



### A NATIONWIDE INITIATIVE

#### **About LIFE**

- The LIFE Foundation is a Danish non-profit foundation supported by the Novo Nordisk Foundation
- We develop and offer inquiry-based science courses which are freely available to all schools in Denmark.

#### **Our locations**



LIFE Campus, a learning centre outside Copenhagen







Four regional LIFE Labs







## OUR MISSION

Our mission is to strengthen the interest and aspirations among children and young people for engagement, including an education, with natural sciences and technology.

## OUR CORE NARRATIVE

We believe that scientific knowledge is important for all children and young people. It is, of course, associated with cold facts, formulas, and research, but it also shapes our identities and our communities as human beings.

When science and technology become a natural part of our general education, we can better understand the world around us, participate in democratic dialogue, and contribute to a sustainable future.



## STRATEGIC FRAME FOR LIFE 2024-2028

Competence teachers

development among

Research-based knowledge translated into practice

**Agenda-setting** importance of scientific and technological knowledge

#### Development of science courses

Repetitive encounters with inquiry-based STEM 1 education

**STEM** in humanities and social science subjects to strengthen general education

1) Science, Technology, Engineering & Mathematics



#### Anchoring and reinforcing efforts



### LIFE COURSES

- In a LIFE Course, the school class works with inquiry-based science on real-world societal challenges
- We develop our courses together with scientists working in companies and research institutions
- The courses comply with the learning objectives for primary and lower secondary education and upper secondary education
- The course can take place in the classroom and/or in one of our advanced LIFE Labs with LIFE teachers.

## LIFE **COURSES**

PRIMARY AND LOWER SECONDARY EDUCATION

A Course contains...

LIFE Kit with teaching materials

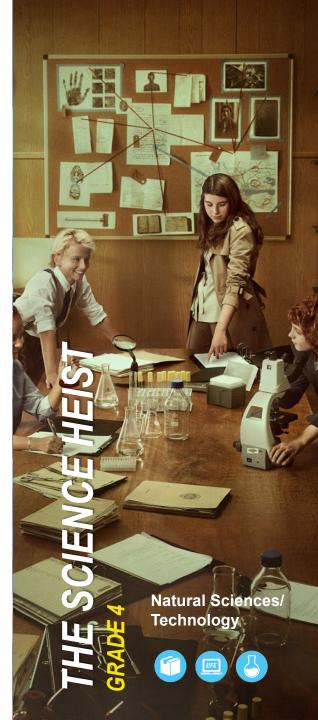
Digital platform

Additional teaching in









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PRIMARY AND LOWER
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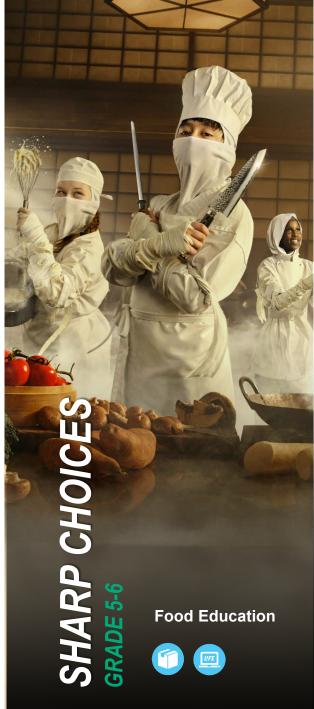
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Additional teaching in a LIFE Lab

**LIFE FOUNDATION** 







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Additional teaching in

a LIFE Lab **LIFE FOUNDATION** 





WITH MORE TO COME ...

## MICRO SAFARI



#### GRADE 1-2 | Natural Sciences/Technology

How can we protect insects and small creatures in Denmark?
Their populations are declining because they lack habitats.
Students on Micro Safari will investigate biodiversity among insects and other small animals. They will also learn about the anatomy of the animals and their habitats.

## SOLAR POWER



#### GRADE 3 | Natural Sciences/Technology

Robot vacuums, electric scooters, and smartphones — we're surrounded by devices that use electricity, and it's hard to imagine everyday life without them.

In Solar Power, students investigate what uses electricity in their daily lives and build simple electrical circuits.

They will also explore how a solar cell can be used in a lamp and determine when a solar cell works best.

## THE SCIENCE HEIST



#### GRADE 4 | Natural Sciences/Technology

A heist has taken place at LIFE. Valuable documents belonging to the Danish scientist Inge Lehmann have been stolen.

In *the Science Heist*, students investigate clues from the crime.

Through a series of scientific investigations, they must gather evidence and answer the big questions:

Who committed the crime — and how can they prove it?

## **AUTOPILOT**



#### GRADE 5 | Natural Sciences/Technology and Mathematics

Can self-driving cars solve the traffic challenges of the future? In *Autopilot*, students explore the technology behind autonomous vehicles.

What is a sensor?

How do you code a robot to drive on its own?

And what should we consider before releasing self-driving technology onto our streets?



## SHARP CHOICES



#### GRADE 5-6 | Food Education

Do you like carrots with parmesan?

We need to eat more vegetables — but how can we make them taste so good that we actually choose them more often?

In Sharp Choices, students experiment and taste their way to delicious dishes.

The school kitchen turns into a food lab as students crack the code to getting more greens on the plate.



## THE ENZYME QUEST



#### GRADE 6 | Natural Sciences/Technology

Enzymes are found in your body and in nature, and many companies are working to discover new enzymes they can use in their products.

That's because enzymes can make products cheaper and more environmentally friendly to produce.

Just like the companies, students will now go on a quest for new enzymes!

## THE PLASTIC MISSION



GRADE 7 | Physics/Chemistry, Biology and Geography

In *the Plastic Mission*, students step into the role of plastic manufacturers at a company that produces phone cases. Here, they're given a mission:

They must figure out how the company's production can become more sustainable!

## WEGROW



#### GRADE 8 | Biology, Physics/Chemistry, Geography

The global population is growing, and by the year 2050, producing enough food for everyone will become a serious challenge — unless we find new solutions.

It's difficult to find more land for farming, but maybe we can grow crops in a smarter way?

In *WeGrow*, you and your class will explore a sustainable method using natural microorganisms.



## THE CANCER CODE



#### GRADE 8-9 | Biology, Physics/Chemistry, Geography

Cancer is a complex disease. We need to understand more about the mechanisms behind it — how cancer starts, develops, and spreads.

That's exactly what students in 8th and 9th grade will investigate in this cross-disciplinary science course.

## FEEDING THE FUTURE



#### GRADE 9 | Biology, Physics/Chemistry, Geography

Feeding the Future is a teaching course about catalysis, artificial fertilizers and sustainable production.

In this course, students in groups each manage their own country, and their task is to ensure that their country's population does not starve.

They ensure this by producing enough food for everyone while minimizing negative impacts on the climate and environment.

### **TASTEMASTER**



#### GRADE 10 | Physics/Chemistry

How can we encourage more people to eat healthy and follow dietary guidelines?

Part of the answer might be found in the world of gastrophysics. In *TasteMaster*, students explore the physics and chemistry of food.

They'll get the chance to test different methods for changing the taste experience of vegetables, legumes, and water.



## THE DANISH UPPER SECONDARY EDUCATION PROGRAMMES

The LIFE Foundation offers LIFE Courses within the following Danish Upper Secondary Education programmes:

#### The Higher General Examination Programme (stx)

The focus in the stx programme in on general education and general study preparation.

#### The Higher Preparatory Examination (hf)

The two-year hf-programme focuses on general education and broader areas of professional life.

#### **The Higher Technical Examination Programme (htx)**

The htx programme focuses on subjects related to the fields of technical sciences, natural sciences and informatics.



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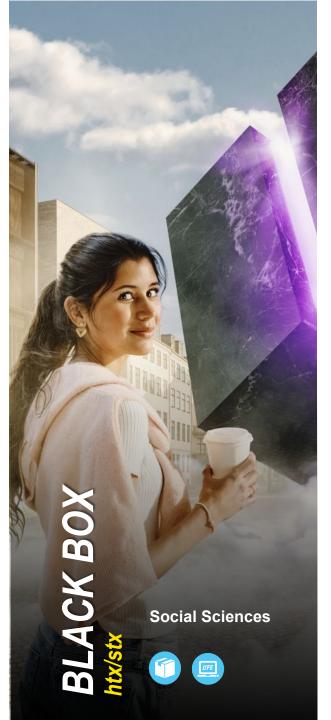


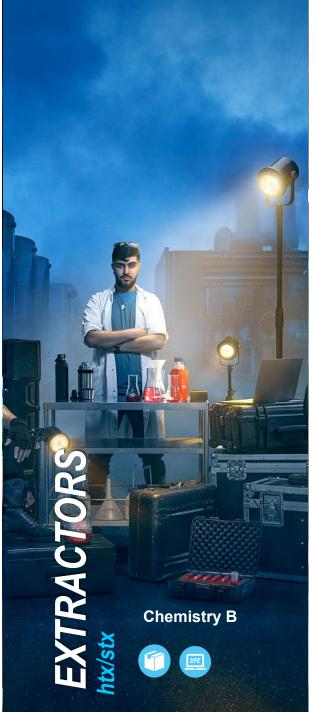
Digital platform



Teaching in a LIFE Lab









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Digital platform

3

Teaching in a LIFE Lab









## **BLACK BOX**



#### htx & stx | Social Sciences A/B

Al systems are becoming increasingly widespread in society.

But how does this affect our trust in public institutions when Al moves in?

Does trust in, for example, the healthcare or tax system decrease if it's an Al that made the diagnosis or calculated your taxes? Or could it actually lead to greater trust?

## **EXTRACTORS**



#### stx/hf/htx | Chemistry B

Imagine a world without taste, color, scent, or texture. Food and cosmetics would look completely different without additives extracted through the process of extraction.

But extraction is a resource-intensive process.

In *Extractors*, students plan and carry out their own experiment.

They investigate how changes in different variables affect an extraction — and then use their knowledge to optimize an industrial extraction process.

### FIGHT THE BITE



#### stx/hf/htx | Biology B

Each year, 2.7 million people are envenomed by snakebites resulting in around 100,000 deaths, and with many more suffering life changing disabilities.

Yet the treatment of snake bites is essentially identical to the ones developed more than a century ago, leading to unnecessary suffering and deaths.

In Fight The Bite, students collaboratively explore how antibodies can be used for both diagnosis and treatment of snakebite envenoming, and why the treatment of some global diseases like snake bites is neglected.

## LIFEBLOOD



#### stx/htx | Physical Education and Sport (PE) B and Biology A/B

In *LIFEblood*, students will experience firsthand how to measure and investigate physical health.

Over the course of a full day at the physiological laboratory on LIFE Campus, they will work as health researchers.

The students measure their physical condition and communicate their scientific knowledge and measurement results through recommendations on exercise, motivation, and health.

### UNBREAKABLE



#### htx/stx | Physics B

Unbreakable encryption can protect state secrets – or conceal criminal activity.

Secure communication is of vital importance for remaining safe in a highly digitalized society like Denmark.

This course explores how emerging technologies may challenge the ability to communicate securely in the future.

Students investigate whether quantum communication can enable truly unbreakable messaging - and consider the ethical question: Should everyone have access to it?



## WATER CHALLENGE



#### stx | Natural Geography B

Man-made climate change is a global challenge that is creating a need for local climate adaptive solutions.

In their lifetimes, today's upper secondary students will need to be a part of these solutions.

Water Challenge is an opportunity to learn about possible local adjustments with a focus on flooding.



## LIFE PLATFORMS

#### **LIFE KITS**



#### **DIGITAL PLATFORM**



#### LIFE LABS



#### **LIFE CAMPUS**





## LIFE CAMPUS

Our headquarters near Copenhagen holds offices and a learning centre with four high-tech science laboratories for visiting school classes.

## REGIONAL LABS

SOUTH DENMARK ODENSE



NORTH JUTLAND AALBORG



CENTRAL JUTLAND AARHUS



ZEALAND VORDINGBORG



With one more to come in West Jutland, Esbjerg ...



## MOBILE LABS

MBL 1

MBL 2

MBL 3

MBL 4

















