

Pedagogical perspective of Virtual Labs

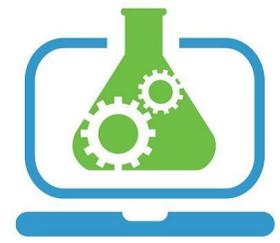
Virtual Labs as a Learning Tool



Virtual Labs

- Enhances **actual laboratory experiences**; Visualizing the concepts in a better manner
- Provides equal **access to quality practicals & hands-on experience**
- Perform and learn experiments - **anywhere, anytime**
- Individualized practice in all areas of experimentation

Recommendation
of NEP 2020

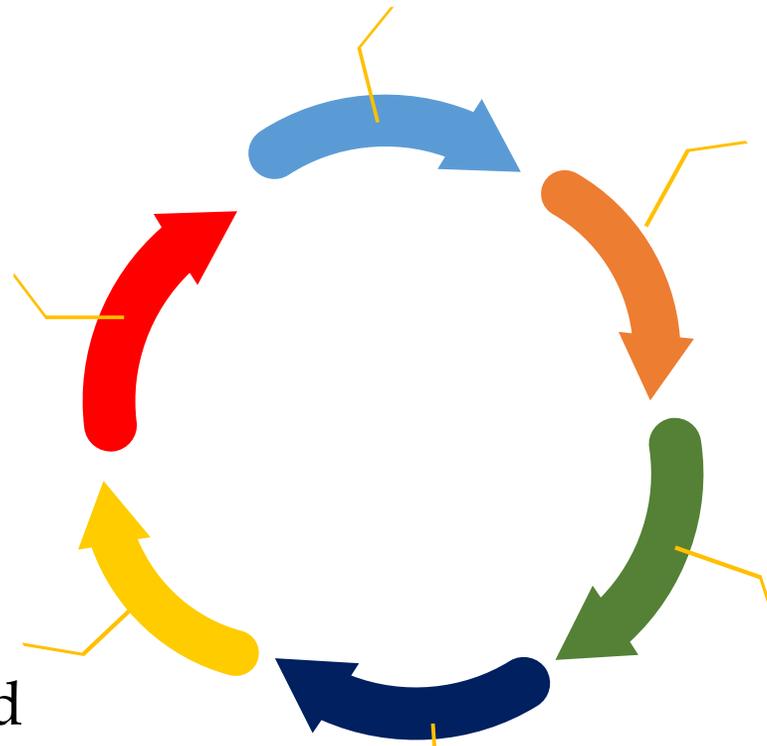


Why Virtual Labs as a Learning Tool ?

Adaptable as per the need of the learner; Visual aids, Interactive exercises, and text materials

Accessible over various platforms and allows learner to explore anytime & anywhere

Interactive: promote active learning and stimulated “Hands on experimentation”

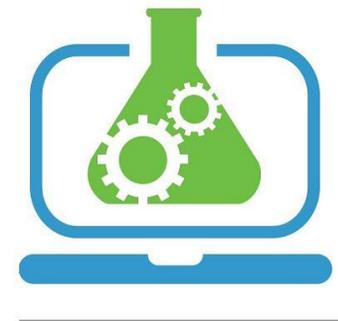


Automated assessments:

Assessment tools for Learning

User-friendly interface; easy navigation, clear instructions & logical organization of content

Personalized & self-paced Learning



Integration of Virtual Labs in Teaching-Learning

Facilitating the
actual laboratory
experiences;
engaging in
working with
hands

you are here-> home-> chemistry-> class 9-> distinguish between mixture and compound

Distinguish Between Mixture and Compound

Theory Procedure Animation Video Simulator Viva Voce Resources Feedback

Distinguish Between Mixture and Compound

Select the test
Basis of appearance

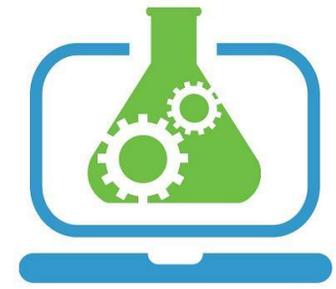
Mixture Compound
Fe + S FeS

Reset

Fe + S

Developed by Amrita University Under research grant from
Ministry of Electronics and Information Technology

<http://amrita.olabs.edu.in/?sub=73&brch=2&sim=70&cnt=4>



Integration of Virtual Labs in Teaching-Learning

Promoting
Guided
Inquiry based
learning;
Exploring
Investigations
for Learning

Bacteria Growth Virtual Lab

Experiment Design

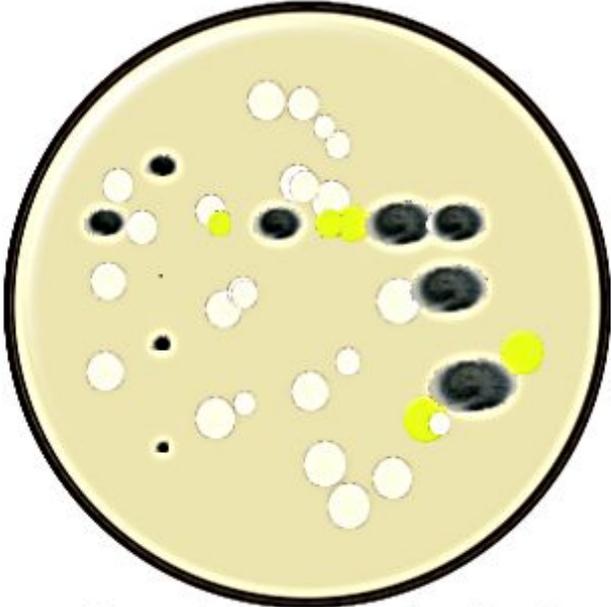
Temperature (Celsius):

Amount of Substance A added (microliters):

Amount of Substance B added (microliters):

Duration of Experiment

Petri Dish



Bacterial growth after day 1

Click to control the following variables:
 Nutrients in Agar



Integration of Virtual Labs in Teaching-Learning

Visualizing
the
Invisible
phenomenon
; Promoting
Critical
thinking

Exploring AR based resources as Virtual
Lab



Original Sound: Off

Lenovo TB-1706L

ePathshala AR

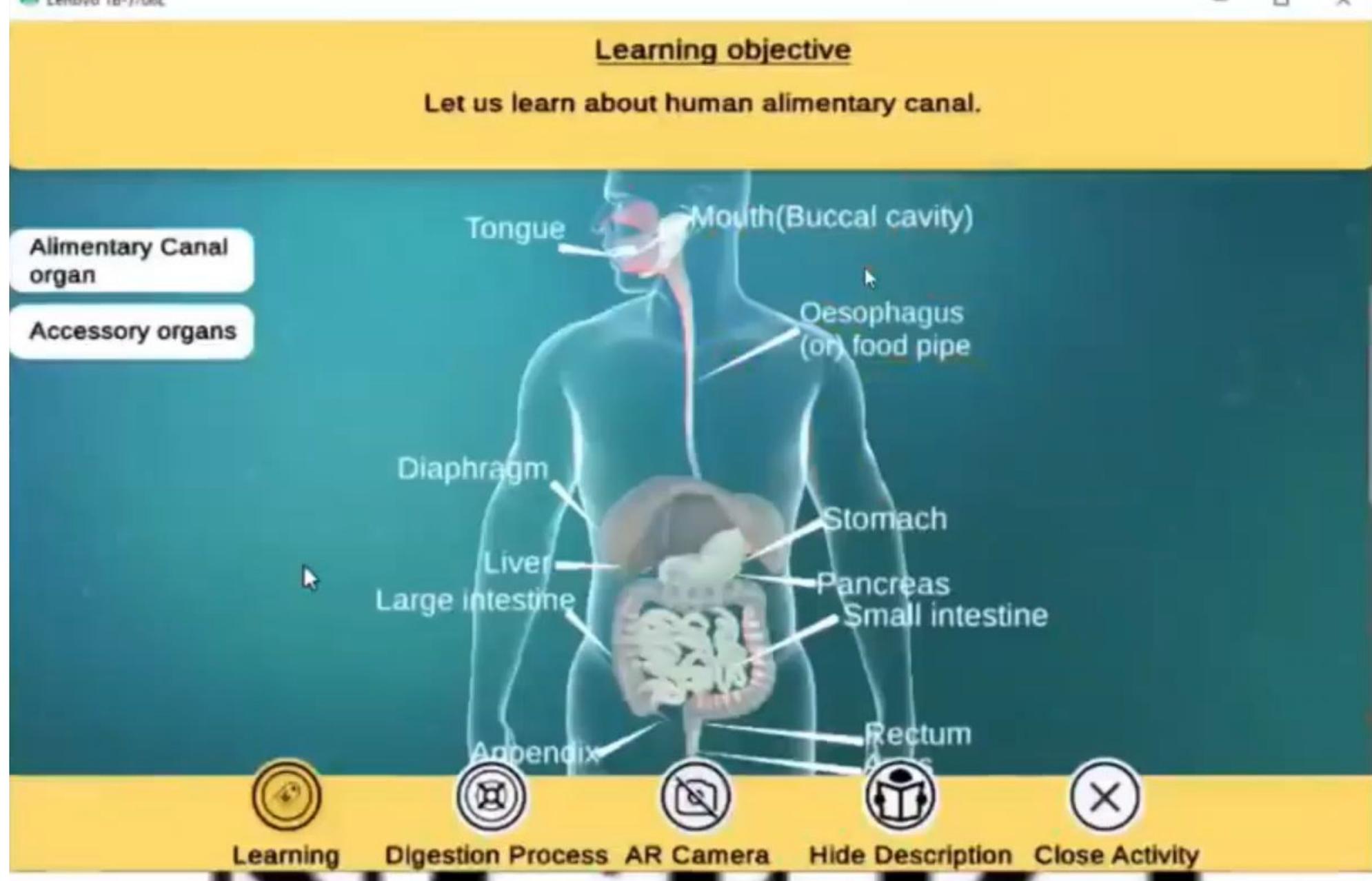
Select class ▾

Select subject ▾

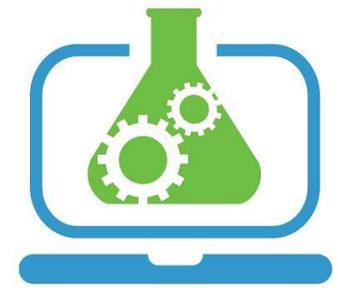
Select chapter ▾

Select topic ▾

Exploring AR based resources as Virtual Lab



ePathshala
AR



Integration of Virtual Labs in Teaching-Learning

**Automated
assessment:
Assessment
tools for
Learning**

Language

Welcome to the English Lab!

Exercises

#	Exercise Name	Description
1	Passive to Active voice Conversion	Convert Passive to Active voice

Start

past tense
active voice
voice

<https://cdac.olabs.edu.in/?sub=84&brch=23&sim=195&cnt=439>

Thanks for your
attention

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