# Overview of ChemCollective Vlabs

**Spoken Tutorial Project**
**http://spoken-tutorial.org**
**National Mission on Education through ICT**
**http://sakshat.ac.in**

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# Learning Objectives

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- **About ChemCollective Vlabs**

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- **About ChemCollective Vlabs**
- **About ChemCollective Vlabs offline interface**

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- **Benefits of ChemCollective Vlabs**

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- **About ChemCollective Vlabs**
- **About ChemCollective Vlabs offline interface**
- **Benefits of ChemCollective Vlabs**
- **Play video clippings of ChemCollective Vlabs tutorials available on our website**

# System Requirement

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- **Mac OS X v 10.10.5**

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- **ChemCollective Vlabs v 2.1.0-3D**

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- **Mac OS X v 10.10.5**
- **ChemCollective Vlabs v 2.1.0-3D**
- **Java v 1.8.0**
  **https://java.com/en/download/**

# Pre-requisites

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- **Learner should have knowledge of high school Chemistry**

# About ChemCollective Vlabs

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- **It is available in both online and offline modes**
- **It is available free of charge to all educators and students**

# About ChemCollective Vlabs

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- **ChemCollective Virtual labs are a part of National Science Digital Library**
  **https://nsdl.oercommons.org**

# Benefits

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- **Vlabs allow careful observation and safe measurement of parameters**

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- **Useful in experiments that involve risks to health and physical integrity of learners**

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- **Cheaper, faster, less risky and more affordable than the real process**
- **Teachers can use Vlabs as pre-lab exercise**

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- **Help students learn basic laboratory techniques**

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- **Help students learn basic laboratory techniques**
- **Used as in-class activities for individuals or teams**

# Video Clippings

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- **We will briefly go through the individual tutorials created in this series**

# Spoken Tutorial: Download and Installation of Vlabs

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**Explains,**

# Spoken Tutorial: Download and Installation of Vlabs

**Explains,**

- **About ChemCollective website and online interface**

# Spoken Tutorial: Download and Installation of Vlabs

**Explains,**

- **About ChemCollective website and online interface**
- **Download and run Vlabs on Windows and Mac**

# Spoken Tutorial: Preparation of Standard Solutions

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**Explains,**

# Spoken Tutorial: Preparation of Standard Solutions

**Explains,**

- **How to prepare standard solution of, 1 molar sodium chloride**

# Spoken Tutorial: Dilutions and pH Measurement

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**We will measure,**

# Spoken Tutorial: Dilutions and pH Measurement

**We will measure,**

- **Change in pH for solutions of acids and bases on dilution**

# Spoken Tutorial: Density of Metals and Liquids

# Spoken Tutorial: Density of Metals and Liquids

**We will determine,**

# Spoken Tutorial: Density of Metals and Liquids

**We will determine,**

- **Densities of metals and liquids**

# Spoken Tutorial: Effect of Temperature on Solubility

# Spoken Tutorial: Effect of Temperature on Solubility

**Explains,**

# Spoken Tutorial: Effect of Temperature on Solubility

**Explains,**

- **Effect of temperature on solubility of salts**

# Spoken Tutorial: Acid-Base Titrations

# Spoken Tutorial: Acid-Base Titrations

**Explains how to standardise,**

# Spoken Tutorial: Acid-Base Titrations

**Explains how to standardise,**

- **Acid-base using titration method**

# Spoken Tutorial: Buffer Solutions

# Spoken Tutorial: Buffer Solutions

**Explains how to,**

# Spoken Tutorial: Buffer Solutions

**Explains how to,**

- **Prepare acetate buffer and test the buffering action**

# Spoken Tutorial: Heat of Reaction

# Spoken Tutorial: Heat of Reaction

**Explains,**

# Spoken Tutorial: Heat of Reaction

**Explains,**

- **How to calculate heats of reaction for neutralization reactions**

# Spoken Tutorial: Metal Displacement Reactions

# Spoken Tutorial: Metal Displacement Reactions

**Explains,**

# Spoken Tutorial: Metal Displacement Reactions

**Explains,**

- **About metal displacement reactions**

# Spoken Tutorial: Determination of Equilibrium Constant

# Spoken Tutorial: Determination of Equilibrium Constant

**Explains,**

# Spoken Tutorial: Determination of Equilibrium Constant

**Explains,**

- **How to calculate equilibrium constant**

# Spoken Tutorial: Determination of Equilibrium Constant

**Explains,**

- **How to calculate equilibrium constant**
- **About effect of change in temperature and concentration on equilibrium**

# Spoken Tutorial: Determination of Solubility Product

# Spoken Tutorial: Determination of Solubility Product

**Explains how to,**

# Spoken Tutorial: Determination of Solubility Product

**Explains how to,**

- **Determine Solubility of salts**

# Spoken Tutorial: Determination of Solubility Product

**Explains how to,**

- **Determine Solubility of salts**
- **Calculate Solubility Product**

# Summary

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- About ChemCollective Vlabs
- About ChemCollective Vlabs offline interface
- Benefits of ChemCollective Vlabs
- Play video clippings of ChemCollective Vlabs tutorials available on our website

# Assignment

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1. **Open Vlabs interface and explore**

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1. **Open Vlabs interface and explore**
2. **Explore table of contents in the Help menu**

# About the Spoken Tutorial Project

- **Watch the video available at http://spoken-tutorial.org /What_is_a_Spoken_Tutorial**
- **It summarises the Spoken Tutorial project**
- **If you do not have good bandwidth, you can download and watch it**

# Spoken Tutorial Workshops

**The Spoken Tutorial Project Team**

- **Conducts workshops using spoken tutorials**
- **Gives certificates to those who pass an online test**
- **For more details, please write to contact@spoken-tutorial.org**

# Forum for specific questions

- **Do you have questions in THIS Spoken Tutorial?**
- **Please visit**

  **http://forums.spoken-tutorial.org**
- **Choose the minute and second where you have the question**
- **Explain your question briefly**
- **Someone from our team will answer them**

# Forum for specific questions

- **The Spoken Tutorial forum is for specific questions on this tutorial**
- **Please do not post unrelated and general questions on them**
- **This will help reduce the clutter**
- **With less clutter, we can use this discussion as instructional material**

# Acknowledgements


- Spoken Tutorial Project is a part of the Talk to a Teacher project
- It is supported by the National Mission on Education through ICT, MHRD, Government of India
- More information on this Mission is available at

  http://spoken-tutorial.org /NMEICT-Intro