



Exploring Virtual Labs for Sciences

OLabs

Online Labs for School Experiments

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AmritaCREATE

About Amrita University

Recognition

Teaching & Research Excellence



Category-1 Status
Graded Autonomy



No. 1 Private University
in India (2020)

No. 1 International
Outlook (2020)

Top 300
Clinical, Pre-clinical
& Health (2020)

Top 400
Engineering & Technology
(2020)

Top 500
Computer Science
(2020)



No. 1
International Faculty
(2020)



**Mission: Education for Life & Education for Living
Compassion-driven Research**



ONLINE LABS

Funded by MeitY

Ministry of Electronics and Information Technology



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Languages

A NEW WAY
to sharpen your English skills

Olab English

PHYSICS

CHEMISTRY

BIOLOGY

MATHS

ENGLISH



MeitY
Government of India

Aligned with **NCERT** syllabus
Follows key principles of **NEP 2020**

215+ Experiments

Class IX, X, XI, XII



Physics (54)



Chemistry (46)



Biology (36)

Class VI, VII, VIII

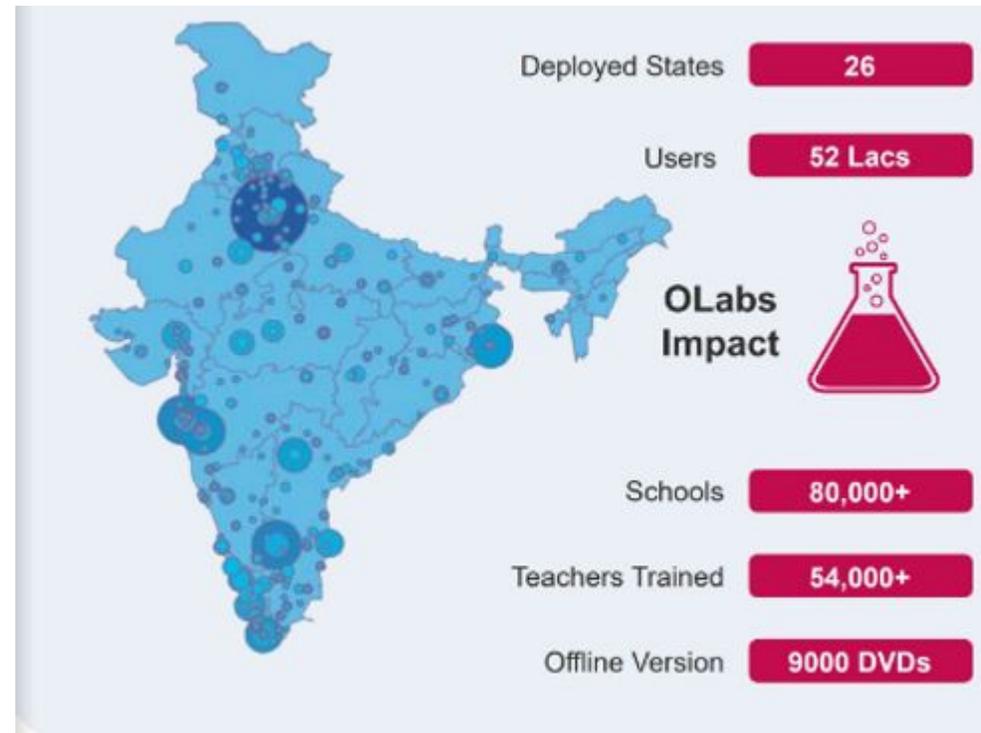


Science (13)

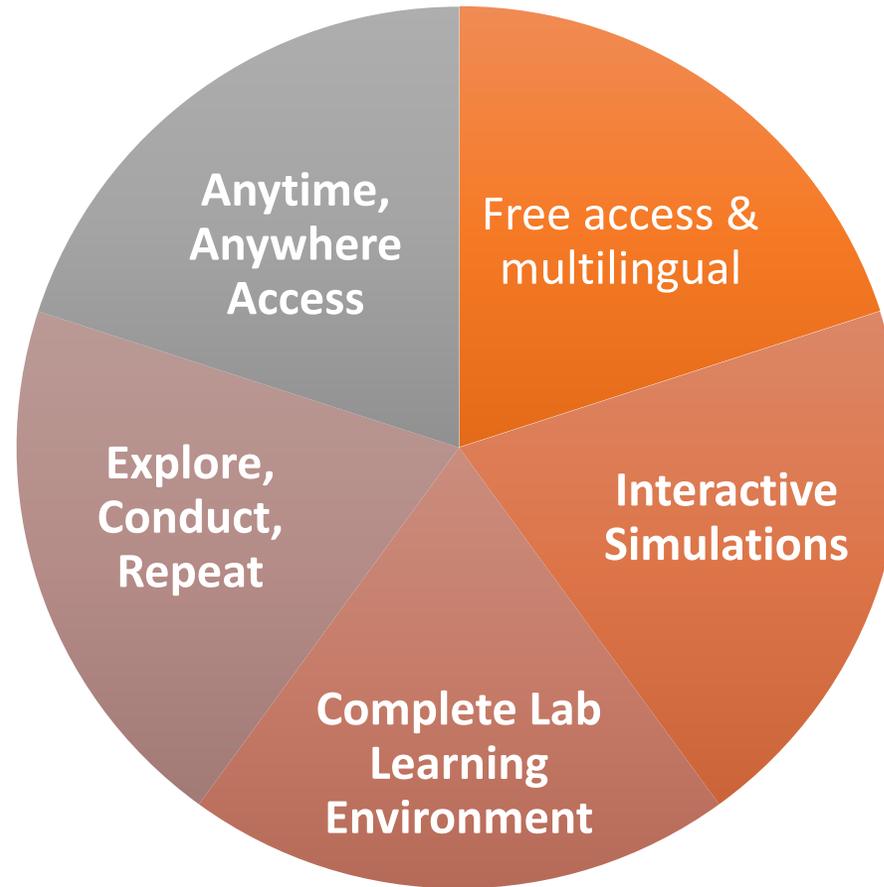


AMRITA
VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY

- Online Labs (OLabs) Vision**
- World's **largest** platform for **lab** experiments for **schools**
 - **Animations**, Interactive **Simulations** and Lab Videos
 - Allows for **exploratory** learning



Online Labs for School Experiments



E-Content of a Lab – A complete lab experience



Each experiment has sections covering the following:

- **Theory** – objective, concept related to the experiment, expected learning outcomes.
- **Procedure** – explains how to perform the real lab procedure and the simulator procedure.
- **Animation/Video** - teachers may use it to demonstrate the experiment as a pre-lab or post-lab session.
- **Simulation** – learner may use simulation to practise experiments. The simulations are accurate.
- **Viva Voce** – Questions on related lab for self-assessment
- **Resources** – To refer to a topic in depth.
- **Feedback:** Very important for our continuous and constant improvement.

Simple Pendulum

Solution Controls

Select Environment

- earth
- moon
- uranus
- saturn
- jupiter

Select Wire

Twine Thread

Pendulum Length(m): 1

0.5 1.5

Change Diameter(mm): 15

10 25

Show Protractor

Answer

Play/Pause

Reset



Simple Pendulum

Solution Controls

Select Environment

- earth
- Square
- Sphere
- Clock Pendulum
- Square
- Rectangle

Select Wire

Twine Thread

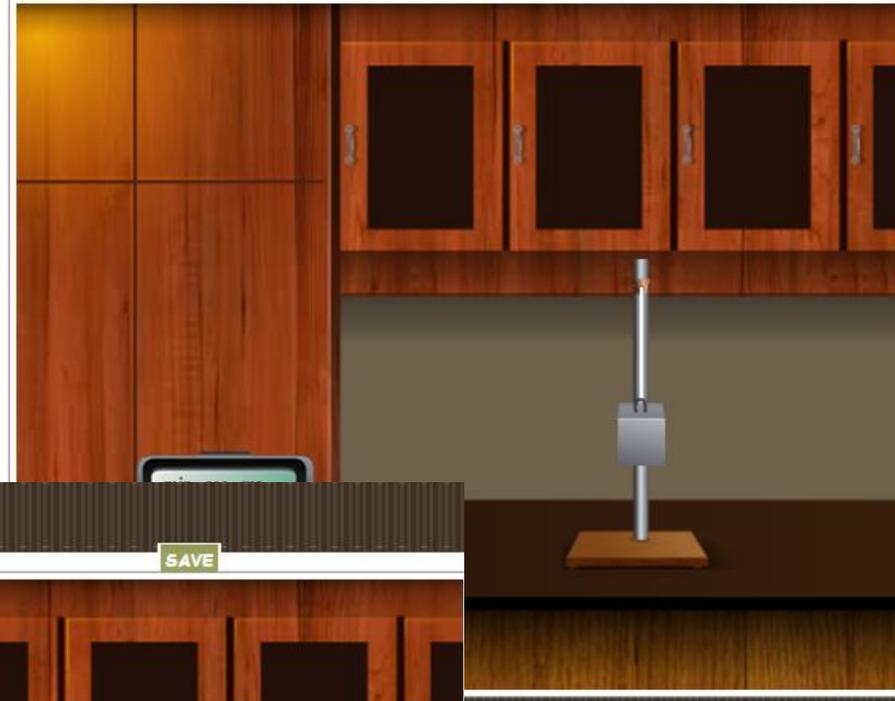
Pendulum Length(m): 1

0.5 1.5

Change Diameter(mm): 15

10 25

Show Protractor



Simple Pendulum

Solution Controls

Select Environment

earth

Select Shape

Square

Select Material

Steel

- Steel
- Copper
- Aluminum
- Iron
- Brass
- Lead

Change Diameter(mm): 15

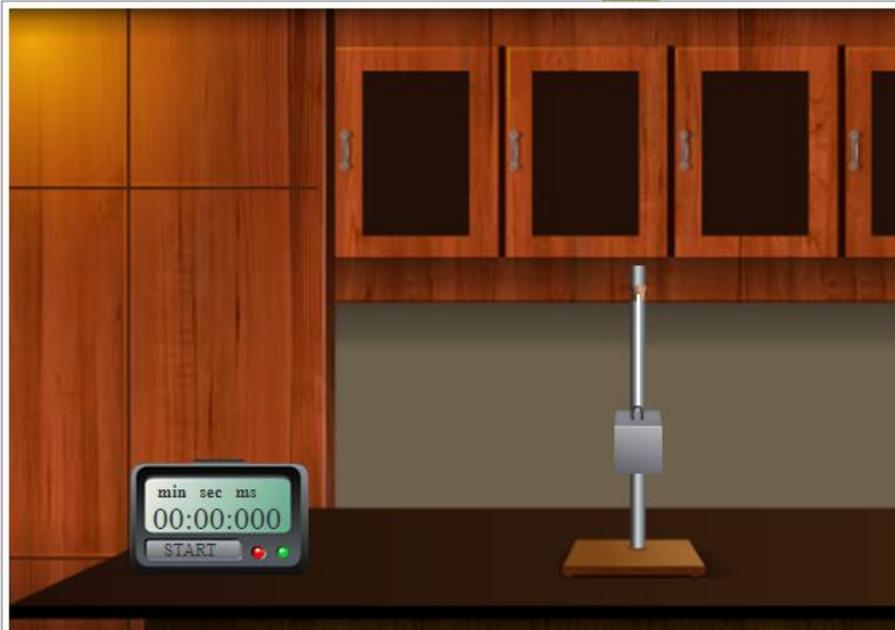
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Developed by Amrita University & CDAC Mumbai. Funded by MeitY (Ministry of Electronics & Information Technology)

olabs.edu.in

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Ministry of Electronics and Information Technology

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Usage metrics

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10000000+
5000000+
2000000+

Using OLabs - Scenarios

Teachers

- Supplementary Learning
- In the classroom: Explain labs before performing the practical/lab session
- After performing the practical/lab session- can frame review questions with the lab as the backdrop.

Students

- Pre-lab familiarise with lab.
- After Lab- Revision, try out various variants, reinforce the concepts, answer questions they may have, etc.

Creative teachers and students may come up with many more innovative uses!

Digital India Award of Online Labs



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

OLabs is being launched as a part of new educational initiatives.
Available in **DIKSHA** – One **Nation** One **Platform**



Ministry of Education
Government of India

75
Azadi Ka
Amrit Mahotsav

School Education Announcements

On
2nd
Anniversary
of
NEP 2020
29th July, 2022

- » 750 Virtual Labs in Science & Mathematics & 75 Skilling e-labs to be set up in 2022-23
- » 200 virtual labs hosted on DIKSHA.
- » A vertical on Virtual Lab has been created on DIKSHA portal, in Physics, Chemistry, Mathematics, Biology for classes 9 to 12

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