



Bridge the gap between school and university

Visit our research lab for high-school students!

SCIENTEENS LAB

The Scienceens Lab – De Labo fir Jonker – is the first research lab for high-school students in Luxembourg. We offer workshops designed to spark their interest in science and welcome classes from all over the Greater Region.

Hands-on experiments, supervised by experienced scientists and teachers from various disciplines, give the students an insight into scientific research.

The workshops address relevant topics in biology, computer science, mathematics, physics and sustainability.

Join with your class and become scientists for a day!



Full day or half day



In Luxembourgish, French, German or English



On campus



Free or limited participation fee

The Scienceens Lab is part of the University of Luxembourg.

Physics & Sustainability

7 WORKSHOPS ON CAMPUS BELVAL



What are trees up to?

Take a scientific walk into the local woods, explore the forest and learn how to conduct research in a natural environment. (4^e to 1^e)*



Debunking myths with physics

Can science help us make sense of the world? Find out how to use some basic physics to debunk popular myths. (7^e to 5^e)



Renewable energies

How much energy do we use and what is the impact of our lifestyle? Discover the potential of renewable energies. (5^e to 1^e)



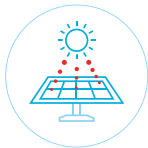
I've got the power!

What is power management? Carry out experiments to learn more about efficiency and energy storage. (5^e to 1^e)



CO₂, albedo and climate change

What is the role of CO₂ in climate change? Learn more about the greenhouse effect and discover the albedo. (4^e to 1^e)



High-tech research for solar cells

How does a solar cell work? How to measure its efficiency? Explore current research on photovoltaic technologies. (3^e to 1^e)



Modern spectroscopy

Why do we need sunscreen and how does it work? Learn more about light sources, wavelengths and properties of light. (3^e to 1^e)

* all levels according to the Luxembourgish school system
7^e = 12-13 years old
1^e = 18-19 years old

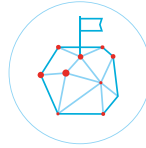
Mathematics

5 WORKSHOPS ON CAMPUS BELVAL



Dealing with randomness

Get an introduction to the theory of probability and discover how it can help you make decisions everyday. (3^e to 1^e)*



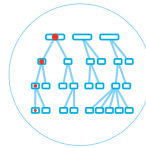
Finding the shortest path

Explore graph theory and learn how different concepts are used to solve problems in logistics and planning. (4^e to 1^e)



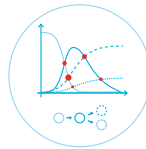
Keeping a secret

Discover how number theory is applied to secure communications and find out more about encryption algorithms. (3^e to 1^e)



Classifying objects

Learn how mathematical objects can be classified and why classifications are important in science. (3^e to 1^e)



Mathematical modelling

Find out how real-world problems can be modelled and solved using mathematics. (3^e to 1^e)



Biology

8 WORKSHOPS ON CAMPUS BELVAL



A taste of research

Discover several aspects of biological research: DNA extraction, cell culture, robotics and model organisms. (5^e and 4^e)*



Enzymes between lab bench and laptop

Analyse the activity of β -galactosidase and build your own computational model of the lactose-pathway. (3^e to 1^e)



Cancer research - Part 1

Learn more about the molecular and genetic background of cancer, and the research on this group of diseases. (3^e to 1^e)



Cancer research - Part 2

Get a better understanding of translational research on cancer treatments and drug resistance. (3^e to 1^e)



Dld3 shows its colours

Dive into the world of proteins, in particular enzymes such as Dld3, and discover specific lab equipment and techniques. (3^e to 1^e)



DNA on the tanning bed

Explore the effect of UV light on the DNA of the bacterium *Escherichia coli*. (3^e to 1^e)



ELISA's cutting edge research

Discover techniques used to increase crop productivity, such as plant vaccination and GMOs. (3^e to 1^e)



Understanding Parkinson's disease

Get an introduction to Parkinson's and learn how animal research can provide new insight into a disease. (3^e to 1^e)

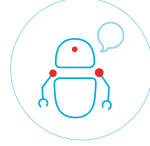
Computer Science

6 WORKSHOPS ON CAMPUS BELVAL



Art and Artificial Intelligence (AI)

Get an introduction to AI and scientific research on the topic. Discover how it can be used to create artworks. (6^e to 1^e)*



Think, talk and act like a robot

Explore algorithms, coding and robotics in order to compare how humans and robots act or react. (7^e and 6^e)



Are computers blind?

Discover computer vision: Learn how computers process images and be part of a live neural network. (6^e to 1^e)



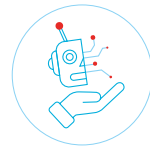
Inside the brain of ChatGPT, DeepL & Co

Learn more about generative AI, a powerful new technology, and discover what is behind programmes like ChatGPT. (5^e to 1^e)



Kaleidatascop

Develop your critical thinking skills, reflect on ethical issues linked with data use and learn how to interpret statistics. (4^e to 1^e)



To be or not to be... Making data talk

Dive into data science and discover how it is connected to the technologies we use every day, such as GPS. (4^e to 1^e)

ACTIVITIES ONLINE & AT SCHOOL



Girls in IT

After-school activities designed just for girls. Contact us to organise these sessions.



Test IT

Explore this website to discover computer science: testit.uni.lu

WHY PARTICIPATE?

The Scienceteens Lab's workshops are both educational and exciting thanks to their main features:

- Hands-on approach
- Tangible examples from daily life
- Small groups to foster engagement
- Topics matching the curriculum
- Connection with current scientific research
- Information about studies and career options



INDIVIDUAL ACTIVITIES

The Scienceteens Lab also offers Scienceteens Academies during the holidays: one-week workshops for highly motivated high-school students. These are unique opportunities to discover various scientific fields, to exchange with researchers and to meet other budding scientists!

Internships and workshops for adults are available in some of the disciplines as well.



TO KNOW MORE

www.scienteenslab.lu

www.facebook.com/scienteenslab

BOOK A WORKSHOP

- Go to www.booking.scienteenslab.lu
- Create your account as a teacher or a student
- Select an activity and a date
- Manage all your bookings via your dashboard



OUR SPONSORS

The Scienceteens Lab is made possible by the generous and continued support of several sponsors:

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- Joachim Herz Stiftung
- Leir Charitable Foundations
- Luxembourg National Research Fund (FNR)
- Ministry of Education, Children and Youth
- Œuvre Nationale

THANK YOU!