



# Lab Manual: Chemistry

Curriculum-focused video resources which provide faculty and students with step-by-step instructions for commonly taught labs. There are three separate videos for each lab experiment, illustrating preparation for instructors, key theoretical concepts, and a protocol for students.

**32**

lab manuals

**96**

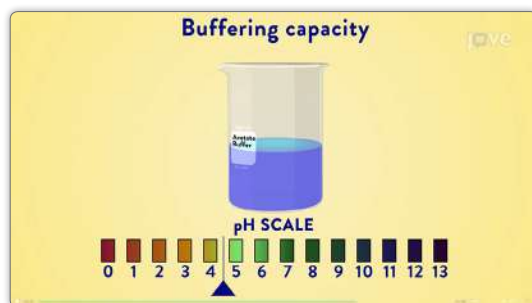
videos

**12**

subtitle languages

## High-Impact Animations Explaining the Theory Behind the Experiment

From video — [Concepts: Buffers](#)



## Instructor Preparation and Student Protocol Videos With Detailed Steps and Printed Materials

From video — [Student Protocol: Buffers](#)



Each lab manual can serve as a stand-alone resource in a chemistry lab class. They allow educators to better prepare students to learn chemistry hands-on, perform experiments independently, improve their understanding of the theory underlying each lab activity, and boost knowledge retention.

Lab Manual: Chemistry covers a variety of topics, such as:

- Lab Techniques
- Scientific Measurement and Lab Skills
- Redox Reactions
- Acid and Base Concentrations
- Proper Lab Notebook Keeping
- Melting Points
- Boiling Points
- Recrystallization
- Extraction
- Simple Distillation
- Steam Distillation
- Identifying Alcohols
- Thin-Layer Chromatography
- Identification of Unknown Aldehydes and Ketones
- UV-Vis Spectroscopy of Dyes

## Prepare students for hands-on lab work

JoVE Lab Manual shows actual lab experiments performed by experts. These live demonstrations enable students to learn how real lab equipment is used to perform key techniques and helps them better understand how to apply concepts in the real world.

## Reinforce chemistry lab courses with well-structured audio-visual aids

Thorough video manuals for conducting introductory labs increase students' confidence in performing experiments, and high-impact animations help major and non-major chemistry students better understand the concepts behind the labs and achieve their learning goals faster.

## Facilitate success in in-person, flipped, and virtual classrooms

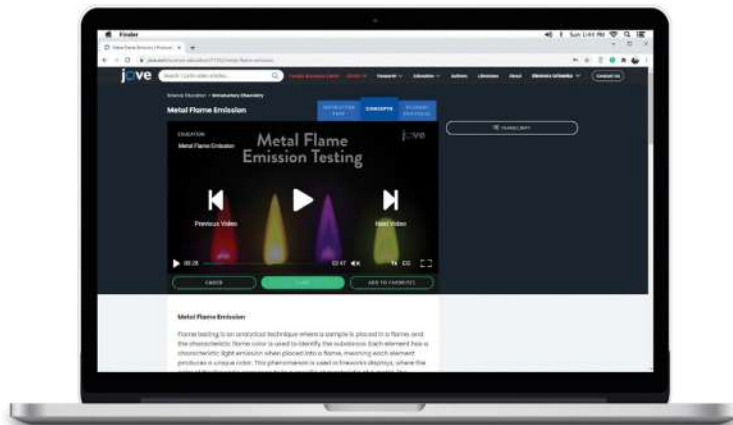
Videos can be seamlessly integrated with Zoom, Microsoft Teams, etc., as well as any learning management system such as Moodle and Blackboard.

No matter the class format, time is saved on lesson planning and in-class instruction thanks to guided lab setup and printed materials for both instructors and students.

# JOVE WHY DO BOTH INSTRUCTORS AND STUDENTS LIKE JOVE LAB MANUAL: CHEMISTRY?

## Instructors like it because...

- **Instructor Preparation Videos** save valuable lesson planning time
- **Concept Videos** enable flipped classroom activities, saving in-class time
- **Printed Materials Lists and Setup Guides** are useful for creating lab handouts
- **Embed, Share and 'Add to Favorites' Options** allow easy integration into course websites or Learning Management Systems
- **Video Transcripts** support text-based learning
- **Navigation Panel** enables effortless switching between different parts of a video
- **Reading Materials** enable deeper concept comprehension



## Students like it because...

- **Short Videos** keep them more engaged
- **Animations** help illustrate key concepts
- **'Student Protocol' Videos** make it easier to visualize and complete lab activities
- **Printed Procedures** allow students to refer to protocols in text format
- **Translated Subtitles** support learning in a variety of languages
- **Closed Captions** allow for easy capture of all details
- **Video Speed Regulation** provides greater control over the learning process
- **Navigation Panel** allows viewers to replay specific parts of the video as needed



"I thoroughly enjoy the addition of the 'lab manuals' JoVE has, as this neatly separates sections so that students can better visualize components of a lab report ... With the instructor prep area, these seem to be easily adaptable for in-person labs. These make for great pre-lab assignments so that students are better prepared and know what to expect, which means students will also be more safe."

— Kristian Schlick,  
Instructor, Department of Chemistry & Biochemistry,  
Montana State University, USA