Electronics and Programming Basics - Reference to Finnish National Curriculum (2014), Ages 13-15

Learning objectives in Mathematics (p. 374-375)

- T9: To guide the student to apply ICT in mathematics and problem solving.
- T20: To guide the student to develop their algorithmic thinking and skills of applying mathematics and programming to solve problems.

Learning Objectives in Physics (p. 389-390)

- T8: To Instruct the student to understand the principles and significance of technological applications and encourage the student to create, plan, develop and apply simple technological solutions together with others.
- T9: To Instruct the student to utilize ICT to gather, handle and present information and measurement results and to support the learning of the student with clarifying simulations.

Learning Objectives in Handicrafts (p. 430-431)

- T1: To instruct the student to plan their work and to brainstorm, inquire and experiment.
- T3: To instruct the student to get familiar with and utilize different tools, materials and functional ways of working and to develop innovations.
- T6: To instruct the student to utilize the possibilities of ICT in the planning, making and documenting handicraft-projects and in producing and sharing information collaboratively.
- T7: To instruct the student to learn the importance of handicraft-skills and technological development in their private life, society, entrepreneurship and working life.

Transversal competence goals (p. 281-285)

- **L1: Thinking and learning to learn.**
  "Cross-curricular, inquiry-based and active work on the phenomena of students' interest is important not only for thinking skills, but also for motivation to learn and post-primary education choices."

- **L4: Multiliteracy**
  "Media literacy is deepened by participating and working with different media. Students are encouraged to express their views through a variety of means of communication."

- **L5: ICT knowledge**
  "Students are encouraged to use ICT on their own initiative in a variety of learning tasks and to choose the appropriate working methods and tools for different tasks. The aim is to deepen their understanding of the use and operation logic of various hardware, software and virtual services."

  "Students learn to systematize, organize and share files and to make various digital products independently and together. Programming is practiced as a part of studying various subjects"

- **L6: Working life skills and entrepreneurship**
  In active learning situations, students learn to design work processes, set hypotheses, experiment with different alternatives, to draw conclusions and to find new solutions as circumstances change.