

LEYBOLD®

LEYBOLD® DIGITAL

DISCOVER HOW DIGITAL LEARNING & TEACHING WORKS



WATCH VIDEO!

- Online portal for management of experiments, devices and literature
- Usage, creation and editing of digital experiment instructions
- Innovative measuring technology

LeyLab - Easy and time-saving organisation and management



LEYLAB

- Complete online portal
- For organisation & management of experiments and devices
- No installation needed
- For all platforms, tablets, smartphones and PC's



EXPERIMENT COLLECTION

- Anytime and from anywhere access to the whole LD experiments catalogue with all the relevant information for every experiment
- Find desired experiment quickly and reliably
- Set-up own experiment collection
- Easily expand the LD experiments
- Easily create own, new experiments
- Collaborate with colleagues
- Intelligently link devices
- Additional documents are where you need them for the experiment
- Collection of all kinds of documents like PDFs, videos or links to websites or apps; can be shared with students



DEVICE COLLECTION

- Entire inventory at a glance
- Direct overview of all available devices including quantity and storage location
- Save time searching for equipment
- Detailed information on every item
- Easy inventory of the complete collection
 - LD devices and other manufacturers' devices
 - With barcode functionality
- Clear inventory management with borrowing and return function



LICENCE MANAGEMENT

- Manage all LD software and literature in one place
- Licence codes are safely stored in the cloud so they are not lost and can be used to install software on new hardware

GUEST ACCESS

- Third party access to LeyLab is possible
- Share information with teachers/lecturers from other institutes
- Enables a centralised organisation (e.g. by ministry) of many institutes and therefore a more efficient use of the equipment, documents, etc.

Lab Docs – Digital & interactive experiment instructions



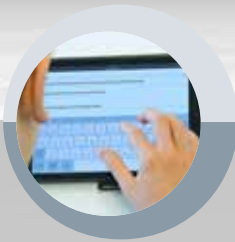
DIGITAL PREPARATION

- Online portal - Organisation & management of experiments and devices
- LD management system LeyLab may contain LD and own experiment instructions



DIGITAL DISTRIBUTION

- Easily access from all students' tablets and smartphones using a QR code



DIGITAL EVALUATION & PROTOCOL

Interactive usage

- Answer questions
- Analyse
- Write digital protocols
- Save
- Share with the teacher/lecturer



DIGITAL EXPERIMENTING

- Opening the Lab Doc
- Setting up experiment



DIGITAL DATA ACQUISITION

Interactive with Mobile-CASSY 2 WiFi

- Perform experiment & measurement
- Measured values in tables & diagrams in real time

How does a Lab Doc work?



INTERACTIVITY: STUDENTS – LAB DOC – EXPERIMENT

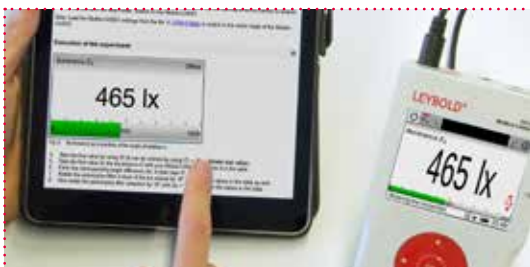
Every student answers the questions in the individual Lab Doc on their tablet, smartphone or laptop and analyses the measurements. Then the individual protocol can be stored and shared.



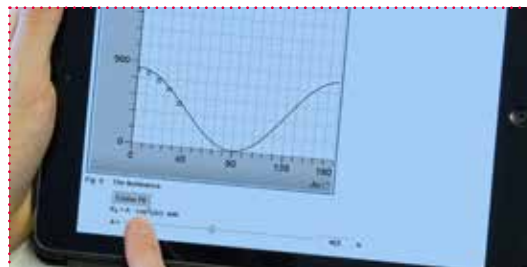
Enter answers directly



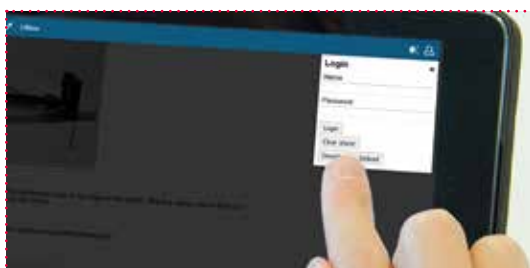
Enter the measured values manually, diagrams are created automatically



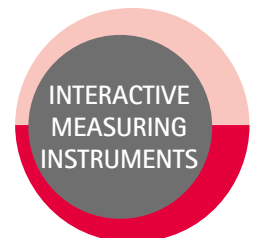
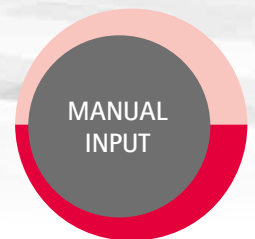
Live measured values from the Mobile-CASSY 2 WiFi are transmitted to measuring instruments, tables & diagrams



Smart diagrams, selection of alignments by touch



Save and share the protocols, stored data can be reloaded at any time (e.g. for further editing at home)



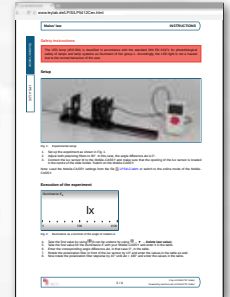
Worksheet sections

Effortless preparation, straightforward implementation



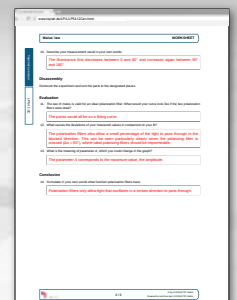
STUDENT SECTION

- Short and easy-to-follow experiment descriptions with direct student addressing
- Sufficient space for student's answers
- Modular design allows for many options for specialisation and working speeds
- Contains instructions and a to be completed worksheet
- Systematic illustration of the experimental set-up and performing



TEACHER/LECTURER SECTION

- Designed for useful prescribed timeframes
- Tailored to the respective age group
- Recommendations for the use of experiments and their goals as well as a classification in the subject-related context
- Detailed accompanying information for preparation, naming of possible sources of error and safety measures
- Worksheet contains sample answers and sample measurements as well as sample evaluations for planning classes or lectures
- Classification of experiments according to level, degree of difficulty, preparation time and duration



LAB DOC - ALL IN ONE

1. Set-up instructions and assignments of tasks
2. Measured values (table, diagram)
3. Data evaluation (answers, alignments of measured values)

This produces: **a complete digital protocol**

All information about the experiment is in the Lab Doc of each student. No additional programs or apps are needed to analyse the measured values.



Work fully digital on all platforms or traditionally with paper



DIGITAL - FOR THE PAPERLESS CLASS/LECTURE

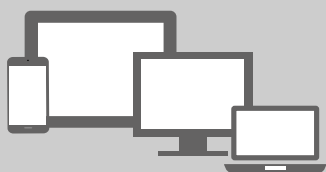


- The digital version can be accessed from any student device

TRADITIONAL - PRINTED HANDOUTS



- Download as a PDF file for printing



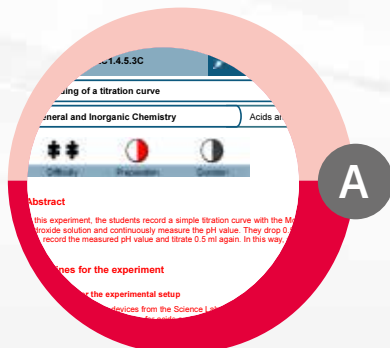
iOS  
LINUX macOS

- For all platforms
- Any tablet, smartphone or PC
- Solutions for any IT infrastructure
- Allows for BYOD
- No installation necessary



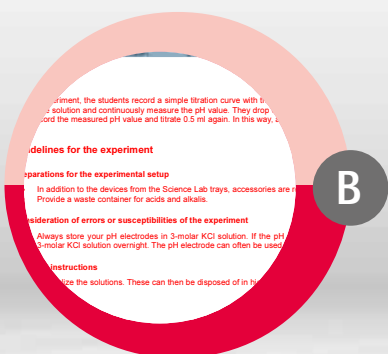
Detailed structure

of innovative experiment instructions Lab Docs



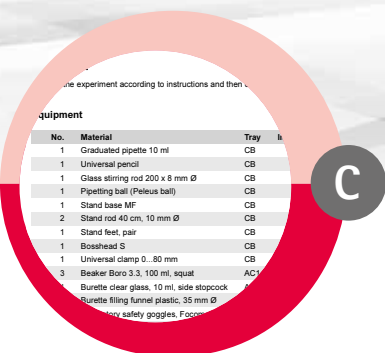
LEGEND

- Experiment title and subject
- Age/degree
- Difficulty level
- Preparation time for teachers/lecturers
- Experiment duration



INFORMATION FOR TEACHER/LECTURER

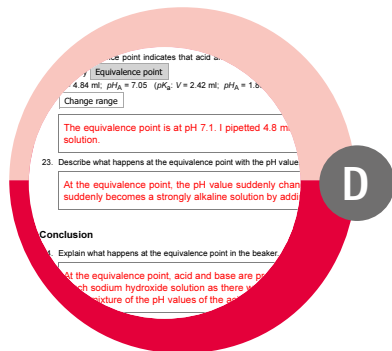
- Abstract
- Didactical considerations
- Guidelines for the experiment



INSTRUCTIONS FOR STUDENTS

TEACHER/LECTURER SECTION INCLUDES ADDITIONAL INFORMATION IN RED

- Introduction
- Assignment
- Equipment
- Safety instructions
- Setup
- Experimental procedure



WORKSHEET FOR STUDENTS

TEACHER/LECTURER SECTION WITH SAMPLE MEASURED VALUES & ANSWERS IN RED

- Observation
- Disassembly
- Evaluation
- Conclusion
- Additional tasks

Lab Docs Editor

Create new and edit existing Lab Docs

QUICKLY AND EASILY EDIT AND CREATE EXPERIMENT INSTRUCTIONS

ADAPT PURCHASED
LAB DOCS FROM
LITERATURE PACKAGES

MAKE YOUR EXISTING
INSTRUCTIONS SUITABLE FOR
THE DIGITAL CLASS/LECTURE

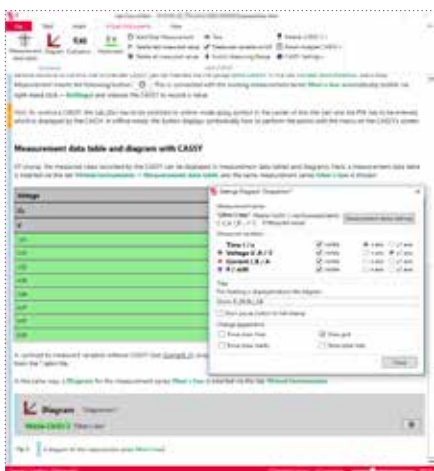
CREATE BRAND NEW
INSTRUCTIONS OF
YOUR OWN

DIGITAL, INTERACTIVE AND IN A FUTURE-PROOF FORMAT

- Easy-to-use tool, HTML skills are not needed
- Design experiment instructions easily and adapt to your own needs
- Responsive layout - adapts to any screen size
- Central availability for all colleagues
- Measured values tables & diagrams with or without integration of a Mobile-CASSY interface

COMPREHENSIVE EDITABILITY

- Edit & delete assignments
- Modify instructions
- Add text
- Integrate and adapt interactive diagrams & tables
- Insert images, vector graphics, hyperlinks, etc.
- Prepare and create equipment lists
- Create formulas



MANY USEFUL FUNCTIONALITIES

- Changes are immediately visible in the web browser
- Convenient view of student & teacher/lecturer section
- Export as PDF possible
- Export to LeyLab for centralised management
- Distribution of Lab Docs using QR code

Innovative measuring technology

with the ultimate student measuring device

MOBILE-CASSY 2 WIFI

THE ULTIMATE STUDENT MEASURING DEVICE

- For all measuring tasks and subjects in physics, chemistry & biology
- Measure and analyse all in one
- With WiFi to connect to school/university WiFi or set up your own access point
- Large display for high-contrast diagrams
- Measure voltage, current, power, energy and temperature directly with the device - no accessories needed
- Compatible with all CASSY sensors S and M
- Automatic sensor detection
- Fast recording of measured values - up to 500,000 values per second



FLEXIBLE USE - YOU HAVE THE CHOICE:

STANDALONE DEVICE



- Ready-to-use
- Measure and analyse directly on the device

TABLET OR SMARTPHONE



- With WiFi connection
- Experimenting with interactive Lab Docs or
- Measuring and analysis in the CASSY app

PC OR LAPTOP



- Connection via USB or WiFi
- Experimenting with interactive Lab Docs or
- Measuring, analysis and evaluation in CASSY Lab 2 software

WITH WHITEBOARD



- Via the VNC Client or
- Measuring and analysis in the CASSY app or in CASSY Lab 2 software
- Presentation of single measuring results



No digital classroom (yet)?

Digital student experiments can also be carried out exclusively with the Mobile-CASSY 2 WiFi.

The student measuring device can set up a so-called access point. This WiFi network allows then the interaction with tablets or smartphones.

CASSY SENSORS AT A GLANCE

The CASSY sensors M are the ideal completion for LEYBOLD student experiments with the Mobile-CASSY 2 WiFi.

- Affordable sensor family, specially developed for student experiments
- Sensors with several measurement parameters and/or ranges
- Automatic parameter setting
- Immediate measurement with simple set-up
- Range can be continuously expanded with further sensors
- Including over 50 CASSY S Sensors
- Supported by the Lab Docs and the CASSY app

MICROPHONE M
(524 442)

RELAIS M
(524 446)

PH ADAPTER S
(524 0672)

ELECTRO-CHEMISTRY BOX M
(524 450)

CONDUCTIVITY ADAPTER S
(524 0671)

GM ADAPTER M
(524 440)

VOLTAGE SENSOR M,
±30 V (524 438)

MAGNETIC FIELD SENSOR M,
±100 mT (524 436)

FORCE SENSOR M,
±50 N (524 434)

LIGHT BARRIER M
(524 431)

LUX SENSOR M
(524 444)

INTERACTIVITY BETWEEN MEASURING TECHNOLOGY AND LAB DOC

Up to three devices (tablet/smartphone/laptop) can be connected to one Mobile-CASSY 2 WiFi (= 1 student group)



Wireless connection



Lab Doc

Once connected to Mobile-CASSY 2 WiFi, the settings for the experiment are transferred (measurement parameters or ranges etc.).

Measurement values are directly put into tables and diagrams of the Lab Doc.



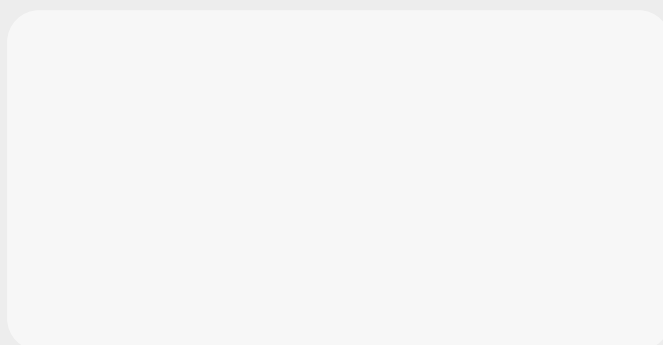
Mobile-CASSY 2 WIFI



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