

# Arctic Education



Arctic Education offers a novel approach to ICT education from Finland.

The ICT program is targeted at early childhood education, preschool, and grades 1-5. The learning approach emphasizes play-based, project-based, and action-based learning.

The program fosters students' positive attitudes towards ICT and guides them in understanding its importance in their lives and in society more broadly. Students are guided to become innovative and capable builders of our digital future.

Our vision is to equip young students with the skills and attitudes to excel in our constantly changing information society.



#### This program develops:

Technical skills and understanding

- Conceptual understanding
- Computing skills

#### Smart ICT use

- Ethical considerations
- Responsible practices
- Safety measures
- Ergonomics

#### Creative applications

- Innovation and originality
- Inquiry-based projects

#### Transversal skills

- Collaboration
- Reflection



#### Students will be able to:

- Understand the core concepts of computers and the internet
- Use ICT responsibly and effectively
- Create digital content
- Master the basics of computational thinkingUnderstand the core concepts and uses of Al



## DELIVERT



The lesson plans emphasize both individual and group work, incorporating action-based, project-based, and play-based approaches.

The activities promote student-centered learning, social interaction, and multi-sensory engagement.

At the end of each academic year, a reflection and presentation of the lessons learned are exhibited in a showcase event.

#### **Digital platform**

All program materials are accessible on a digital platform, which offers separate access portals for teachers, and for students along with their parents.

The digital platform also features a student cloud—a portfolio that facilitates formative assessment, allows work to be shared with parents, and enables students to revisit their work even in later grades.

#### Assessment

Learning goals and related assessment rubrics are provided for each lesson.

The success of students' work and performance is discussed in a versatile manner. Students are informed of the learning objectives and are guided to reflect on their progress both individually and with peers.



The Junior program is targeted at students aged 3-4 years old. The program consists of six projects, each with a duration of five hours.

Each project is presented in the form of a story where the characters encounter a challenge, encouraging students to solve problems alongside them.

Each project is divided into three stages:

- Warm-up stage: Students are introduced to the project through engaging, playful activities that spark their interest and curiosity.
- Core stage: Interactive learning moments involve hands-on activities, where the main concepts are taught, allowing students to explore, understand, and solve challenges.
- Wrap-up stage: This stage consolidates learning by reviewing key points, encouraging reflection, and allowing students to demonstrate what they have learned.



### TEAR A

#### **Project 1: Computers**

Learning goal: To understand the basics of what a computer is.

#### **Project 2: Programming**

Learning goal: To develop computational thinking skills.

#### **Project 3: Digital Storytelling**

Learning goal: To use digital storytelling methods to recap the understanding of the concepts of computers and programming.

### TEAR B

#### **Project 1: Artificial Intelligence**

Learning goal: To understand that people can teach skills to a robot.

#### **Project 2: Internet**

Learning goal: To understand that the internet connects computers.

#### **Project 3: Digital Storytelling**

Learning goal: To use digital storytelling methods to recap the understanding of the concepts of artificial intelligence and the internet.

# PRESCHOOL & PRIMART



#### **Unit 1: Understanding core concepts**

The first unit concentrates on clarifying the core concepts of computers and the internet. The learning activities are implemented offline.

#### What is a computer

Operating systems

Computer operations

- Variety of computers
- Peripherals
- Computer components
- 3D printing
- Hardware and software
- Most common operating systems
- Compatibility between operating
- systems
- Using peripherals
- On/off
- Charging
- Log in/log out
- Input/output
  - File management
  - Software applications
  - Troubleshooting
- Intranet/Internet
  - Routers
  - Servers
  - Clouds
- Digital platforms Search engines
- Request/response
- Digital footprint
- Online security

#### Unit 2: Responsible and effective use of ICT

The second unit concentrates on responsible and effective use of ICT. The learning activities are implemented both offline and online.

Recommended use of ICT (offline)

- Passwords
- Respectful interaction in digital environments
- Healthy use of ICT

Computer and Internet

- Peripherals
- Software
  - Computer operations

Critical thinking in media contexts (offline)

- Interpretation
- Analysis
- Evaluation

#### Information management

- Gathering
- Evaluation
- Structuring and storage

#### **Unit 3: Artificial Intelligence**

The third unit concentrates on the core concepts and uses of Al. The learning activities are implemented offline and online.

- Machine learning
- Applications of Al (tools, everyday Al)
- Ethical and effective usage

#### Unit 4: Coding

The fourth unit concentrates on developing computational thinking skills both offline and in visual coding environments.

Computational thinking skills

Coding

- Problem decomposition
- Coding languagesCoding environments
- Pattern recognition
- Logical reasoning
- Algorithmic thinking
  Debugging technique
- Debugging techniques

#### **Unit 5: Production and creativity**

The fifth unit concentrates on creating digital content. The learning activities are implemented offline and online. Furthermore, a reflection and presentation of the lessons learned is exhibited in a showcase event.

Digital storytelling

Showcase event

- Creating a script
- Reflection
- Presentation
- Editing media filesMultimedia production





### **Contact:**

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