

AMRITA
VISHWA VIDYAPEETHAM
UNIVERSITY

Products/Solutions/Expertise of C-DAC Mumbai in Smart City Domain

OLABS
www.olabs.edu.in

About OLABs

Project Title

Online Labs (OLabs) for school experiments

Participating Organizations

C-DAC Mumbai & Amrita Vishwa Vidyapeetham

Target Audience

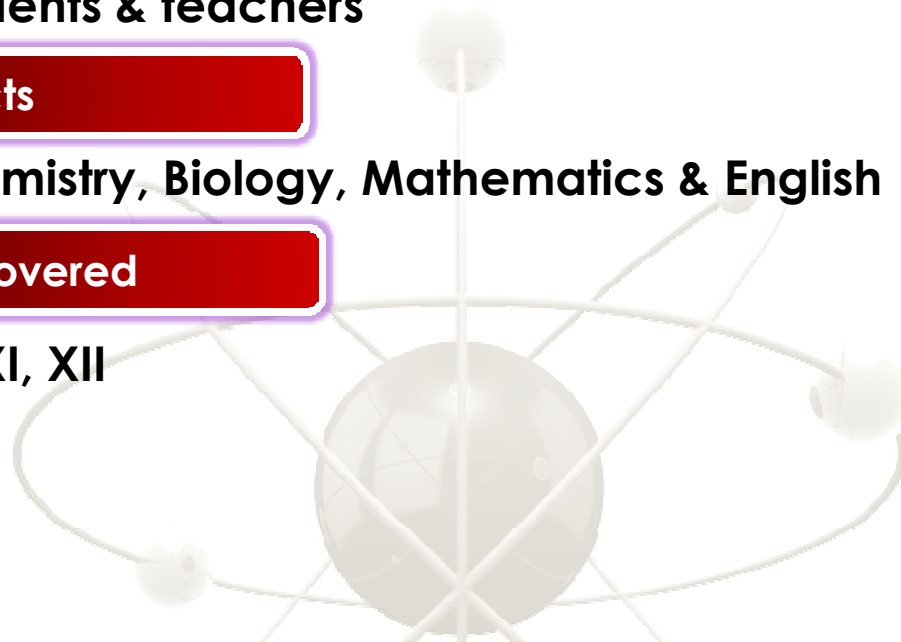
Schools, students & teachers

Subjects

Physics, Chemistry, Biology, Mathematics & English

Classes Covered

Class IX, X, XI, XII

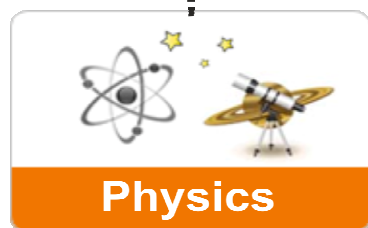


Background

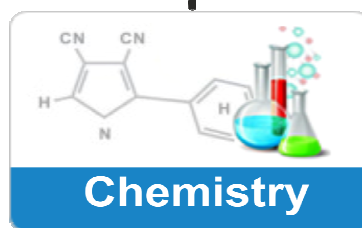
- Experiments and assignments aid learning in several ways and schools are increasingly getting oriented with more practical focus.
- Experiments have not received their due importance and emphasis in science study in their schools. The reasons can be:
 - Infrastructure required for conducting various experiments is not always available in all schools
 - In view of difficult logistics involved in assessing experimental work for large number of school students, the assessment of experiments has not been as serious as that of the theory part of the curriculum
- Olabs is partial attempt to altercate these problems and enhance the practical component in schools

OLabs Lab Details

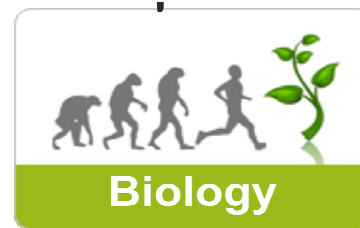
Experiment/Lab Details



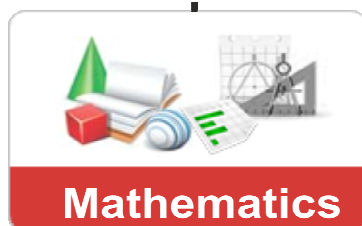
54



46



36



25



12

Available in

- English
- हिंदी
- മലയാളം
- मराठी

Total Experiments : 173

Salient Features

- Web based access
- All labs are available for free access on <http://www.olabs.edu.in> .
- Experiments and evaluation component aligned to CBSE curriculum.
- Interactive Simulations which model real life environment and behavior.
- Includes features such as recording observations, plotting graphs, calculations, generating lab sheet, etc which enhance the overall learning experiment.
- DVD and Windows installer version available on request.

OLabs – Innovative features

- Authentic content suitable for learners' need
- Complete ecosystem of learning for each experiment/lab
- Aligned to CBSE curriculum
- Various mode of access to Olabs – Web, Windows Installer, Live DVD
- English Lab – a novel concept
- Usage in Multiple Scenarios
 - a. For demonstration, explanation
 - b. For self-learning, revision & exploration
 - c. Pre and Post Lab

Technologies & Standards

- **Process model** - ISO 9001:2008 R&D process model of SDG, CDAC Mumbai
- **Technologies**
 - Server side : JSP, Servlets, Spring, Hibernate
 - Languages: Java, PHP
 - Database : MySQL
 - Client side : Javascript, JQuery, HTML5, CSS3, Kinetic JS, Three.js, Geogebra,
 - Framework : Spring, Spring MVC, Hibernate
 - Bug tracking – MantisBT
 - Code Versioning – GIT

OLabs Homepage




ONLINE LABS

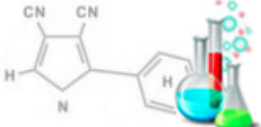
Funded by MeitY
Ministry of Electronics and Information Technology



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PHYSICS



CHEMISTRY



BIOLOGY

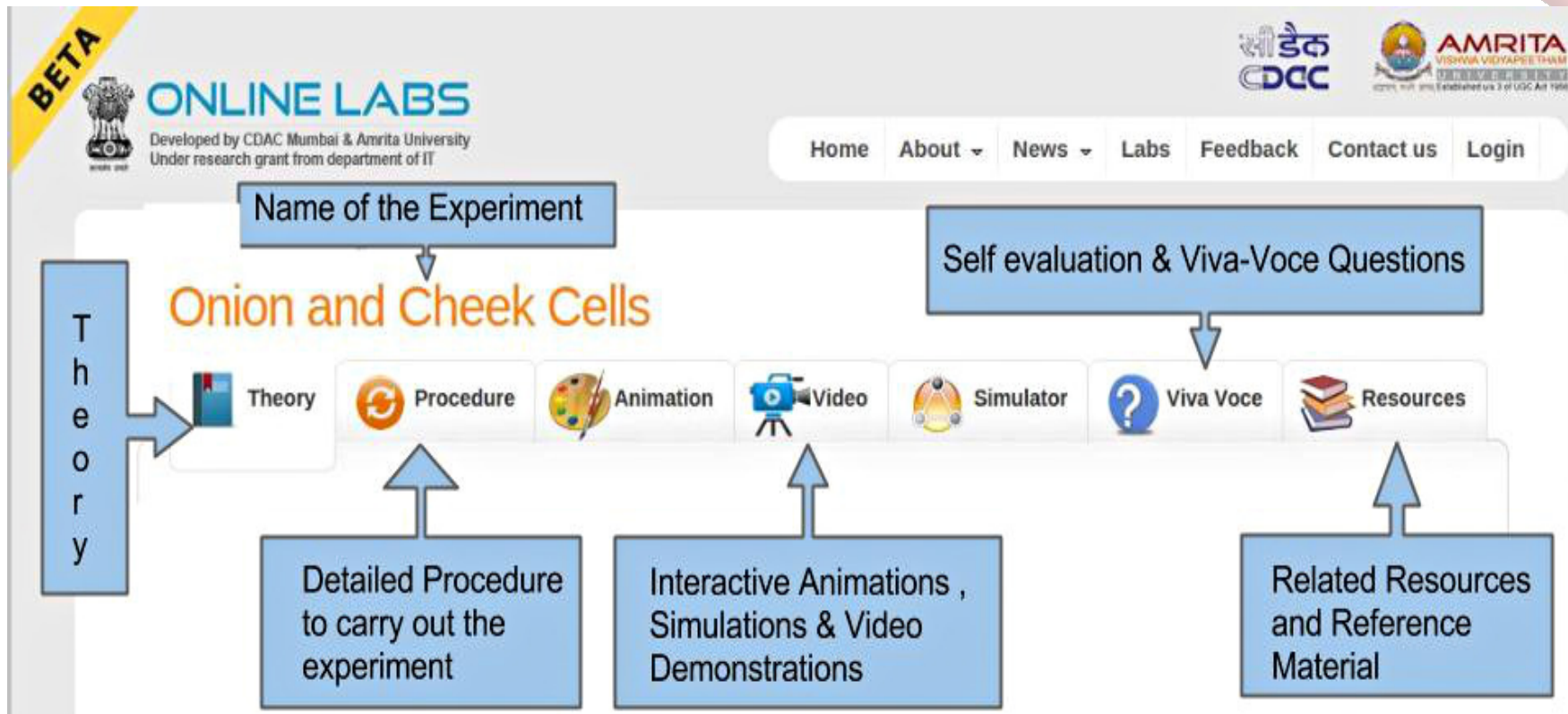


MATHS



ENGLISH

Outer Structure of an Experiment



English labs in action

Tense Conversion

Select tense

Present Perfect Continuous ▾ change to Future Continuous ▾

Sentence in Present Perfect Continuous

James has been playing a guitar.

Sentence in Future Continuous

James will be played a guitar .

Instructions Theory Hints

Feedback

Items	Result	Description	Remedy
Main Verb	✘	Wrong form of the base verb. 'play' is chosen.	Form of the base verb 'play' should be chosen according to the selected tense.
Helping Verb	✔	'helping verb' is correct.	---

Instructions

Instructions

- You will be allowed to read dictation of picture.
- You have to construct a picture from given set of objects and instructions.
- One instruction will be displayed at a time.
- As per instruction, select object from "Object flow".
- As mentioned in instruction, place the selected object at appropriate location/position by Drag/Drop.
- Click "Next" for the next instruction.
- After construction, click on "Compare" to compare your construction with the original image.

Completed Dictation Steps

Learning Prepositions of Location - PICTURE DICTATION



This is an image created by you.



This is the expected image output.



This is an image created by you.

Compare these images to see the difference.
Click on right image to toggle between your image and expected image.

Reported Speech

Part A: Punctuate the Direct Speech

Instructions Theory

Bake a cookie

" Bake a cookie " , he said .

0 2 0 0 0 0 0

Hello! Read the instructions, before proceeding.

Submit

Next

Show Answer

Mathematics labs in action

Instructions

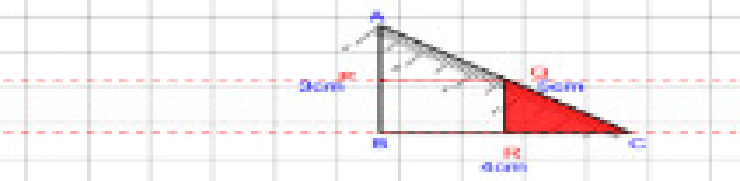
1. Activity completed successfully.
2. Please see the inference in toolbar.
3. click on → to see next screen.
4. click on ← to see previous screen.

Tools


Show Scale AB
 Show Scale BC
 Show Scale CA

Mid Point Theorem.

Workbench



1. As Angle AQP covers QCB exactly,
 Therefore, Line PQ is parallel to Line BC.
 $PQ \parallel BC$



Instructions

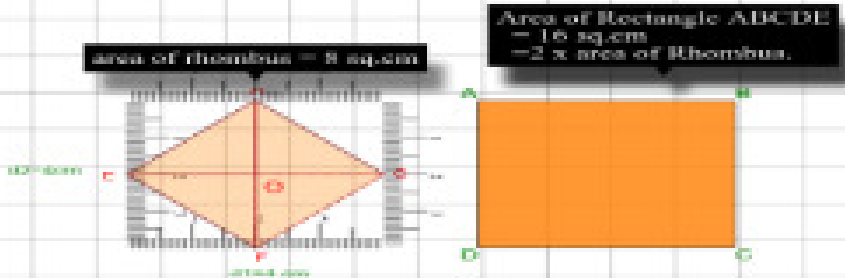
1. Activity completed successfully.
2. Please see the inference below.

Tools


Show Scale AB
 Show Scale BC
 Show Scale CD
 Show Scale AD

Area of Rhombus

Workbench



4. Area of rhombus = $\frac{1}{2}$ x area of rectangle.
 = $\frac{1}{2}$ x d_1 x d_2
 = $\frac{1}{2}$ x product of diagonals.



List of Project Awards & Achievements

- CBSE Circular & Endorsement – Feb 2013
- CBSE Circular & Endorsement – April 2016
- CSI IT Excellence Award 2013
- SKOCH Order of Merit in 2013
- NASSCOM Innovation Awards 2013 (shortlisted for Jury award)
- Presentation to Chairman at CIPS.
- OLabs launch at Good Governance week celebrations by Honourable minister of IT Shri Ravi Shankar Prasad
- Rollout of Online Labs project was accepted by Miety.

Launch of Online Labs



OLabs was launched during Good Governance week celebrations on Dec 28, 2015 by Honourable minister of IT Shri Ravi Shankar Prasad

CBSE Circular & Endorsement – Feb 2013

E-mail: director@cbseacademic.in
Website: www.cbseacademic.in

Tel: 011-23212603
23211576
Tele Fax: 011-23234324



केन्द्रीय माध्यमिक शिक्षा बोर्ड

(मानव संसाधन विकास मंत्रालय, भारत सरकार, के अधीन एक स्वायत्त संगठन)

शिक्षा सदन, 17, इन्सटिट्यूशनल क्षेत्र, राउज एवेन्यु, दिल्ली-110002.

CENTRAL BOARD OF SECONDARY EDUCATION

(An Autonomous Organization under the Union Ministry of Human Resource Development, Govt. of India)
"Shiksha Sadan", 17, Institutional Area, Rouse Avenue, Delhi-110002



CBSE/ACAD/DIR(ART&I)/2013

Dated: 16th February, 2013
Circular No. Acad-15/2013

All the Heads of Institution
Affiliated to CBSE

Subject: Roll out of Online Labs in CBSE affiliated schools across the country

Dear Principal,

Online Labs for School Experiments (OLabs) is a novel e-Learning project developed by CDAC, Mumbai and Amrita University, Kerala and based on the concept of virtual learning environment.

CBSE recommends OLabs to all the schools affiliated to the Board. For Kendriya Vidyalayas the roll out may be via ERNET, which provides network connectivity to all the Kendriya Vidyalayas. This is also to inform that OLabs is a facility which is available free of cost at www.olabs.co.in to all the schools affiliated to the Board.

Regards,

Vineet Joshi
(Chairman)

CBSE Circular – April 2016

E-mail: directoracad.cbse@nic.in
Website: www.cbseacademic.in

Tel: 011-23212603
Telefax:01123234324



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CBSE/ACAD/JD(SS)/2016

07.04.2016

Circular No. Acad.11/2016

All Heads of Institutions Affiliated to CBSE

Subject: Training of Teachers on Managing Online Lab Resources

Dear Principal

Online Labs (OLabs) for School Environment is a virtual online e-Learning initiative jointly developed by CDAC, Mumbai and Amrita University, Kollam with funding support from the Department of Electronics and Information Technology, Government of India. It has been developed to supplement the traditional physical labs and bridge the constraints of time and geographical distances. Olabs is a free resource for all schools (teachers and students) in India and is accessible free of cost on the website www.olabs.edu.in. For schools with absence or limited access internet facilities, a DVD version is also available on demand.

OLabs – Awards



CSI IT Excellence Award 2013



SKOCH Order of Merit

NASSCOM®

NASSCOM Innovation Awards 2013 (shortlisted for Jury award)

Olabs workshop at CIPS using Video Conferencing

Innovative Education Practice through OLABS (Online Labs)

Date: 28th January 2015

Objective(s):

To sensitize School Administrators and Teachers on the benefits of using Virtual Laboratory.

Speaker(s):

1. **Dr. M. SasiKumar**

Associate Director

Center for Development of Advanced Computing (CDAC)

Mumbai

[Profile of Dr. M. SasiKumar](#)

2. **Mr. Manoj Kumar Singh**

Technical Engineer

Center for Development of Advanced Computing (CDAC)

Mumbai

[Profile of Mr. Manoj Kumar Singh](#)

Participated States

- Teachers from **28** locations of **16** states have participated in the VC.
- **800** other participants were facilitated with Webinar which includes Live Chat on the VC.
- This topic has also been showcased in the Programme conducted afternoon, the same day, along with other two topics for participants from Hyderabad.
- Around 16 states participated.

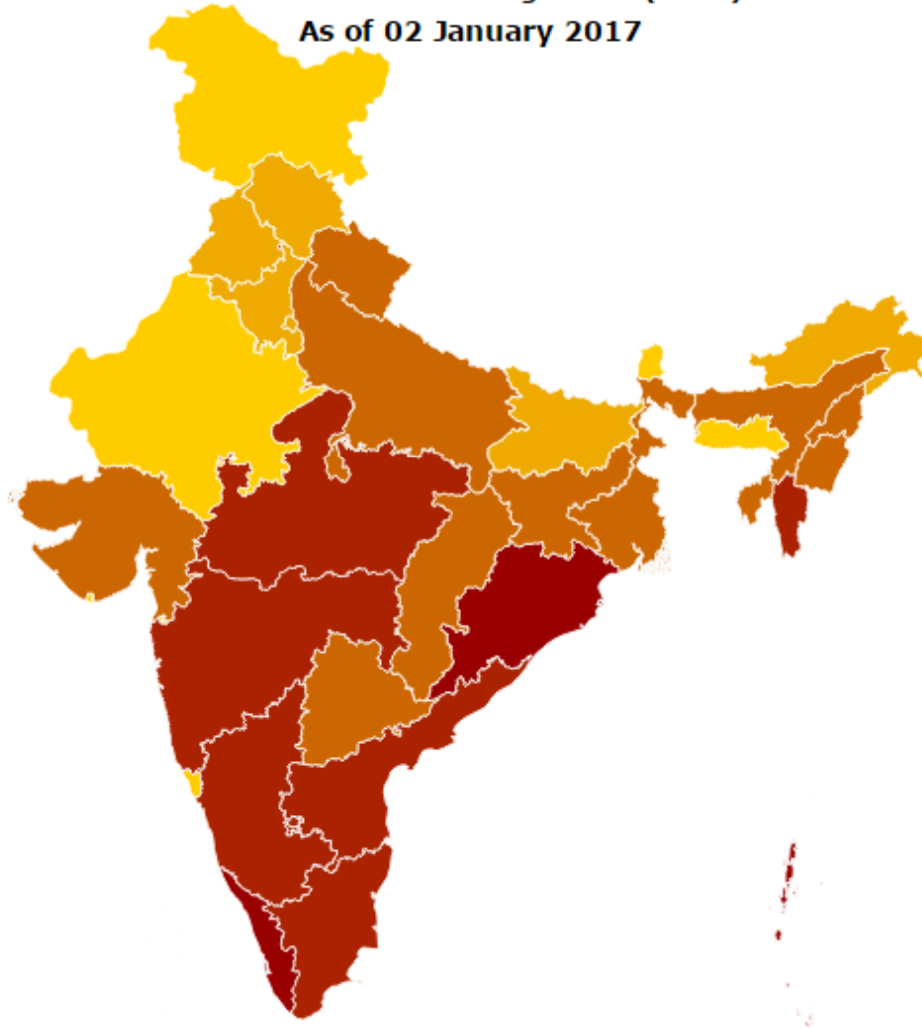


Centre for Innovations in Public Systems

(An Autonomous Organization Funded by Government of India)

OLabs Training Status

OLabs Teachers Training Status (CBSE)
As of 02 January 2017



No Training 100% Training

State	No. of teachers trained
Andaman and Nicobar Islands	120
Andhra Pradesh	178
Arunachal Pradesh	11
Assam	81
Bihar	19
Chandigarh	120
Chhattisgarh	144
Delhi	154
Gujarat	177
Himachal Pradesh	15
Haryana	115
Jharkhand	238
Karnataka	771
Kerala	3762
Maharashtra	972
Madhya Pradesh	827
Odisha	684
Punjab	94
Telangana	122
Tamil Nadu	1199
Uttar Pradesh	520
Uttarakhand	260
Manipur	7
Mizorum	4
Tripura	13
Nagaland	3
West Bengal	102
Total	10712



www.cdac.in

Thank You

प्रगत संगणन विकास केंद्र

CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING

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