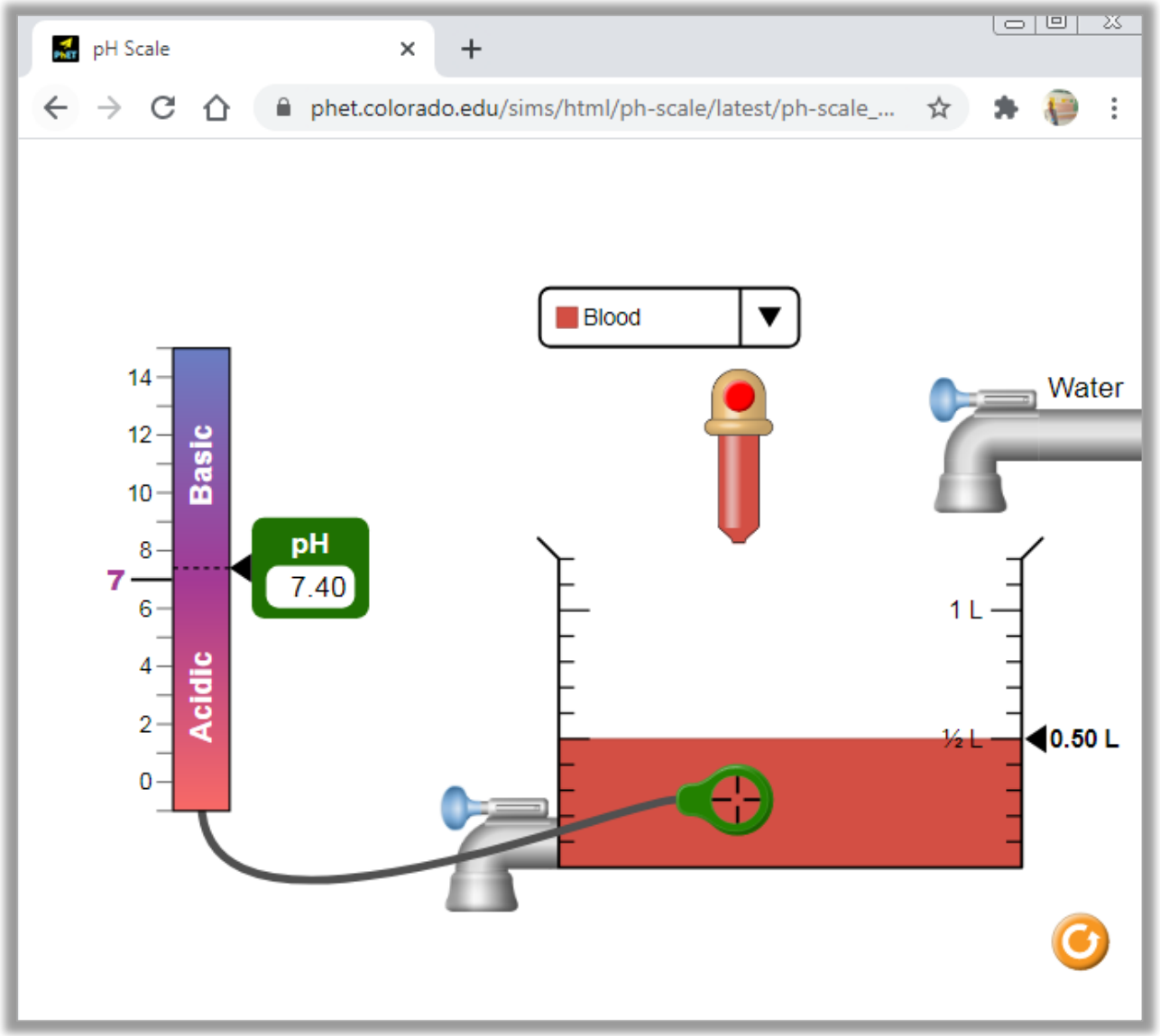
Demo : PhET simulation for Molecular Geometry

Online Interactive Class - PhET Simulation: Rutherford Scattering



Source: Snip from virtual class

PhET Simulations on Other Topics



https://phet.colorado.edu/

Other Simulations
Balancing Chemical Equations
Isotopes and Atomic Mass
pH Scale
Concentration of Solutions
Build an Atom

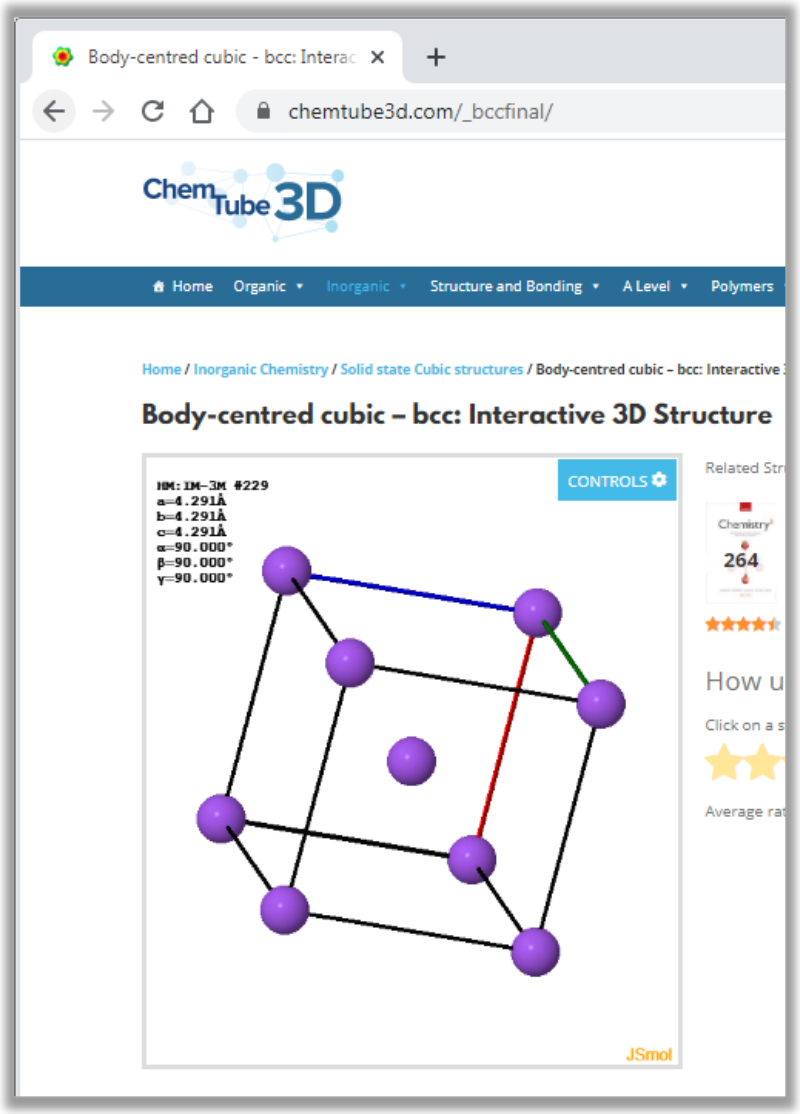
CIET-NCERT Resource Person

ChemTube 3D in Chemistry Teaching

ChemTube3D is an **Open Educational Resource (OER)** that contains interactive 3D chemistry animations and structures, with supporting information, for students studying some of the most important topics in advanced school chemistry and university chemistry courses

Source: https://chemtube3d.com/

ChemTube 3D in Chemistry Teaching



Other Simulations
Atomic Orbitals
Molecular Orbitals
Crystal Structures
Shape of Molecules - VSEPR
Structure of Polymers
Reactions in Organic Chemistry

Source: https://chemtube3d.com/

Master Trainer

Trained 105+ teachers virtually on using

- Microsoft Teams
- Zoom
- Google Meet
- Cisco Webex

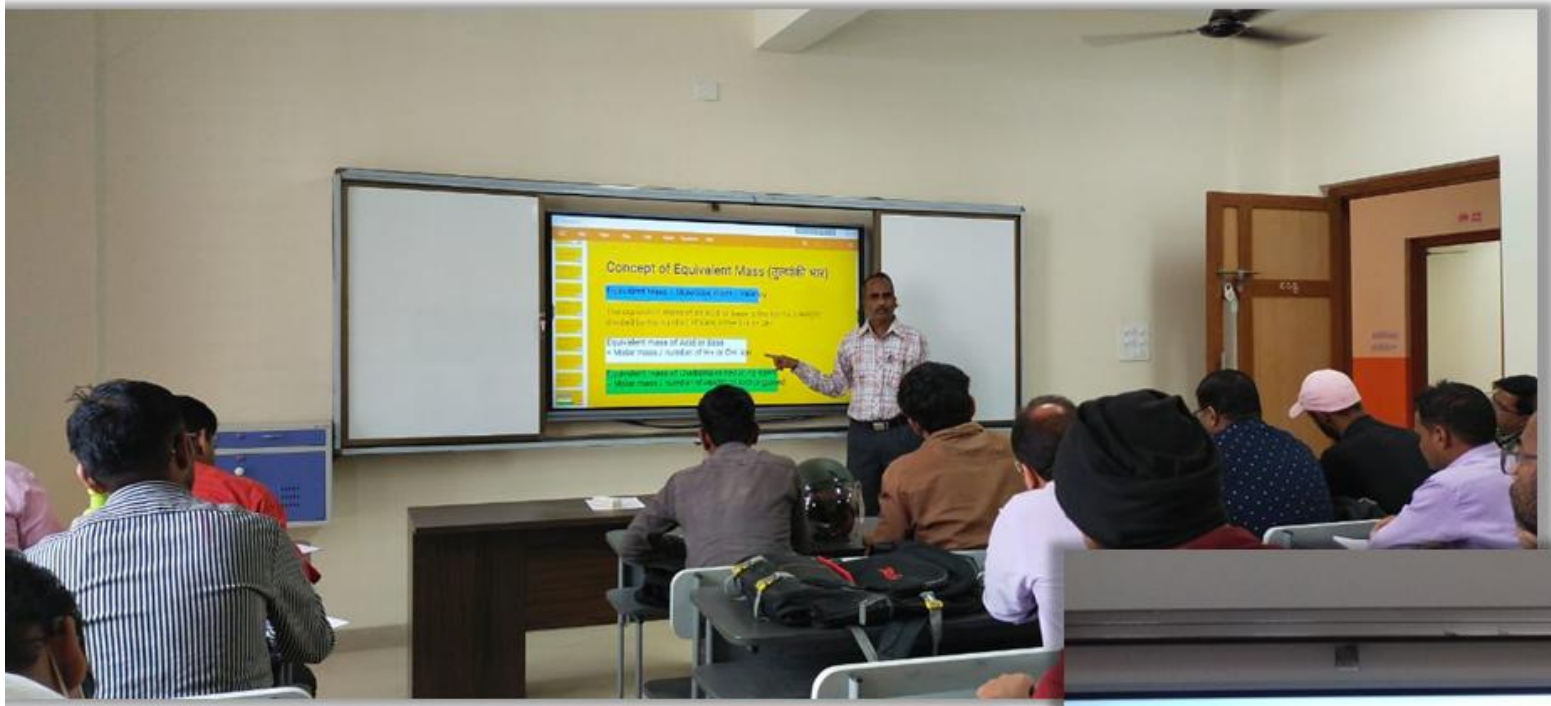
The training involved

- Schedule a meeting
- Sending Invitations
- Running the virtual meetings
- Screen share
- Step by step guidance on using these tools
- Question Answer session

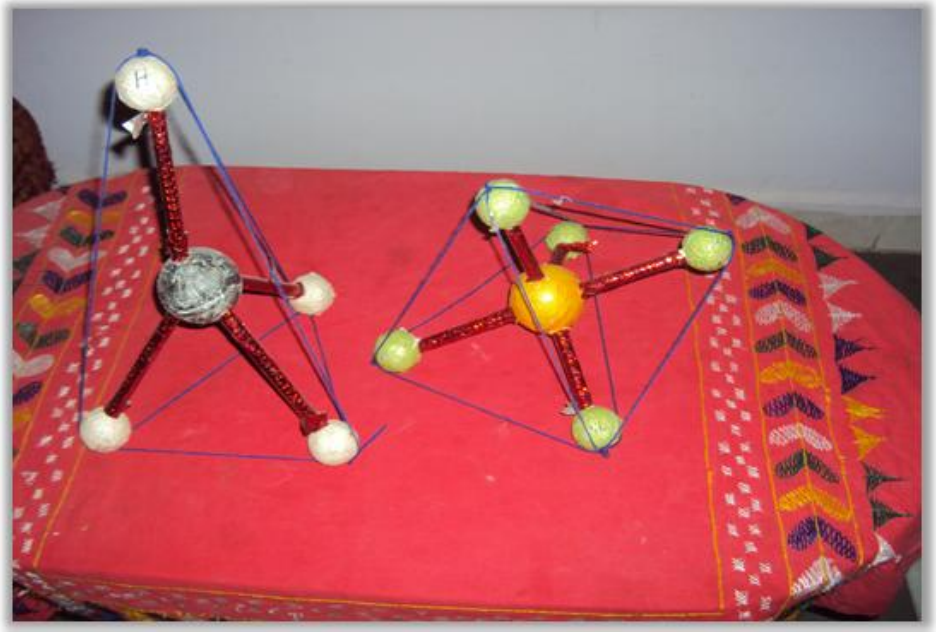
Master trainer for Chemistry teachers training

- Sessions with presentations, live demonstration and teaching aids

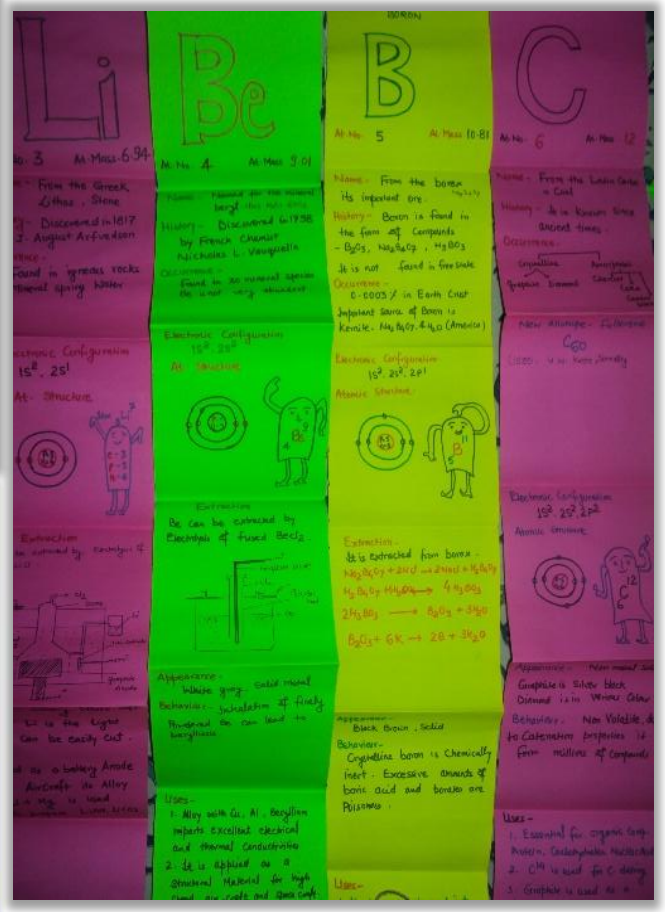
Glimpses of Master Trainer Activities (2022-23)



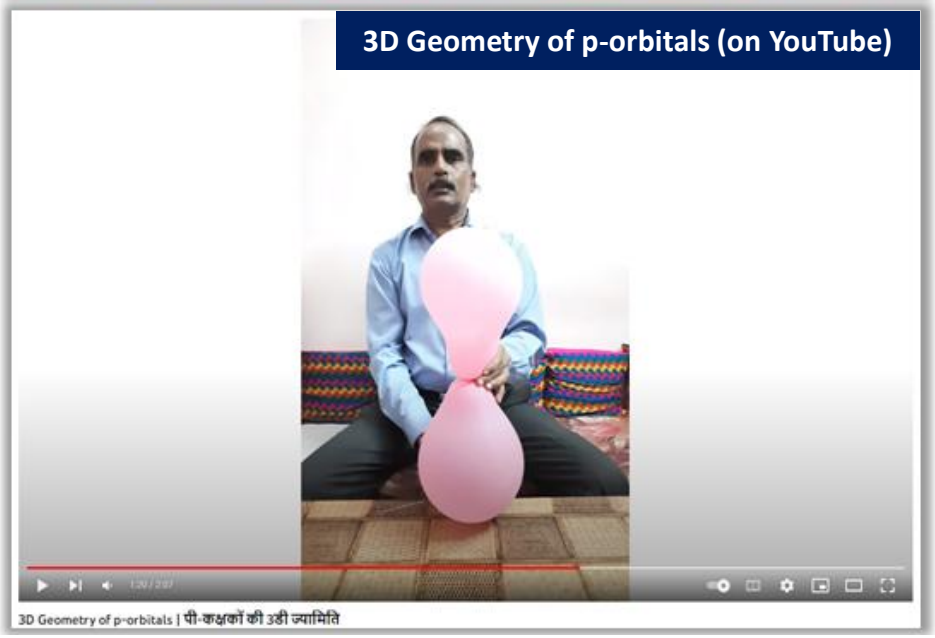
Use of Teaching Aids

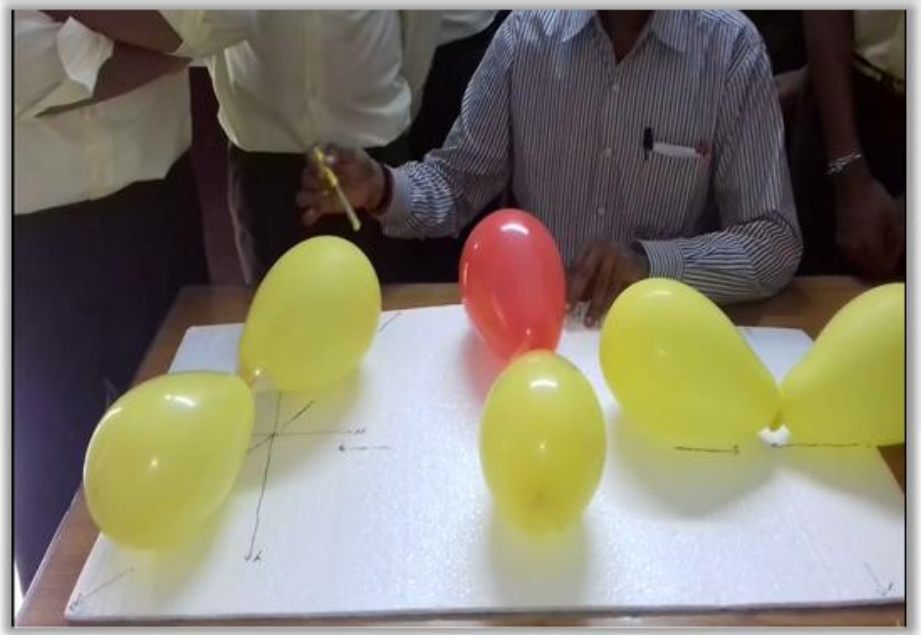


Molecular Geometry of Organic Compounds (on YouTube)

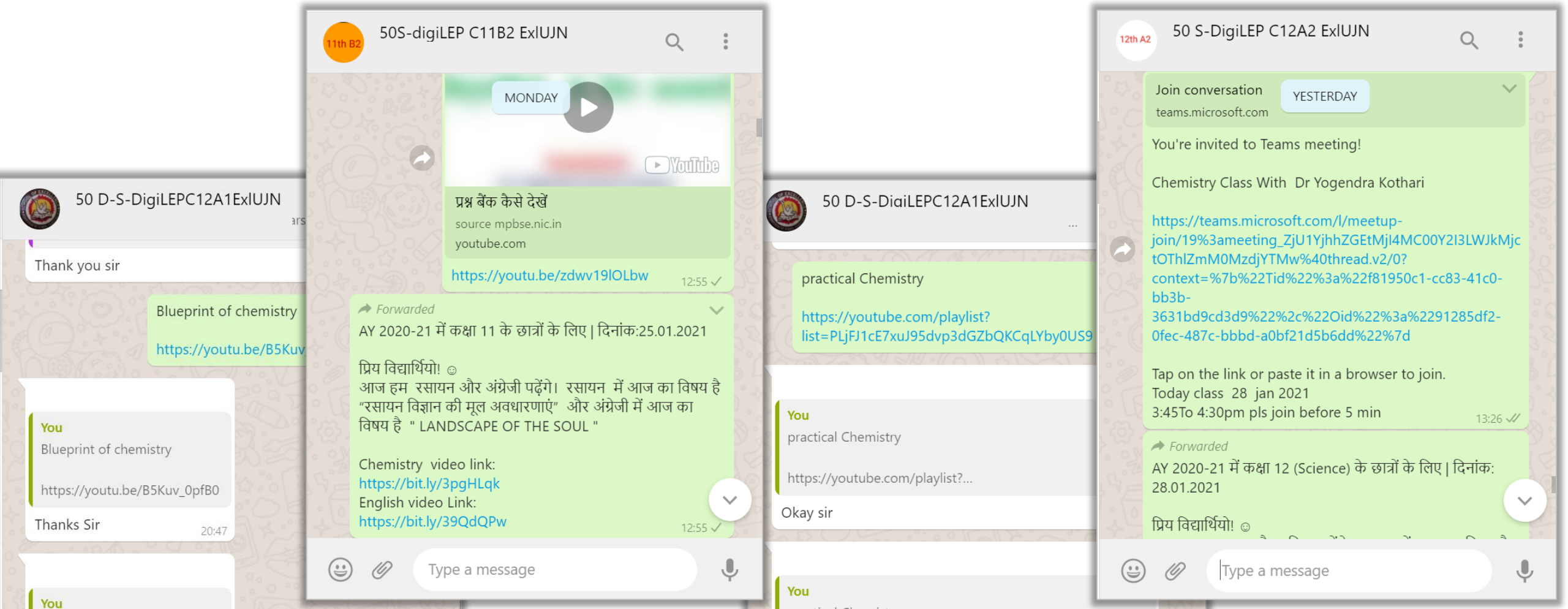


3D Geometry of p-orbitals (on YouTube)





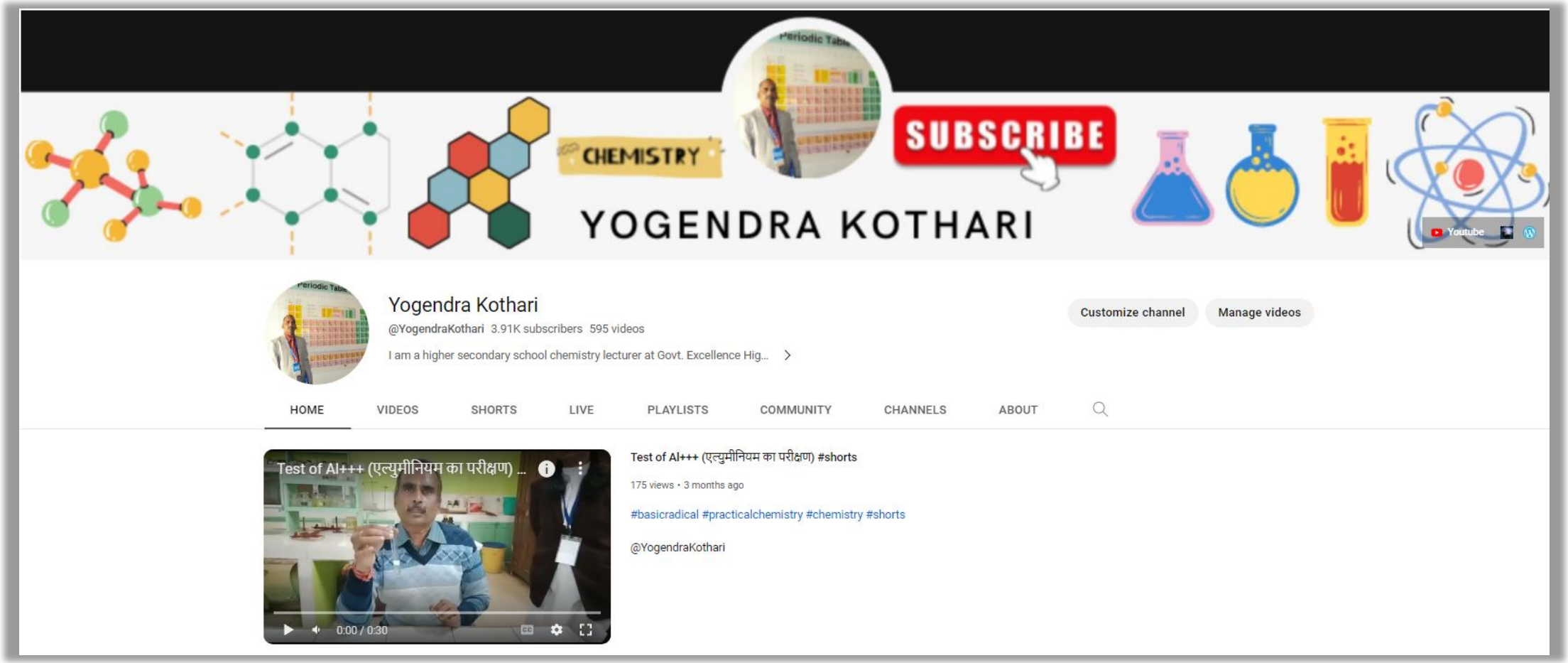
Actively Involved in DigiLEP("Digital Learning Enhancement Programme")



Source: Images from Official DigiLEP WhatsApp group

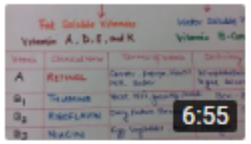
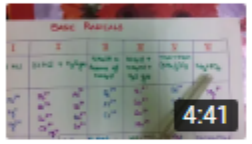
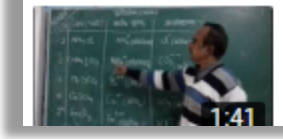
My YouTube Channel: Vision

- Create engaging Chemistry videos using teaching aids & technology to make learning fun
- Bridging Digital Divide, as the videos can be accessed by anyone, any where, any time with internet connections



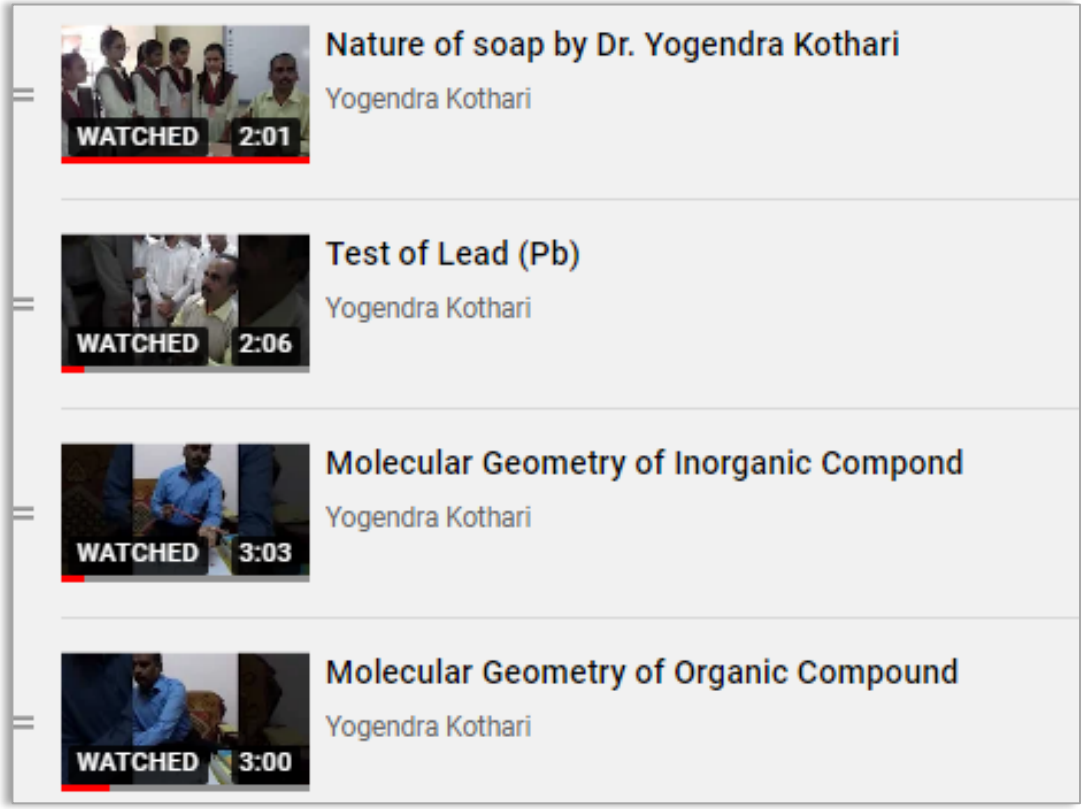
Source: Images from Youtube.com

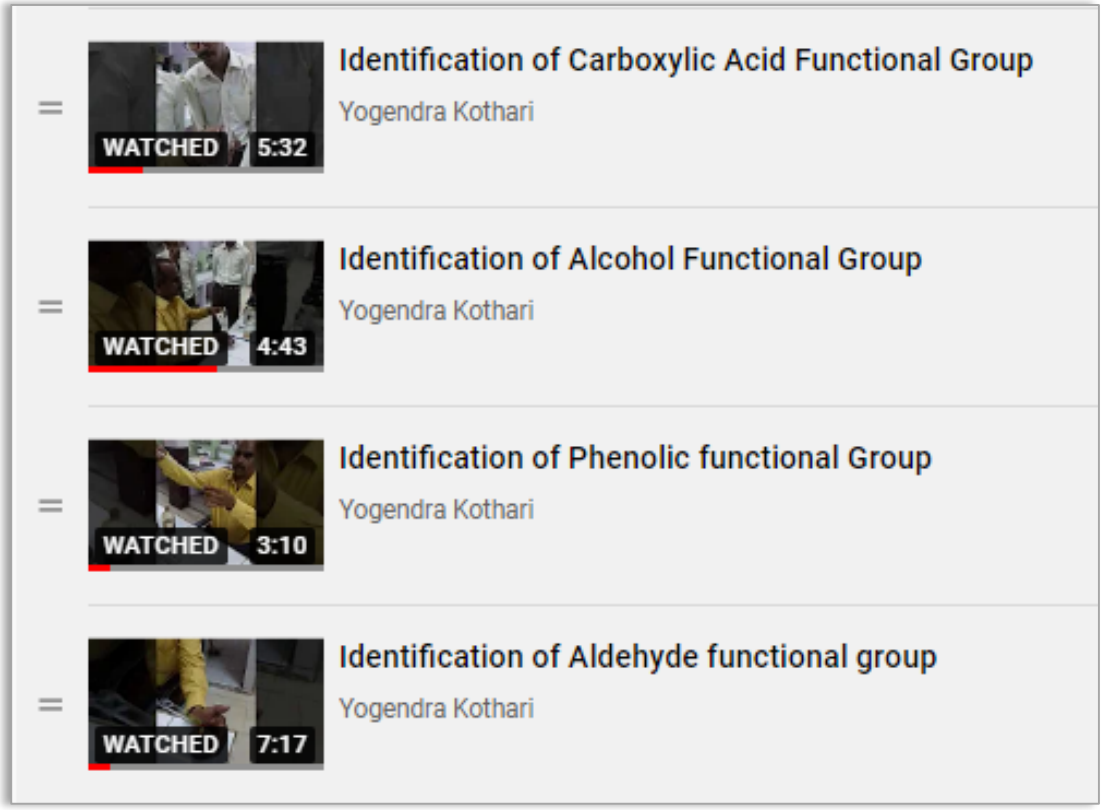
My YouTube Channel: Most Viewed Lessons

Video	Visibility	Date	Views ↓
 VITAMINS and Deficiency Diseases Biomolecules, Chemistry XII	Public	Dec 27, 2019 Published	264,742
 Paper Chromatography Separation of color from ink by chromatography : a beginner's guide Like and Share the video. Subscribe to the channel for mor...	Public	Jul 18, 2018 Published	44,829
 Basic Radicals and Group Reagent Chemistry practical, XII, XI	Public	Feb 7, 2020 Published	38,421
 T.S.Of Monocot stem by Dr. Yogendra Kothari Tissue in Monocot stem Like and Share the video Subscribe to the channel for more interesting videos on Chemistry. The videos ar...	Public	Aug 6, 2018 Published	24,287
 Test of Basic radical : NH4+ Test of the Ammonium Radical which is a basic radical. Like and Share the video Subscribe to the channel for more interesting...	Public	Nov 26, 2018 Published	19,917
 अम्लीय तथा क्षारीय मूलक Add description	Public	Nov 8, 2021 Published	16,201

Source: Images from Youtube.com

Practical Chemistry Videos are helpful in COVID time





Source: Images from Youtube.com

Community Development & Promoting Health, Well Being

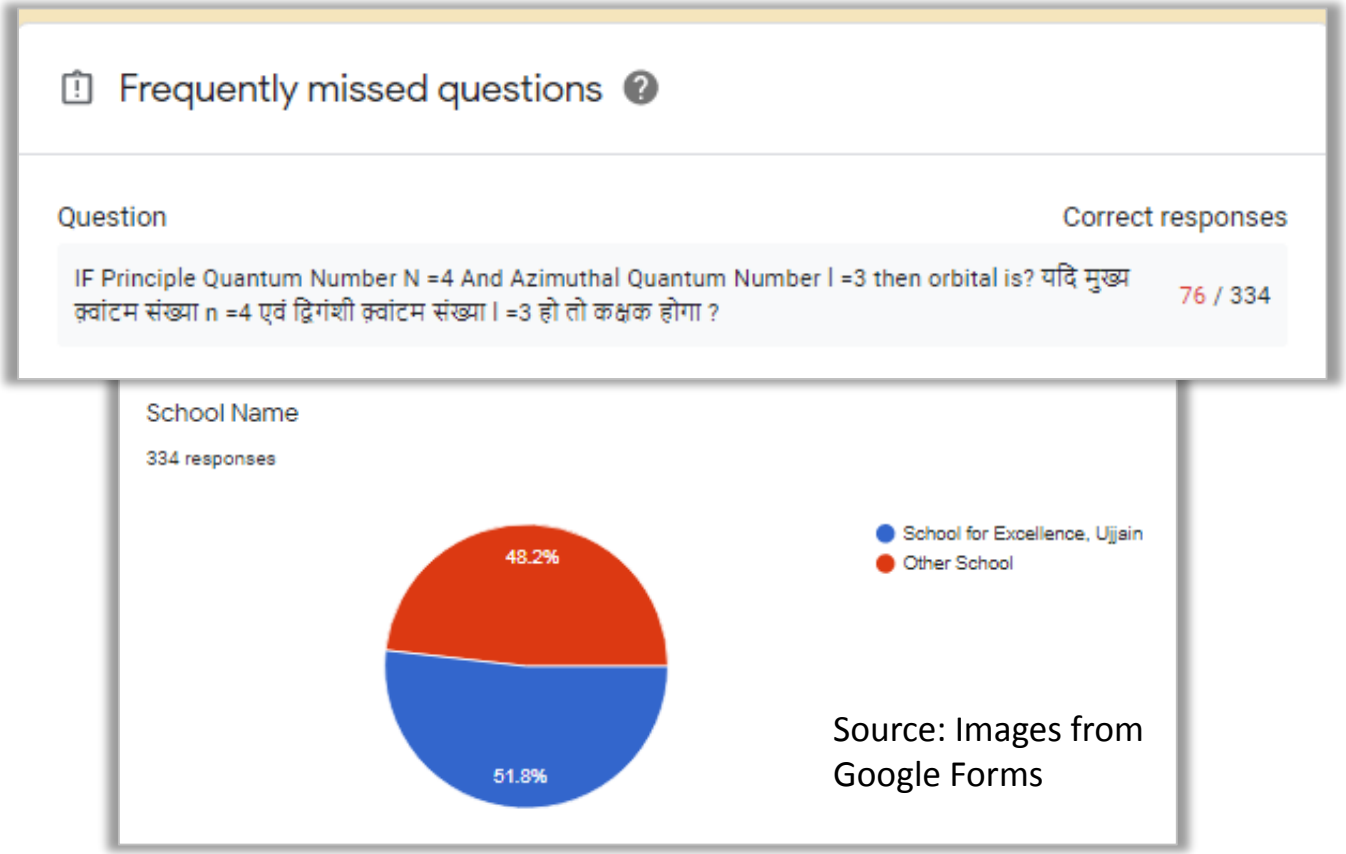
- Prepared videos which promotes health and well-being of the community
- Videos for counselling students to prepare for examination which helps to avoid tensions, last minute hustle and keep them mentally refreshed before examination

Source: Images from Youtube.com

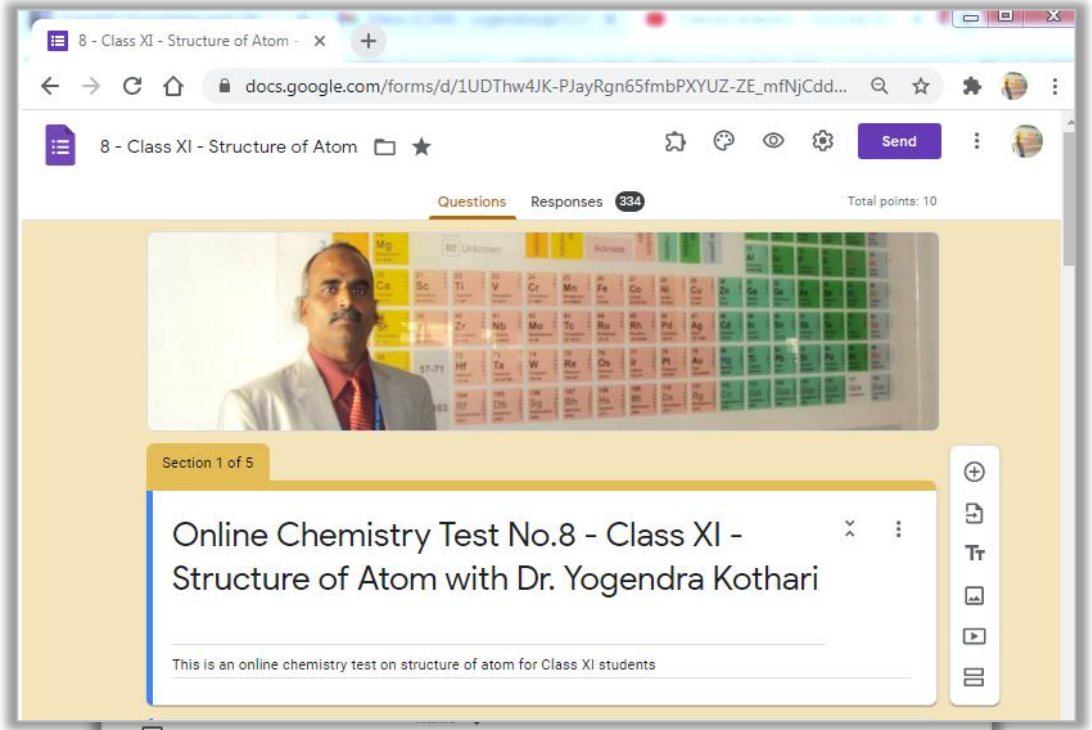
- More than **180 students** taught by me received scholarship for purchasing **laptop under CM Encouragement Programme**.
  For those students, laptop has played a key role for further studies. These students are excelling in their life and are contributing towards the **development of nation and society**

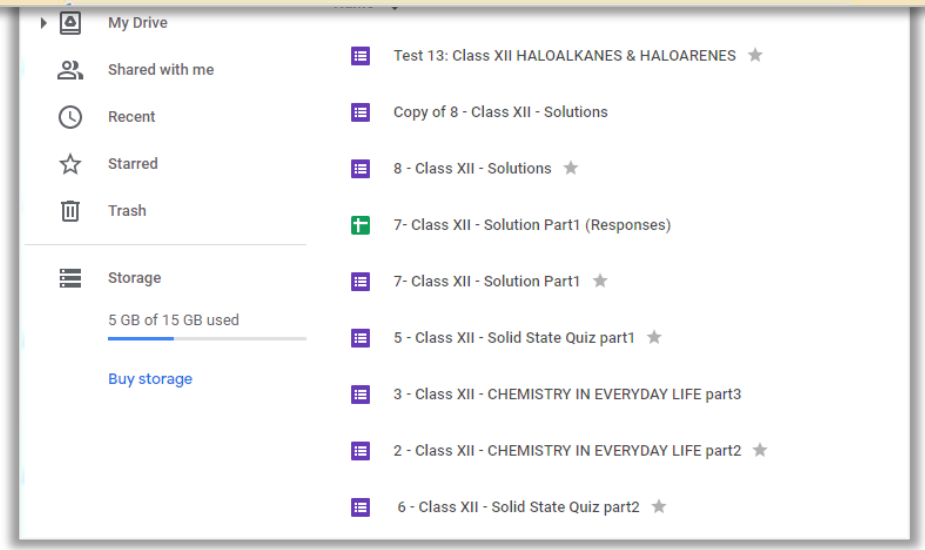
Online Assignment : Google Forms

- Prepared Online Chemistry Tests for students on Google Forms platform
- **Analytics available, which is the most difficult question for students**



Source: Images from Google Forms





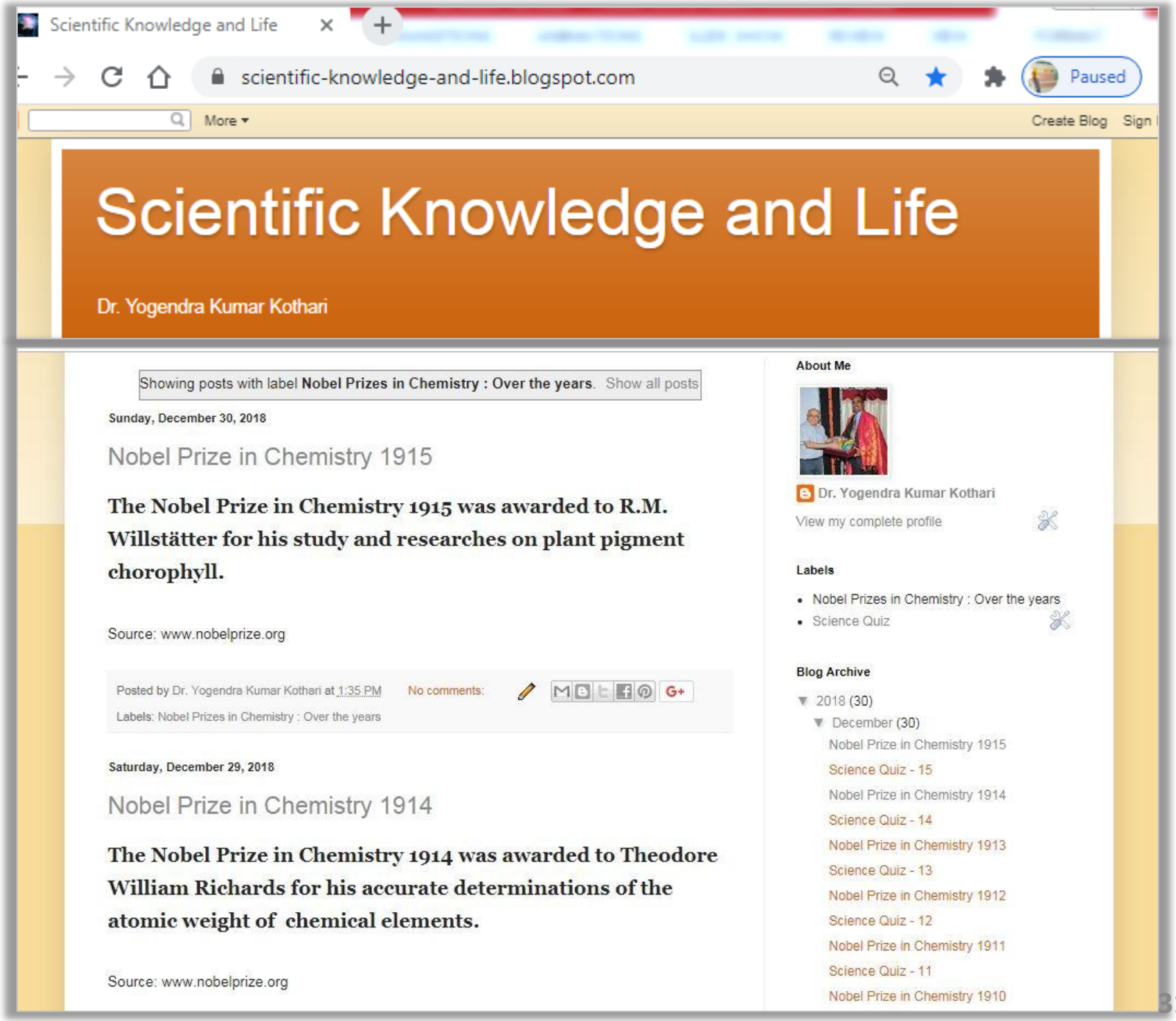
My Blog

Started my blog in **2016** on Google blogger titled "**Scientific Knowledge and Life**" which aims to provide three important category of information disseminations:

1. Science Quiz

2. Scientists and their contributions

3. Nobel Prize in Chemistry



Tele Teacher

- Appointed as Tele Teacher by Directorate of Public Instructions, Bhopal
- Involved in development of **digital coursework & presentations** which have been recorded and has been projected to students across Madhya Pradesh state
- These have been viewed by different students across the state. Some key examples are:

Meetings	
August 2013	Tele Teachers Training
June 2014	Tele Teachers Meeting

Live Telecast in Virtual Class	
November 2013	pH calculation and importance
November 2013	Baking Soda, Gypsum and Plaster of Paris
January 2014	Polymers

Virtual Class: School for Excellence, Ujjain

- Integrated Virtual Classes in the curriculum which **improved student learning** and **develop imagination, creativity & Higher order thinking skills**

- Convener for years 2014 to 2016, instrumental in adoption of virtual class

Student Participation in Rural IT Quiz

Mentored students in Rural IT Quiz organized by Karnataka Government and TCS

Student Qualified the Quiz

Fwd: Rural IT Quiz - Congratulations

Inbox ×

Kanishk Jain ... Thu, Jan 28, 9:11 PM (20 hours ago)

to me

Hi,

Congratulations! Sharing the Amazon Gift voucher for being the Rural IT Quiz Madhya Pradesh finalist. Please use the voucher at the earliest.

Up Skilling Myself in ICT areas: Courses

- DIKSHA Courses
  - CM Rise (4 courses)
  - Nishtha 2.0 modules by MP Education Department (16 courses)
- TESS101x: Enhancing teacher education through OER on edX platform
- CIET-NCERT training courses
  - Digital Tools for Teaching, Learning and Assessment of Specific Subjects
  - Multimedia Resources for Teaching, Learning and Assessment
  - Digital Pedagogy
  - Animation as Digital Resource for Teaching and Learning
  - Open Educational Resources (OER) and Licenses
- Cyber Security
  - Orientation of the Cyber Ambassadors by CIET-NCERT and Cyber Peace Foundation
- Space Technology & Applications by ISRO and IIRS, Dehradun

Conferences and Quizzes Attended: Up Skilling Myself in ICT areas

Conferences Attended	Organized By
Science Education Meet, Madhya Pradesh Vigyan Sabha (MPVS - 2021)	IIT Indore, MPCST, Vigyan Bharati
Global Women's Breakfast (GWB) – 2023, 2022	IUPAC
Artificial Intelligence (AI) for All and AI Aware Program	Intel, Digital India
National Convention of Chemistry Teachers of India (NCCT – 2022)	Association of Chemistry Teachers (ACT), India and Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore

Quiz Attended	Organized By
Annular Solar Eclipse	Vigyan Prasar and MyGov
Online Science Quiz	VIPNET Clubs, Vigyan Prasar
IUPAC Periodic Table Challenge	IUPAC
World Teachers' Quiz	TCS ION, Teacher Tribe World
Online Astronomy Quiz	VIPNET Clubs, Vigyan Prasar

Webinars Attended: Up Skilling Myself in ICT areas

Webinar Attended	Organized By
National Webinar on Features of **ChemDraw** and Greener Aspects of Drug Discovery	Homi Bhabha Centre for Science Education (TIFR), Mumbai
National Webinar on **Chemistry Education**	Department of Chemistry, Pandu College and ACT
Emerging Trends in **Chemistry Education** and Research (ETCER)"	Wilson College and University of Mumbai
Development of an Instructional Tool through Design-based Research	Centre of Research Methods, University of Delhi
National Convention for Chemistry Teachers (NCCT – 2020)	Homi Bhabha Centre for Science Education (TIFR), Mumbai And Association of Chemistry Teachers (ACT)
International Web-Workshop on Learner's Alternative Conceptions	Quantum Vault and Association of Chemistry Teachers (ACT)
National Webinar on **Open Teaching and Learning** : A Pathway to transform Higher Education	IIS University, Jaipur

Student Participation in Science Competitions

- Established science clubs in Schools
- These science clubs are a starting point to enhance and motivate students' interests outside of classroom into a whole new world of learning and development
- Guided students in selecting topics for these competitions and also mentored them in **making presentations, videos, other materials using ICT tools**
- Mentored more than **5000** students in my teaching career for various school projects

Competition	# of Students Mentored
National/ State Children Science Congress	100
National/ State Science Seminar	30
INSPIRE Award	20
National/ State Science Drama	80
Jawaharlal Nehru National Science Exhibition	2
Intel IRIS Science Fair	2
Western India Science Fair	45
India International Science Festival	9
Others	50
TOTAL	**338**

Students' Success Stories

अनेन जन्म सम्प्राप्त कर्म बन्ध विदाहिने ।

आत्म ज्ञान प्रदानेन तस्मै श्री गुरूवे नमः।।

The place of Guru is paramount in life. Life is incomplete without the knowledge of Guru. Chemistry is the oldest subject in the world. The knowledge of this ancient subject serves as vitality for the life of a student like me. I have imbibed this Pranasudha of chemistry in my life through Guruvar Dr. Yogendra Kumar Kothari Sir. It is from his teaching experience that I have got the privilege of getting success on an ancient subject like chemistry. This success has been possible only through mock tests, practical work and lectures run on his YouTube channel. I fully convey the credit of this success to Dr. Yogendra Kumar Kothari sir and will always be grateful to him for this.convey the credit of this success to Dr. Yogendra Kumar Kothari sir and will always be grateful to him for this.

Heartfelt thanks.

Akshat Joshi

Class 12th

Year 2020-2021

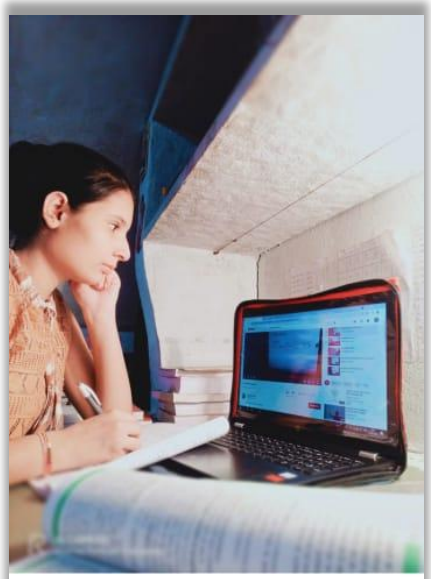
I watch all the video lectures by Dr. Yogendra Kumar Kothari since the last lockdown on his YouTube channel named Yogendra Kothari. His video lectures on chemistry in this pandemic situation helped me to complete my 12th chemistry course. Kothari sir post 3-5 videos in a week for English medium as well as Hindi medium students. Apart from the study lectures he also posts new updates about the exam, exam pattern and all. He also posts chemistry lectures for 11th class students. All these video lectures are easy to understand and learn. These videos are beneficial for your exam as well as for your knowledge. In these videos sir explain about the basic concepts and also explain their in-depth analysis and if any student has any kind of doubt then he/she should Have to comment on kothari sir's video, sir clear all doubts by replying on doubt related comments. After completion of a topic sir also post a test to get hold on this topic. These lectures are very useful for our knowledge and I love to study by these video lectures and also recommend these videos for board and competitive exams preparation.

YouTube Channel link of Dr. Y.K. Kothari Sir
https://www.youtube.com/channel/UCuruOfS9DdoeUkS6uqMwvUg

Shreyas Badodkar

President of Science Club,

Govt. School For Excellence, Madhav Nagar, Ujjain



We have struggled a lot over the year 2020-21. The teacher also supported a lot. Due to the pandemic, our teacher got us to study online. Like Honorable Dr. Yogendra Kothari Sir. Make sure to study online. He had helped us a lot by sending videos of topics, taking weekly tests, etc.We also studied with full hard work and thought of illuminating the name of the teachers. We thank you that we continued our studies even during this pandemic. This knowledge will help us in future also.

Thank you sir . 🙏🙏.
✍️✍️ Poonam Carpenter.
✨✨ Class 12th
✨✨ Year 2021

Students' engagements in various science activities

साइंस मॉडल एक्जीबिशन में बॉर्डर सिक्युरिटी सिस्टम पुरस्कृत

उज्जैन @ पत्रिका. एलएनसीटी इंदौर में आयोजित साइंस मॉडल एक्जीबिशन में उत्कृष्ट उमावि माधवनगर उज्जैन के 28 विद्यार्थियों ने सहभागिता की, इनमें से यशपालसिंह तोमर एवं राजीव आंजना ने बॉर्डर सिक्युरिटी सिस्टम पर पुरस्कार प्राप्त किया है। प्राचार्य भरत व्यास ने बताया कि डॉ. योगेंद्रकुमार कोठारी के मार्गदर्शन में मॉडल प्रस्तुत कर बच्चों ने पुरस्कार के रूप में 21 हजार रुपए एवं प्रमाण पत्र प्राप्त किया।

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News in Brief

Akshat bags 'Science Talent Award'

Government Madhav Nagar School of Excellence student Akshat Joshi was awarded 'Madhya Pradesh Vigyan Pratibha Samman'. MP Council for Science and Technology, Bhopal conferred the award carrying cash of Rs 2501 and a citation to him. Principal Bharat Vyas informed that Akshat's selection was made in view of his research paper presented during National Science Seminar-2018 on industrial revolution 4.0, possibilities and challenges which was organised by the National Council of Science Museum Kolkata at Vishveshwarya Industrial Technology Museum, Bengaluru. He prepared this paper under the guidance of Yogendra Kumar Kothari.

जिला स्तरीय बाल विज्ञान कांग्रेस : फूल-पत्तियों से रंग, स्मार्ट रोड बनाने जैसी 30 परियोजना प्रस्तुत की

उज्जैन। नईदुनिया प्रतिनिधि

शासकीय उत्कृष्ट विद्यालय माधवनगर में रविवार को जिला स्तरीय बाल विज्ञान कांग्रेस का आयोजन हुआ। इसमें फूल-पत्तियों से रंग, स्मार्ट रोड, ड्रेनेज सिस्टम बनाने जैसी 30 परियोजनाएं चयनित विद्यार्थियों ने प्रस्तुत की।

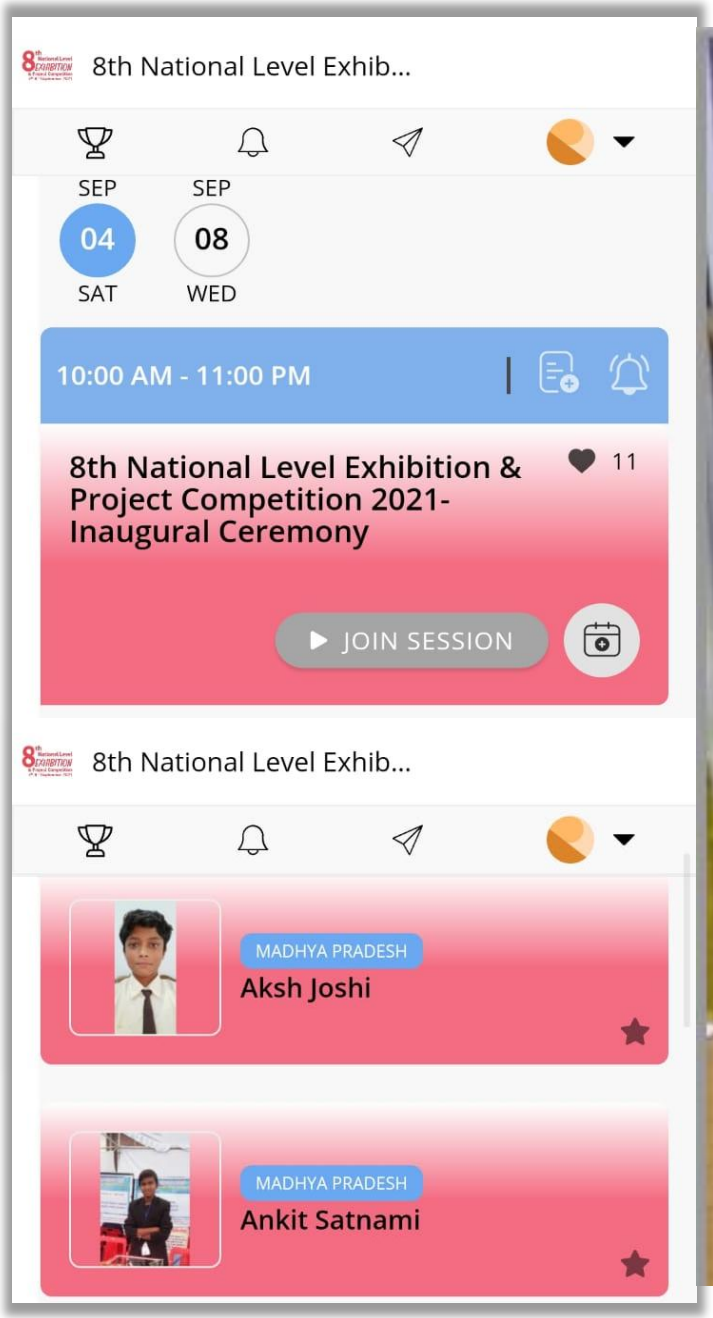
प्रस्तुतीकरण के बाद राज्य स्तर के लिए पांच परियोजनाओं का चयन किया गया। जूनियर वर्ग में मॉडल स्कूल के क्रिश पांडेय, सीनियर वर्ग में विजयाराजे कन्या हायर सेकेंडरी स्कूल की छात्रा ईशा तोमर का चयन सर्वश्रेष्ठ परियोजना बतौर हुआ। इन दोनों के अलावा सन

बाल विज्ञान कांग्रेस में परियोजना प्रस्तुत करती छात्रा। ● नईदुनिया

ईशा और क्रिश रहे सर्वश्रेष्ठ

ब्लूम स्कूल के छात्र आर्यन पर
उत्कृष्ट विद्यालय माधवनगर के
आलोक मनावत, दशहरा मैदान
हायर सेकेंडरी स्कूल की छात्रा
राठौर का चयन भी किया गया है।
समन्वयक राजेश राठौर ने बताया
आयोजन राष्ट्रीय विज्ञान एवं प्रौद्यो
संचार परिषद नईदिल्ली की ओ
किया गया। निर्णायक शिक्षाविद् वि
पारस्कर, अर्चना जांगलवा, ज्योति
थीं। स्वागत अकादमिक समन्वयक
योगेंद्र कोठारी ने किया। संचालन स
परिहार ने माना।

Online Presentation in National Level INSPIRE Awards MANAK

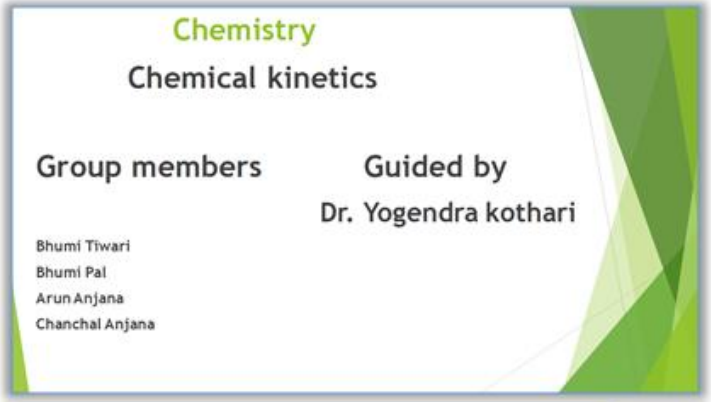


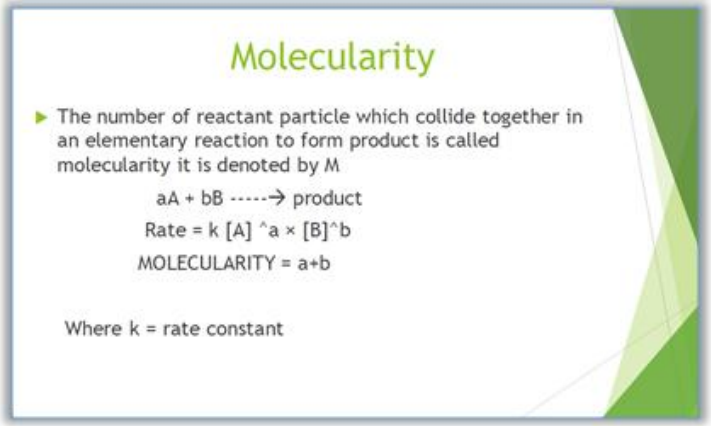

And some cause pollution

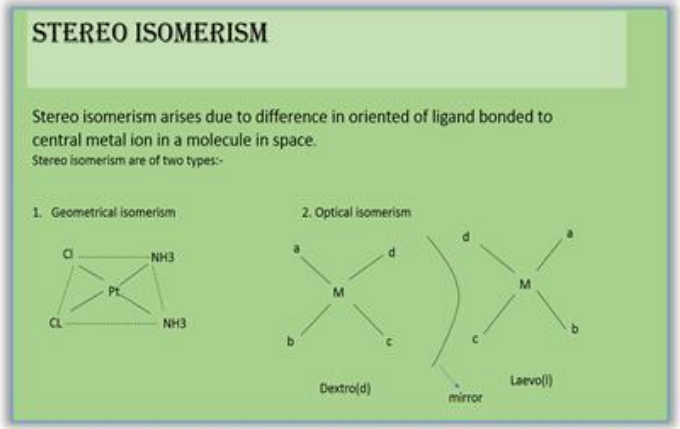

मुकुद

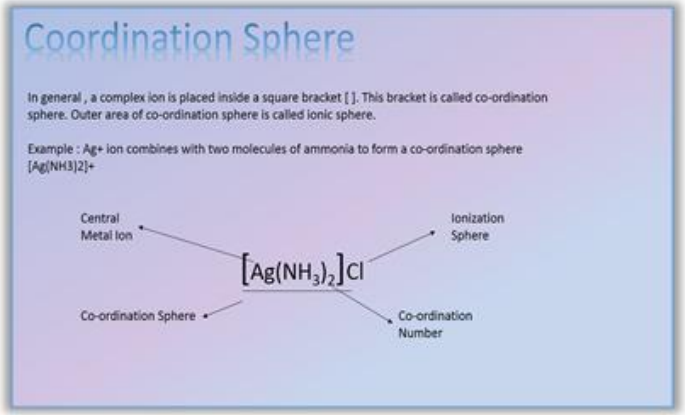

Role of Science and Technology in Swachh Bharat
Well-functioning drainage, sewage, and solid waste management in all cities and villages
Elimination of ponds in which stagnant water collects and serves as host to bacteria and mosquitoes
Installing the greater appreciation of cleanliness in all its aspects among the masses.
Indeed, taking the campaign to its logical conclusion would require replacing slums with the more spacious housing having piped water delivery

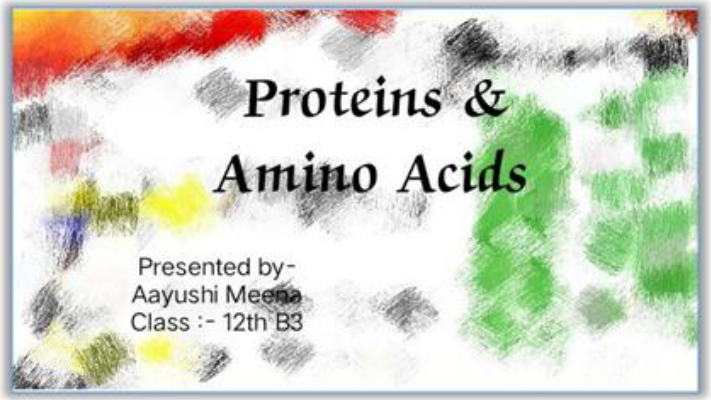
Use of ICT in Education by Students

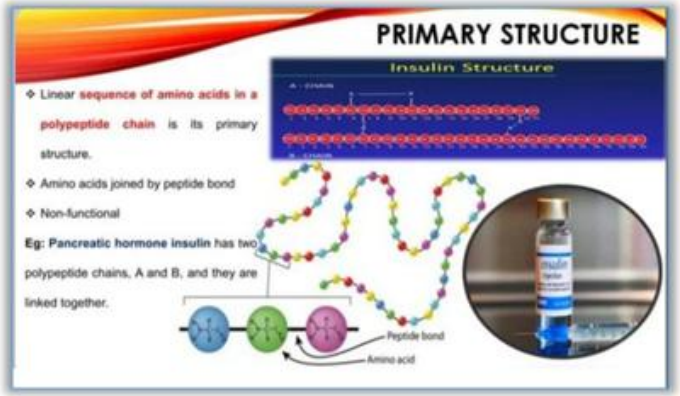


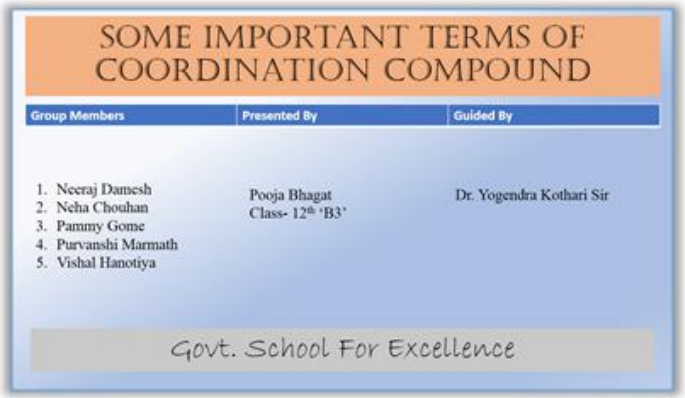




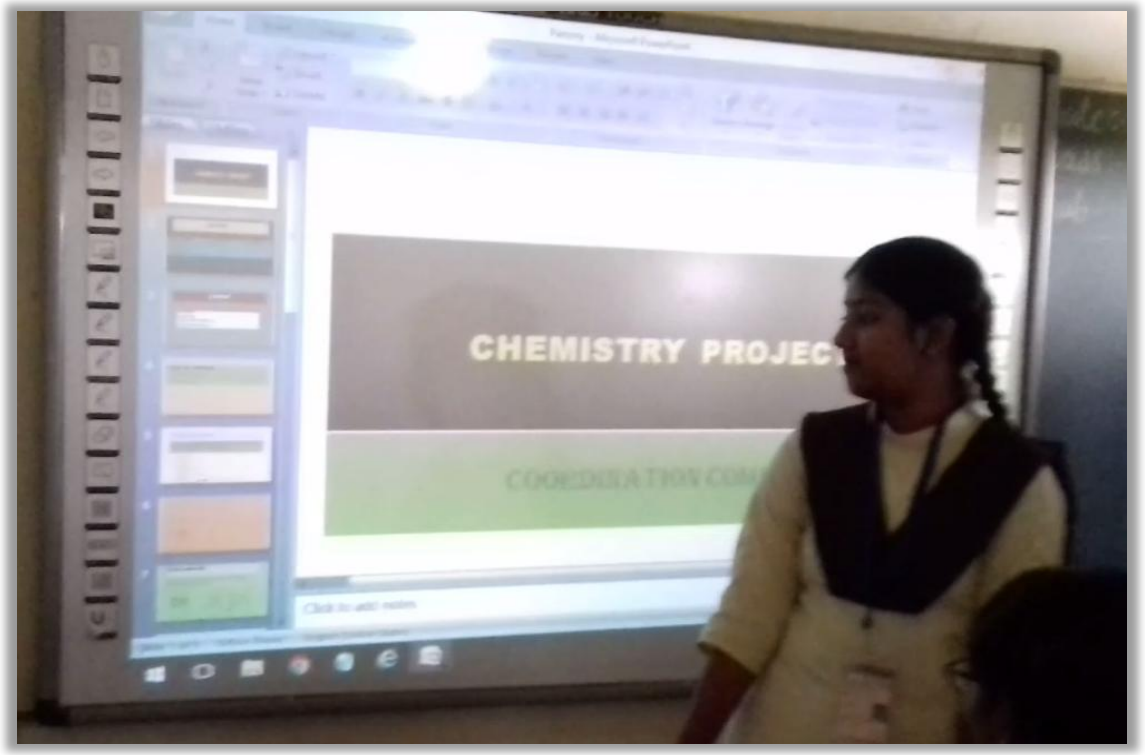


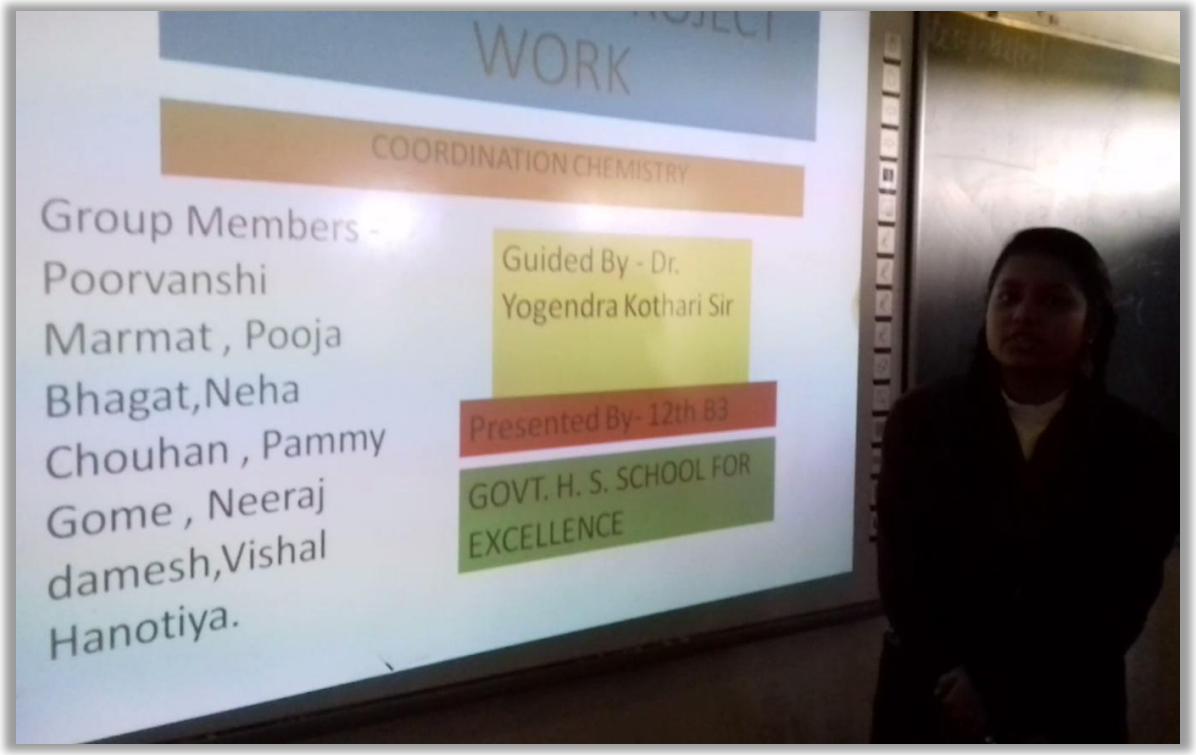






Presentation by Students





My Future Plan for ICT Integration

Integrate more **open source ICT tools** in teaching and learning

Develop **App** for teaching and learning

More innovative videos on **YouTube** which would be readily available for students and global community

Website serving my own created materials

Plan to attend trainings on **Software development and further use it**

More work with Multimedia, Simulation software's, preparation of science games

Acknowledgement

- I would like to present my sincere gratitude to

CIET-NCERT Team

School Education Department, Madhya Pradesh

District Education Officer, Ujjain

Principal and Staff of my School

My Students


SCIENCE, TECHNOLOGY AND
MATHEMATICS FOR NATION BUILDING


SCIENCE AND MATHEMATICS FOR
INCLUSIVE DEVELOPMENT

Thank You