LabTutor® in Life Science Education

Transforming Laboratory Classrooms

LabTutor software makes teaching and learning easier by integrating the background information, experiment protocols, real-time data acquisition, analysis, and reporting into one easy-to-use software interface.

Allows Independent Learning

LabTutor not only guides students through experiment protocols and analysis, it tests their understanding of the scientific principles behind each experiment. The interactive nature, easy structure and comprehensive content, captures students' interest and maintains their attention to enhance the learning process.

Increases Lab Productivity

LabTutor increases laboratory productivity. It reduces preparation time and allows students to complete experiments more independently. LabTutor reduces the need for printed manuals, handouts and use of additional software programs. All acquired data, analyses and written reports are conveniently saved within one file for easy review or printing.

Provides Cutting-Edge Technology

Behind the easy-to-use interface, LabTutor software uses the latest ADInstruments and Microsoft technology. It operates on computers with Windows XP or Vista using Microsoft .NET framework technology. Its HTML interactivity combined with real-time data acquisition, analysis and reporting features, represent the next generation in laboratory teaching. Best of all, LabTutor is designed for use with the data acquisition system more life science educators prefer to use – PowerLab®.
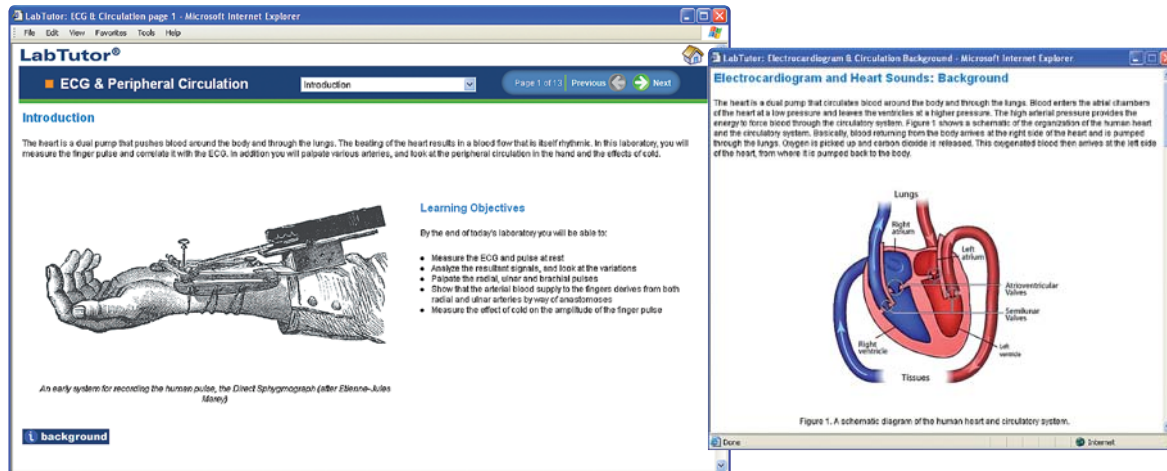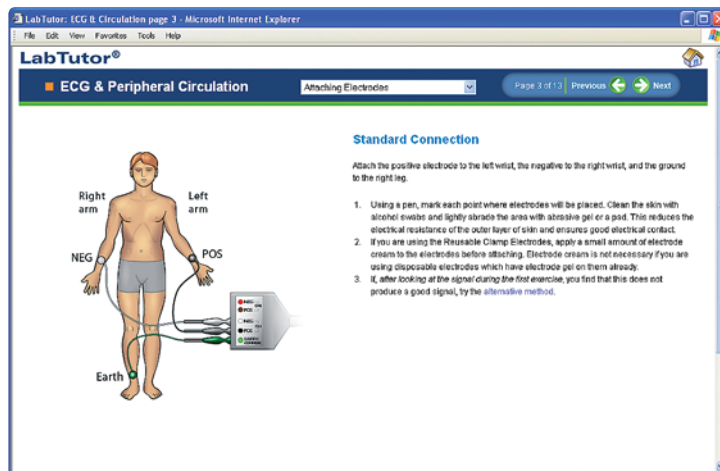
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LabTutor Experiments

All LabTutor experiments share the same structure. From the introduction, setup, data acquisition and analysis through to the report, students are guided through each experiment, maximizing their learning experience.
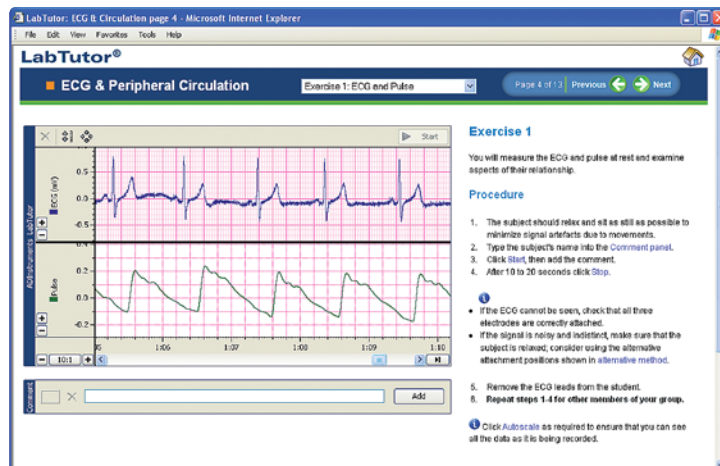
INTRODUCTION

Above: Introduction pages provide clearly defined learning objectives. By clicking background buttons, windows with additional information are displayed.

SETUP

Above: Setup instructions and diagrams assist students to set up for their experiments.

EXERCISES

Human Physiology (17 exp)
Cardiorespiratory
ECG & Peripheral Circulation
Electromyography (EMG)
Respiratory Airflow and Volume

Animal Physiology (5 exp)
Frog Heart
Frog Nerve
Frog Skeletal Muscle

General Biology (7 exp)
Acid-Base Titration
Cellular Respiration
Photosynthesis

Exercise Physiology (8 exp)
Cardiorespiratory Effects of Exercise
Aerobic and Anaerobic Fitness Testing
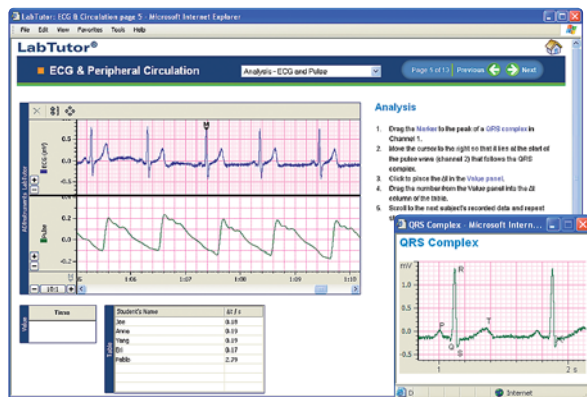Energy Metabolism

Pharmacology (5 exp)
Drug studies on skeletal, cardiac and smooth muscle

Left: The combination of clear step-by-step instructions, preset acquisition parameters, embedded information links and interactive recording and analysis tools, take the guess work out of experiment protocols.
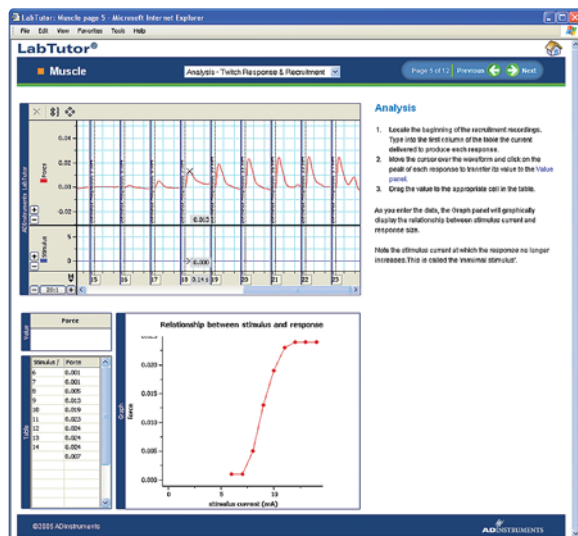
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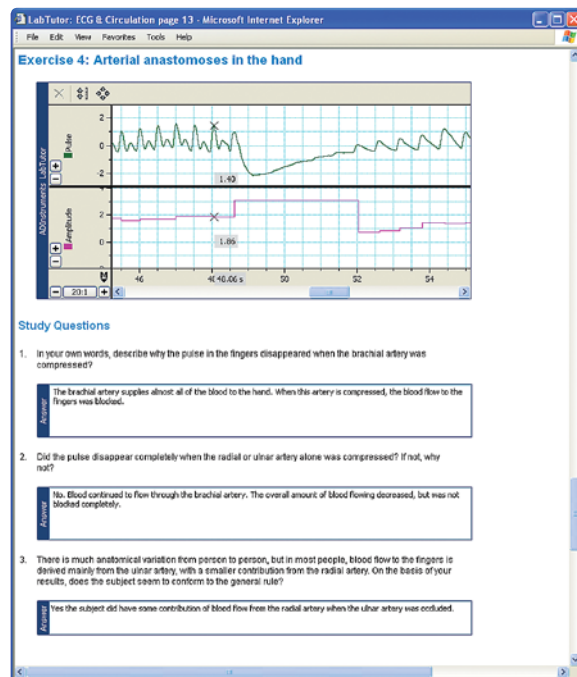
LabTutor Experiments

ANALYSIS

Above: Recorded data is transferred to the analysis pages. Features such as the Marker tool and hyperlinked windows are available to assist in analysis.
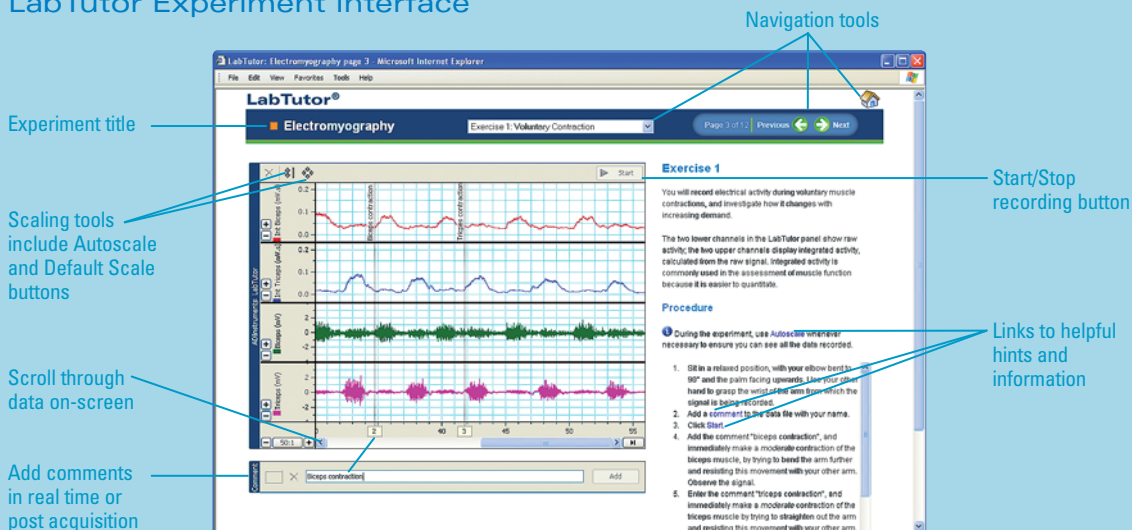
GRAPHING

REPORTING

Above: Report pages include study questions as well as students' recorded data, analysis tables and graphs from their completed experiments. Students can type their answers into LabTutor and the reports are saved for easy review or printing.

For the educator, LabTutor instructor materials are provided which include suggested report answers.

Left: From recorded data, students can select parameters on-screen and paste numerical values into an associated table. Graphs are then automatically generated from these values.

LabTutor Experiment Interface

Navigation tools

Experiment title

Start/Stop recording button

Scaling tools include Autoscale and Default Scale buttons

Links to helpful hints and information

Scroll through data on-screen

Add comments in real time or post acquisition

LabTutor has a consistent format with features that assist students to complete experiments successfully.

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Related Hardware & Software

PowerLab Systems with LabTutor, LabChart™ and Scope™ Software

ADInstruments also offer PowerLab LabChart Systems which include PowerLab hardware with LabTutor, LabChart and Scope software as well as the staff and student friendly LabTutor software.

LabChart and Scope offer the classroom further flexibility in acquisition and analysis options. These software programs are ideal for use in advanced undergraduate and post-graduate courses as well as research projects.

LabTutor, LabChart and Scope are optimized for use with all ADInstruments Teaching PowerLabs from the 4ST to the latest 26T & 15T models. For more information on other PowerLab configurations, please contact your ADInstruments representative for more information.

LabTutor Updates and Additional Free Experiments

The latest set of experiments for use with LabTutor can be downloaded free-of-charge by registered PowerLab users. Go to www.adinstruments.com/education to download the latest set.

Tailor LabTutor Experiments with LabAuthor™

LabAuthor provides easy-to-use software tools for creating and editing LabTutor experiments. You can make changes to any preconfigured LabTutor experiment, or create a new experiment to suit your laboratory equipment and curriculum. LabAuthor licenses may be purchased with or without onsite educator training and support packages. For more information visit www.adinstruments.com/tailormade or contact your nearest ADInstruments representative for a demonstration.
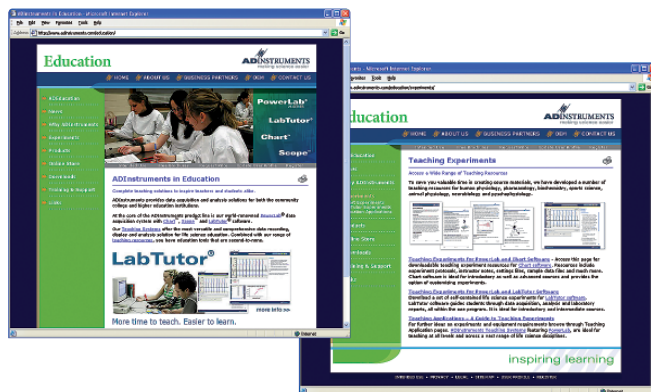

Teaching Systems

LabTutor is supplied with all ADInstruments Teaching Systems, which contain a PowerLab 15T or 26T. These systems as well as including a PowerLab contain all the transducers and accessories needed to conduct a wide range of life science experiments.

Ordering Information:
MLS040 LabTutor Software

Technical Description

LabTutor experiments are multi-page interactive HTML documents that feature real-time data acquisition. LabTutor works with PowerLab systems and Internet Explorer for Windows. Internet connection is not required.

LabTutor requires Internet Explorer 7.0 or later for Windows XP with Service Pack 2 (SP2) and .NET 2.0, or Internet Explorer 7.0 or Later and .Net 3.0 for Windows Vista.

GLP
21CFR Part11
Compliance

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QUALITY SYSTEM CERTIFIED

ISO 9001:2000 Certified Quality Management System