Lt is an online learning platform that engages students in active learning in the lab or remotely.

Our Animal Physiology Collection includes 10 customizable modules, each featuring a pre-lab prep and a lab. Combine lessons with our hardware teaching systems and kits to provide a true-to-life, practical learning experience for your students in the lab, or use Lt's pre-recorded example data for remote learning situations.

Professionally-developed lessons

Zoology and Physiology students can investigate basic and applied concepts in neuro- and muscle physiology. Courses are designed with common undergraduate insect, annelid, amphibian, and mammalian preparations.

Use our lessons off-the-shelf or tailor any lesson to suit your curriculum and your teaching preferences.
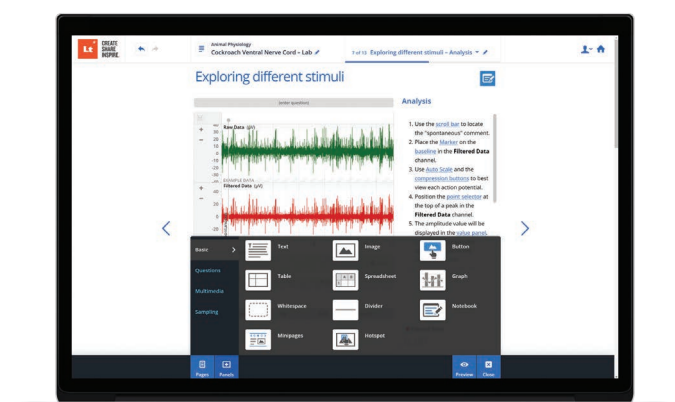
- Improved efficiency
- Increased student engagement
- Improved results in theory and clinical practice
- Increased student pass rates*

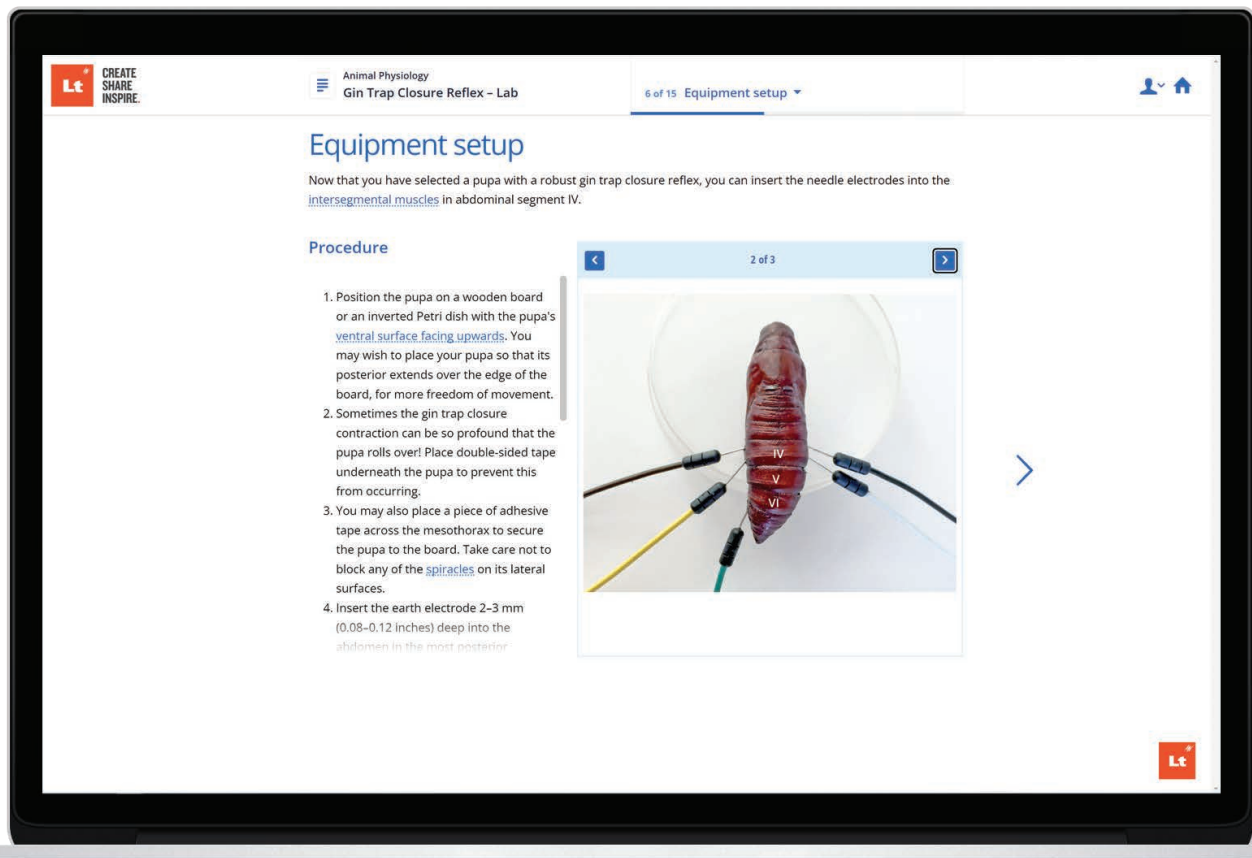*Results of using Lt at the Otago Polytechnic School of Nursing, 2017

"I have 1000 students each semester, but my labs run smoother with Lt."

Aura Grandidge
Manager Biology Labs, Anatomy and Physiology, University of Rhode Island

ADINSTRUMENTS

Equipment setup

Now that you have selected a pupa with a robust gin trap closure reflex, you can insert the needle electrodes into the intersegmental muscles in abdominal segment IV.

Procedure

2 of 3

1. Position the pupa on a wooden board or an inverted Petri dish with the pupa's ventral surface facing upwards. You may wish to place your pupa so that its posterior extends over the edge of the board, for more freedom of movement.
2. Sometimes the gin trap closure contraction can be so profound that the pupa rolls over! Place double-sided tape underneath the pupa to prevent this from occurring.
3. You may also place a piece of adhesive tape across the mesothorax to secure the pupa to the board. Take care not to block any of the spiracles on its lateral surfaces.
4. Insert the earth electrode 2–3 mm (0.08–0.12 inches) deep into the abdomen in the most posterior

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Animal Physiology Collection

10 MODULE COLLECTION

Animal Metabolism
Use a Gas Analyzer and PowerLab to record metabolic variables. Determine the metabolic rate and the respiratory exchange ratio (RER), then estimate the respiratory quotient (RQ).

Cockroach Sensory Nerve
Record CAPs, examine CAP amplitudes and frequency, and identify different "classes" of CAP.

Cockroach Ventral Nerve Cord
Record extracellular action potentials and determine the nerve conduction velocity.

Earthworm Action Potentials
Record extracellular action potentials, examine threshold voltage, 'all-or-none' response, refractory period, and conduction velocity.

Earthworm Smooth Muscle
Investigate the response of smooth muscle to neurotransmitters, temperature, and ions, and measure contraction rate and force.

Frog Heart
Measure the contraction force of cardiac muscle and an ECG to explain the relationship between stretch of cardiac muscle and the force of contraction.

Frog Nerve
Measure CAPs to explore the basic physiological properties of nerve impulses including the threshold, refractory period, and conduction velocity.

Frog Neuromuscular Junction
Use an isolated frog gastrocnemius with an intact sciatic nerve to explore twitch recruitment, muscle fatigue, and the effects of tubocurarine.

Frog Skeletal Muscle
Investigate twitch recruitment, effects of muscle stretch, summation, tetanus, and fatigue.

Gin Trap Closure Reflex
Record and analyze EMG data from a Manduca sexta pupal preparation.

"Lt is very easy to use and make lessons myself."

Anuj Bhargava
Physiology, The University of Auckland, New Zealand

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