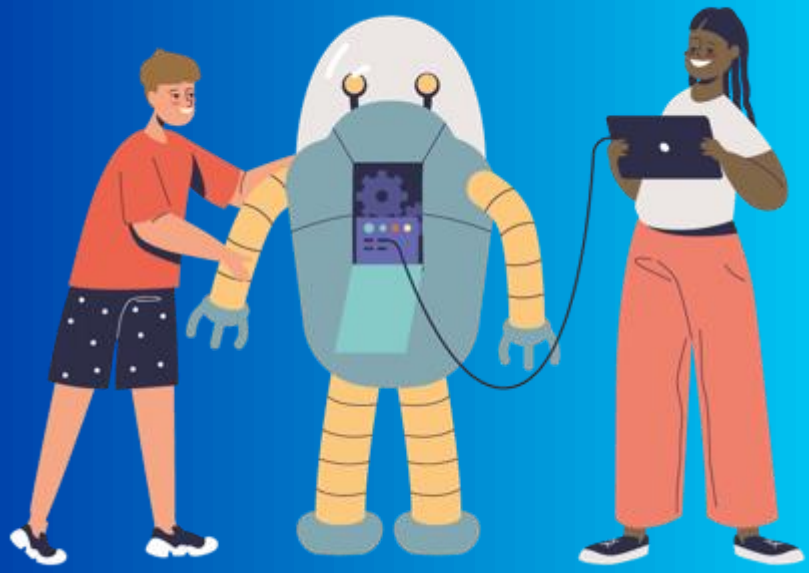

STEAM
IN OULU

ToolCamp

"an annual celebration of inventiveness, creativity, and collaboration, during which children and young people of different ages work with challenges and brainstorm solutions to them"



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ToolCamp IN PRACTICE

- ToolCamp -project consist of working on a solution to the selected challenge and of a ToolCamp day.
- Each project should be implemented through the STEAM process.
- The entire process must be documented and presented together with the solution to the challenge to an audience and the jury at the ToolCamp day -event.
- ToolCamp takes place once a year and the challenges will be published at the end of each academic year for the coming academic year.

SIVISTYS- JA KULTTUURIPALVELUT

Check out the STEAM manual for more tips: STEAM Oulussa – STEAM IN OULU

WHO CAN PARTICIPATE?

- ToolCamp is open to children and young people in pre-primary school, comprehensive school (grades 1-9) as well as to upper secondary education students.
- Challenges are solved in groups of 3-5 people.
- The program is suitable for all types of children and young people, combining different subjects and teaching methods.

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NOTE! PARTICIPATION IN TOOLCAMP FOR THE ACADEMIC YEAR 2023-2024 IS ONLY POSSIBLE FOR SCHOOLS IN OULU.

ToolCamp -DAY

- At the ToolCamp day, representatives chosen by the participants themselves present their work at exhibition points and through short presentations.
- At the ToolCamp day, the jury evaluates the work, outputs, and presentations of the groups.
- Throughout the day, there is also a program for teachers.
- Guests are welcome to participate in the main event.

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COMPETITION CATEGORIES AND CRITERIA

The jury awards works in different **categories***, each with its own series for kindergarten, primary school, secondary school, and secondary education groups.

COLLABORATION: solidarity, role allocation, documentation of collaboration

RESPONSIBILITY: life cycle, ecological aspects, ethics

APPLICATION OF TECHNOLOGY: use of technology in information retrieval and documentation, collaboration with technology, digital design and manufacturing

PROBLEM-SOLVING AND INNOVATION: description of the solution and its justifications, use of the target group

COMMUNICATION AND VISUAL APPEAL: description of the process, clarity of documentation

FIGHTER

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OVERALL COMPETITION

Rating scale: The presentation by students highlighted the aspects mentioned in the criteria				
Not at all	Little	Some	Quite a lot	Much
0 points	1 point	2 points	3 points	4 points

COMPETITION RULES

1. Technology must be used in the production of the solution or as part of the solution itself.
2. The work must be done in groups.
3. Digital design and manufacturing are recommended to be included in the solution.
4. The solution to the challenge must be tested.
   → Children and young people present the solution to the selected target group, which tests it.
   → The group makes adjustments to the solution based on the target group's feedback.
5. The entire process is presented at the event.
   → The format can be anything (e.g., poster, video, PowerPoint presentation).
   → Pedagogical documentation of the process is important.
6. The solution can also be presented in a functional way (e.g., a game or play).
7. All solutions must reflect that, in solving them, attention has been paid to AGENDA2030 goals.

ToolCamp 2024

An Example on how to participate

Timetable

The ToolCamp challenges have been published in Spring 2023.

Groups have selected a challenge and have been working on it in various ways.

Registration of the selected groups must be made by 15.4.2024

ToolCamp Day is organized between 21.-22.5.2024

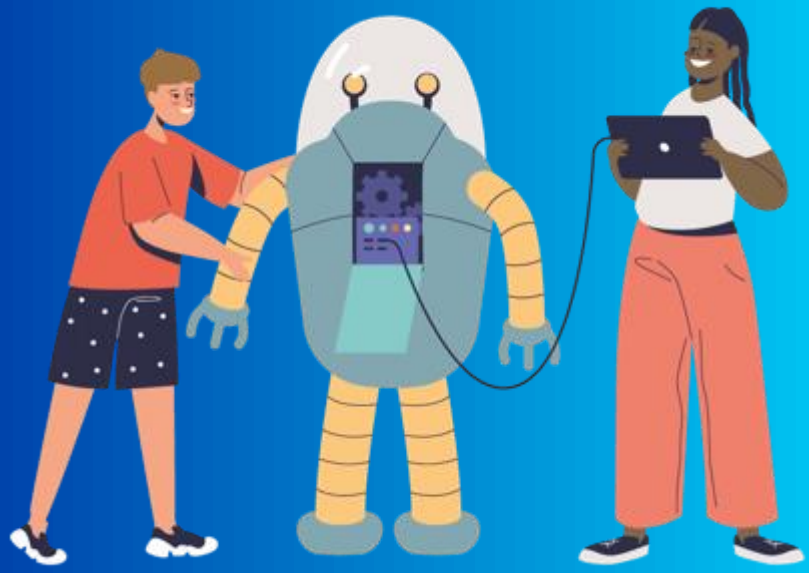
ToolCamp day´s competition series

Day 1	Day 2
5-8 –years	K-16
Grades 3 to 6	
Grades 7 to 9	

- On the ToolCamp day can participate maximum 2 groups from each kindergarten, primary school, secondary school or upper secondary school, from a comprehensive school the participation limit is 4 groups.
- On the second day, there is only one serie open to all target groups.
- Participating groups for the ToolCamp –day are selected in a small-scale competition organized at each unit (school / kindergarten).
- The competition can also be entered in mixed groups of different ages.
- The group must be present at the event to present their work (excl. Hospital School).

ToolCamp 2024 Challenges

1. Energy from nature
2. Wellbeing and safety
3. The city of the future



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Theme 1: Energy from nature

Design an innovative solution to generate energy in nature or while moving in it.

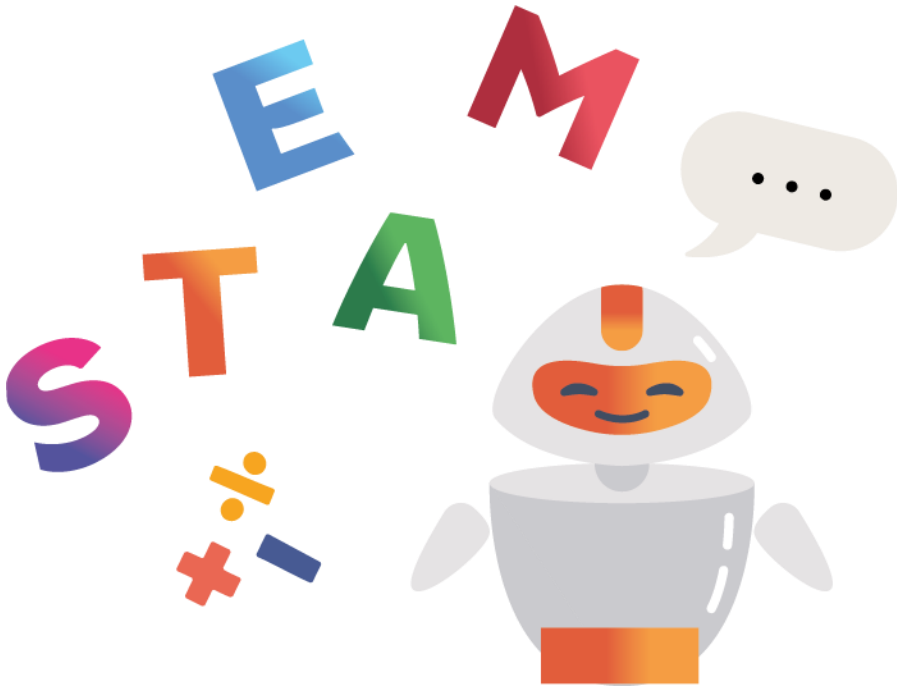
The solution can be related to individual actions, extend to the local community, city level, national level, or globally.

Theme 2: Wellbeing and safety

Design a solution that increases equality and non-discrimination in a group or unit and:

1. reduce loneliness or
2. prevents digital bullying, or
3. is a solution to increasing immobility

The solution must promote a safe, communal and accepting atmosphere.



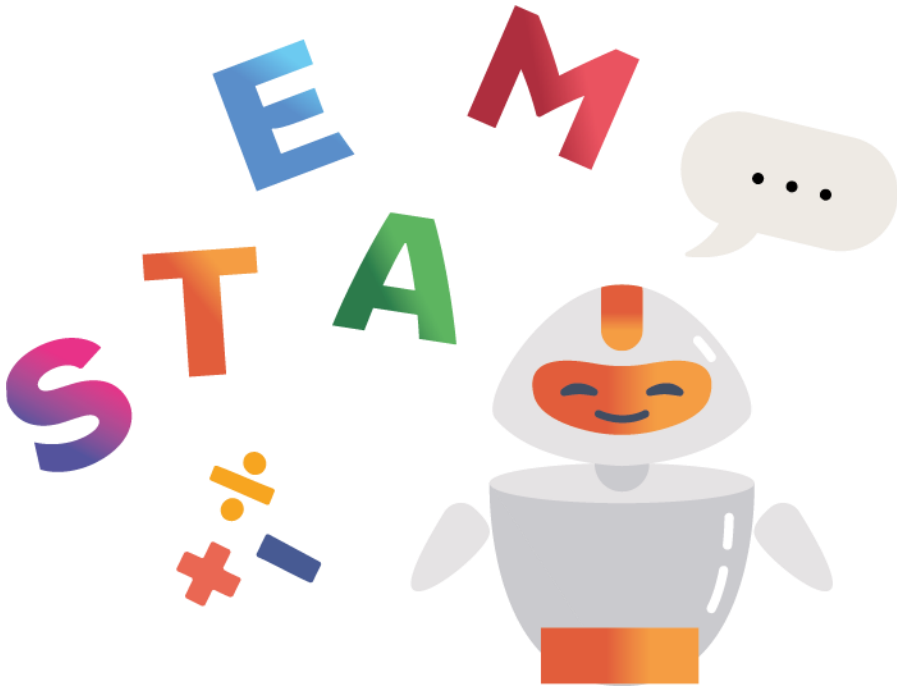
Theme 3: The city of the future

a) Plan how the sea and other waterways in Oulu can be made a visible part of the everyday life of city residents

b) Design a solution for developing the circular economy. Think of innovative solutions, e.g. how sharing, lending, renting, co-owning could develop

c) Imagine a car-free city centre in Oulu. Plan activities for the large parking lots by the market square to bring joy to the city's residents. How can the market square be made attractive and comfortable for children and young people?

d) Design a solution to increase reading and enthusiasm for reading in public spaces, e.g. kindergartens, schools, libraries, Valkea, or Ideapark. Consider what needs to be there and what kind of activities can be organized.



ToolCamp

Each challenge solution is assessed based on the following criteria

COOPERATION

Solidarity

Students have shared responsibility for the design challenge.

Students make decisions about content, process and solution together.

Role Allocation

Students depend on each other's contributions in solving the design challenge (each group has a specific role)

Documentation of cooperation

Students describe their collaboration in depth.

Students document their collaboration (e.g. pictures, video, models).

Students describe successes, challenges, choices/refusals, and their different roles in their collaboration.

Each group member can answer questions related to the group´s work, content, process, and solution.

Sustainability

Life cycle

The product or service designed by students is as durable as possible and withstands the test of time.

All material are as recyclable as possible, or they are already been designed to incorporate recycled materials to the greatest extent.

Ecology

In the product designed by students, minimal natural resources are wasted, and it is environmentally friendly.

Students describe and justify their material choices in their solution.

Ethics

The product or service designed by students takes into account all user and special interest groups as much as possible.

Application of technology

Using technology to support information retrieval and documentation

Students use information technology throughout their process – for example, when conducting their own field studies and constructing knowledge.

Collaborate through technology

Students also collaborate digitally and present their information and models using technology.

Digital design and manufacturing

Students use digital design and manufacturing to create their solution.

The students' solution includes digitally implemented areas.

PROBLEM-SOLVING AND INNOVATION

Description of the solution and reasons for it

Students' solution is innovative.

Students' solution is feasible in real life.

Students can justify and explain how they arrived at their solution.

Audience usage

Students test the solution with their chosen target group.

Students improve their solution based on the feedback from the target group.

Students can justify the application of the solution and its significance for the chosen target group.

Students use the information obtained through field studies to develop their solution to the design challenge.

COMMUNICATION AND VISUALITY

Process description

Students describe their process through a design challenge, field research, idea generation, and solution to make the connection clear.

Students describe what they have learned in the process and how they can apply their learning in future design challenges.

Comprehensibility of documentation

Students' communication is clear.

In the documentation and solution created by students, visual aspects have been considered.

From students' presentation, it is evident that their work has progressed according to the stages of the design process.

FIGHTER

Commitment, attitude & creativity

Students demonstrate high commitment and motivation for their process and solution.

Students continue to work even when they face great adversity.

Students find original and diverse solutions to their design challenge.

For more information on Toolcamp

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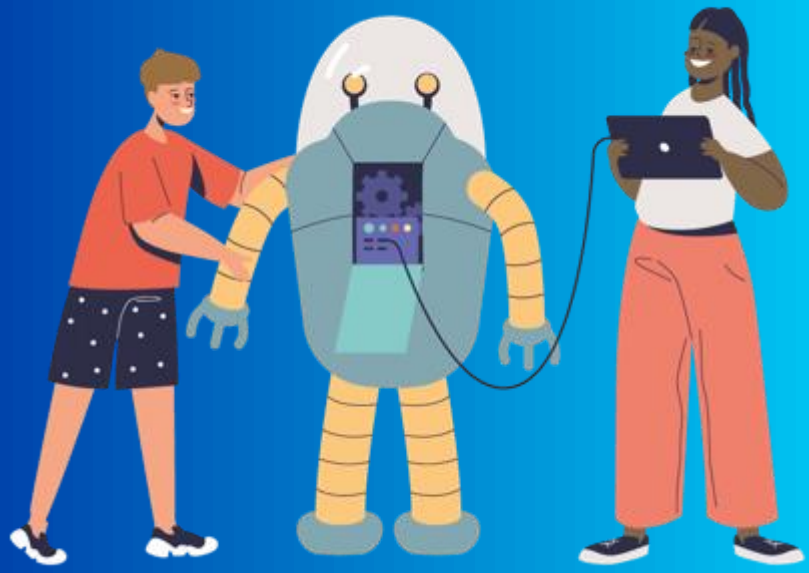

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