

# Teach Coding and Robotics

Camp for K-12 teachers

6D5N in Oulu, Northern Finland



# Any teacher can – and should - teach coding and 21st century skills.

Most countries have already included computational thinking and coding in their national curricula. We help ordinary teachers to become experts of *teaching* coding. This camp is a hands-on introduction of a pedagogical model how to teach coding and robotics in a cross-subject, project-based way in for K-12 grades.

## For whom?

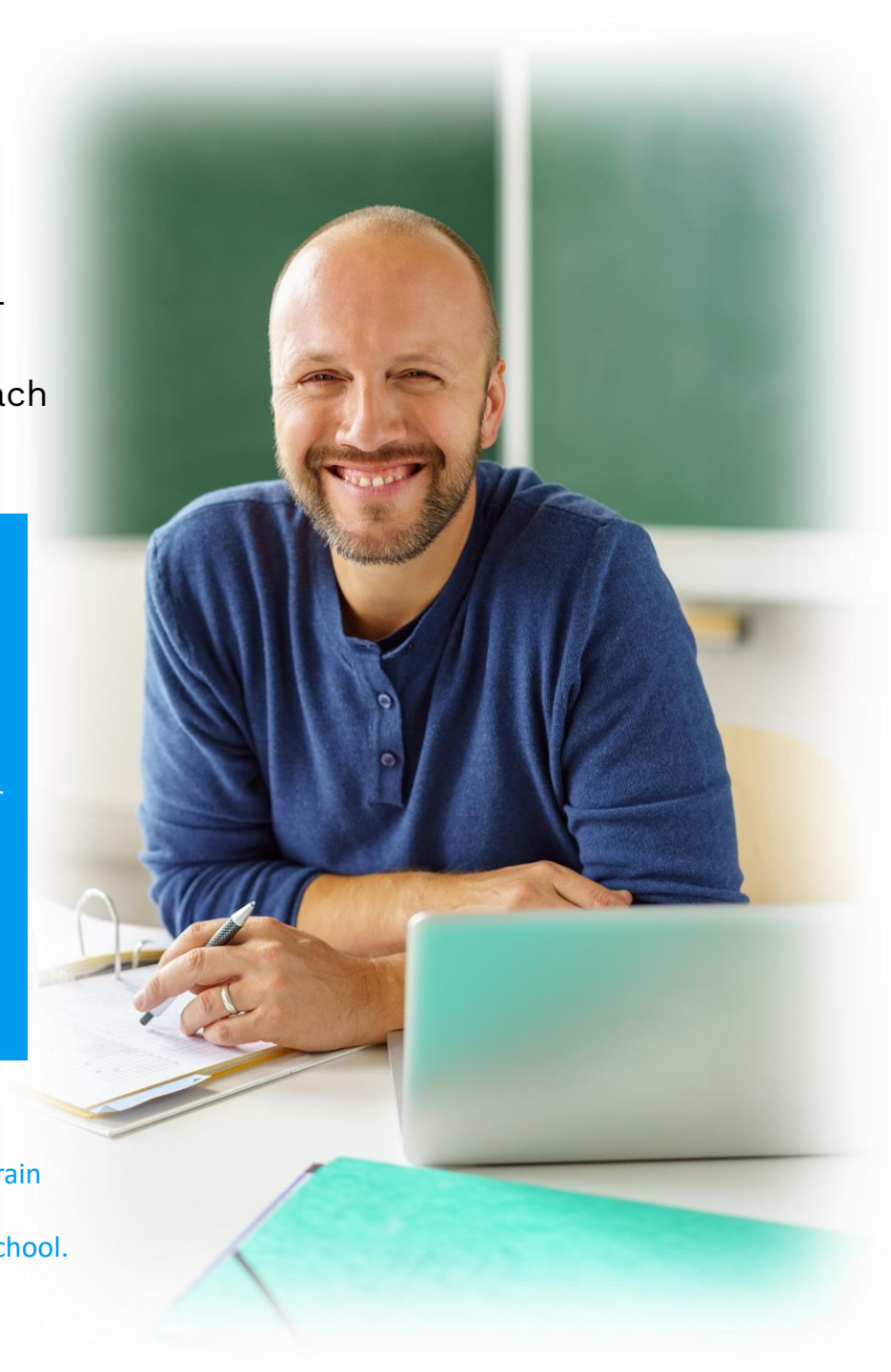
- Class teachers and subject teachers in K-12
- Teachers who want to develop their teaching practice to include coding or robotics
- Teachers who wish to stay ahead in the professional competition
- Beginner - intermediate level: no prior experience in coding or robotics is required, but camp will offer new perspectives and projects for those who already teach coding

## What?

- Pedagogical principles for 21<sup>st</sup> century coding education
- Hands-on coding and robotics projects for primary and secondary school
- Participants receive teaching materials that support facilitating cross-curricular projects in classroom



With our experience of teaching future skills to children and students since 2014, we have developed a pedagogical model that supports building future skills in an optimal way. We train teachers and provide expert services for developing school education. Our **future skills curriculum** and teaching materials are in use in several countries from pre-school to high school.



An aerial photograph of Oulu, Northern Finland. The image shows a cluster of colorful houses (yellow, green, blue, red) with dark roofs, situated on a hillside overlooking a large blue lake. A road with a white car and a pedestrian is visible. In the foreground, a concrete bridge with a white railing spans across a river. A white bus with 'SAAGA TRAVEL' written on its side is driving on the bridge. The background features a dense forest and a marina with many sailboats.

# Oulu – Northern Finland

- Easily accessible by flying from Helsinki (1 h)
- Finland's 5th largest city and largest city in Northern Finland
- Finland's leading destination for educational visits
- European Capital of Culture 2026
- Easy to combine with nature destinations and/or to include a visit to Santa Claus Village in Rovaniemi




# Themes and topics

- Coding principles and motivation
- Basics coding concepts
- Developing computational thinking
- Objective of curricula internationally, integrating programming into curriculum
- Programming for grades 1-3, 4-6 and 7-9
- Code.org, Scratch and beyond
- Programming with BBC micro:bit
- Animations, game basics, game programming concepts
- Graphical/semi-textual coding environments
- Robotics & embedded systems, principles and environments
- Project-based peer learning
- Moving from block language to textual language
- Hands-on implementation of a project suitable for own grade
- Classroom visit

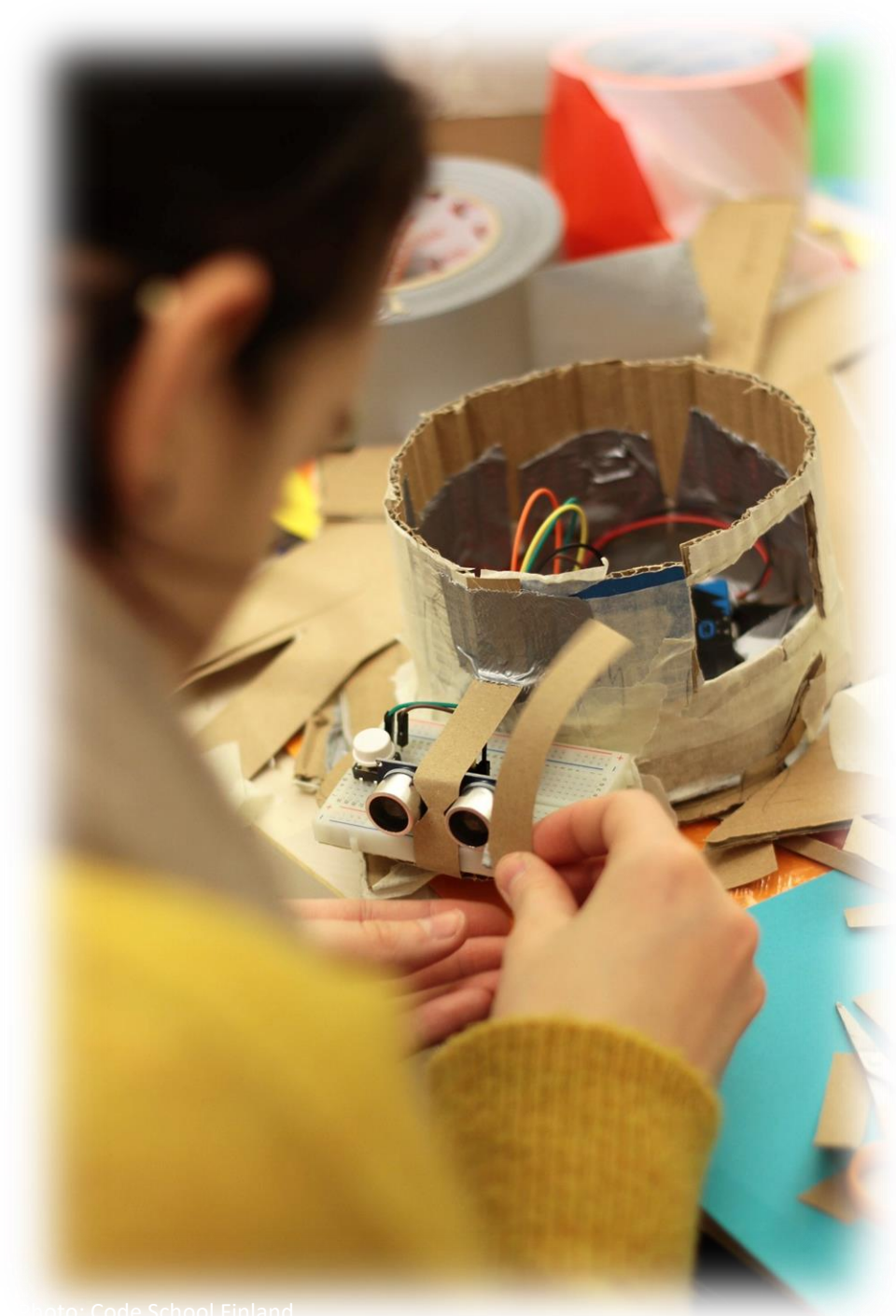
*This course provides a kick-start into bringing programming and hands-on robotics into the classroom and curriculum in a cross-subject, project-based way.*



# Course Schedule

	Monday	Tuesday	Wednesday	Thursday
	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Course introduction</li> <li>• What is coding? Robotics?</li> <li>• Computational thinking: Concepts, practices and perspectives</li> <li>• Best practices in teaching coding</li> <li>• 21 Century Coding Pedagogy</li> <li>• Finnish curriculum</li> </ul>	<p><b>Principles of project-based programming</b></p> <ul style="list-style-type: none"> <li>• Making games and multimedia creations</li> <li>• Animations and sound effects</li> <li>• Demonstrating important concepts</li> <li>• Classroom practices</li> </ul>	<p><b>Project workshop</b></p> <ul style="list-style-type: none"> <li>• Project ideas and problems are shared and discussed</li> <li>• Solving real world problems with robotics</li> <li>• Normal project work with peer-learning and guidance from the trainer</li> <li>• Sharing the results</li> <li>• Reflection</li> </ul>	<p><b>Python programming for beginners</b></p> <ul style="list-style-type: none"> <li>• From visual to textual language</li> <li>• Python in trinket.io and makecode.org</li> <li>• CT perspectives</li> </ul>
	<p><b>Visual programming for beginners</b></p> <ul style="list-style-type: none"> <li>• Games for learning</li> <li>• Visual programming environments</li> <li>• Scratch introductions (robotics)</li> <li>• CT practices</li> <li>• Practise core concepts</li> <li>• Start your own programming project</li> <li>• Reflection (pedagogy diary)</li> </ul>	<p><b>Learning robotics</b></p> <ul style="list-style-type: none"> <li>• Embedded systems and automation</li> <li>• Robotics concepts and practises</li> <li>• AI in robotics</li> <li>• Classroom practices</li> <li>• Exploring robotics: Mechanics, programming and electronics</li> </ul>	<p><b>Classroom visit</b></p> <ul style="list-style-type: none"> <li>• Code club or robotics center</li> <li>• Watch Finnish students working with their projects *) subject to availability</li> </ul>	<p><b>Pedagogy workshop</b></p> <ul style="list-style-type: none"> <li>• Sharing ideas and problems about teaching programming and robotics in classroom setting</li> <li>• Finalizing the diary and project plan</li> </ul> <div style="border: 1px dashed red; padding: 5px; display: inline-block;"> <p><b>Badges and diplomas</b></p>  </div>
<b>Themes</b>	Programming (visual)	Robotics concepts	Robotics in practise	Programming (textual)
	CT concepts	CT practices	CT perspectives	





# Camp Facts

**Group size:** Min. 15 participants

**Profile:** Teacher qualification or equivalent practical experience

**Previous know-how:** No requirements in relation to coding or robotics

**Season:** Throughout the year excluding main public holidays

**Reference price: 1.689 €/participant\***

\* Price includes commission for tour operators and VAT for corporate customers domiciled outside Finland. See terms for more details.

# Itinerary

## Sunday

Arrival in Oulu on a connecting flight from Helsinki  
Check-in and dinner

## Monday-Thursday

Breakfast

**9.00-15.00 Teach Coding and Robotics in K-12 camp**

Lunch break at noon

**15.30-18.30 Free time activity**

Dinner

## Friday

Breakfast

Free morning & lunch

Afternoon flight back home

## Optional add-ons (+ 1-2 days)

Day trip to nearby nature destination

Day trip to Ranua Wildlife Park and Santa Claus Village





# Price includes

- Teaching Coding and Robotics in K-12 camp
  - Optional online pre-workshop 1h
  - Teaching, materials, premises, wireless network, technical equipment and robotics devices and software for the duration of the camp in Oulu (4 days)
  - A certificate by Code School Finland
  - Maximum 1:10 instructor-participant ratio
  - Language: English. Translation available if separately agreed.
- 5 nights accommodation in shared twin room
- 5 x breakfast, 4 x lunch and 4 x dinner at the camp venue; farewell dinner at a Finnish restaurant
- A visit to a coding class with Finnish students \*)
- Transfers
- Guided Oulu City Tour by an authorized Oulu City Guide
- Guided seasonal nature activity including snack and winter clothing in wintertime (overalls, gloves, shoes and beanie)

\* Subject to availability. Replaced with other activity during school holidays.





# Price does not include

- Laptop for personal use during the camp. We recommend participants to bring their own.
- Personal travel insurance
- Snacks and beverages. Available for extra fee.
- Translator during camp. Available for extra fee in Japanese and Chinese.
- Local tour leader / leisure time instructor. Available for extra fee in English, Japanese or Chinese.

# Venue

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The camp venue is a small, family-owned hotel, located 5 minutes' drive from Oulu Airport and 15 minutes' drive from the Oulu City centre by private transportation. Public bus from the hotel to Oulu City centre takes appr. 25 minutes.

The hotel is a very safe environment for groups. The hotel is located by Kempeleenlahti Bay and surrounded by nature. There is a 1-km nature trail with bird observation tower starting from the hotel.

In autumn and winter, this is a good location to observe the Northern lights.



# Venue

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- Accommodation in shared twin rooms.
- Meals are organized at the cozy hotel restaurant.
- Hotel's large meeting room functions as the venue for the camp program.
- Hotel sauna is heated for the guests in the evenings at 18.00-21.00.
- Free Wi-Fi for guests.





# Free time activities

**Monday:** guided Oulu City Tour and free time to explore the city centre

**Tuesday:** Seasonal nature activity, Eg.

***Adventure on the frozen sea (January-March).*** Can the sea really just freeze? I mean all the way? A trip to the ice of the frozen sea, where it is found that the sea does not freeze all way to the bottom and the fish are not frozen just waiting for the summer to come! Ice drilling and ice fishing are Arctic experiences at their best. Maybe we catch some fish as well!

***Snow sculpting for beginners (January-March).*** Learn basic techniques how to use snow as a material while creating your own piece of art and getting familiar with building of snow and ice.

***Canoeing safari (May-October).*** Get to know the city of Oulu and the Oulujoki river delta seen from the water. Along the canoeing route, you will see several interesting sights and may be surprised by the wonders of wilderness and how near the city they actually are.

**Wednesday:** Shopping

**Thursday:** Farewell dinner at a Finnish countryside restaurant together with the camp instructors



# Safety

- Finland is one of the safest countries in the world
- We follow all current health safety requirements carefully
- If the customer has their own more stringent safety requirements, we will comply with them
- Finland has a well-functioning health care system. There are several private clinics in Oulu. In emergency cases, Oulu University Hospital is on call 24/7. Distance to Oulu University Hospital is 15 minutes from the camp venue.

# Terms and cancellation

Saaga Travel Oy is the responsible organizer of the travel package (accommodation, meals, transfers and free time activities). Code School Finland is the responsible organizer of the educational content of the package (Teach Coding and Robotics in K-12).

Given reference price 1.689€/participant is valid for corporate customers domiciled outside Finland. For corporate customers residing inside Finland, the educational content is subject to value-added tax and therefore the reference price of the package is 1.830 €/participant. Prices are valid when we have confirmed your order in writing. We reserve the right for price changes due to changes in taxation, fuel prices or other similar reasons beyond our control.

All bookings must be prepaid. Booking fee 1.000 €/group is to be paid immediately upon booking. The booking fee is non-refundable and will be deducted from the final invoice. Payment 100 % of the total price must be paid 32 days prior to arrival. Invoicing fee 6 €/invoice will be added to each invoice.

Cancellation is free of charge if it is made 32 days before arrival. If cancellation is made 31-22 days before arrival, cancellation fee is 50 %. If cancellation is made 21-15 days before arrival, cancellation fee is 75 %. If cancellation is made 14-0 days before arrival, cancellation fee is 100 %.

Rescheduling of a booked camp to another time is free of charge until 15 days before arrival. If rescheduling is made 14-1 days before arrival, actual costs incurred will be charged, consisting of but not necessarily limited to accommodation, meal and camp venue costs.

If the cancellation or rescheduling is due to restrictions imposed by the government or health authorities, the conditions for cancellation or rescheduling apply on a case-by-case basis. The premise is that the actual costs incurred will be charged.

We reserve the right for changes.



## Contact:

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### *Travel package*

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### *Educational content*

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**SCAN ME**

More camp details are available on our website.

Access by scanning the QR code or go to

<https://pages.codeschool.fi/teach-coding-robotics>

