

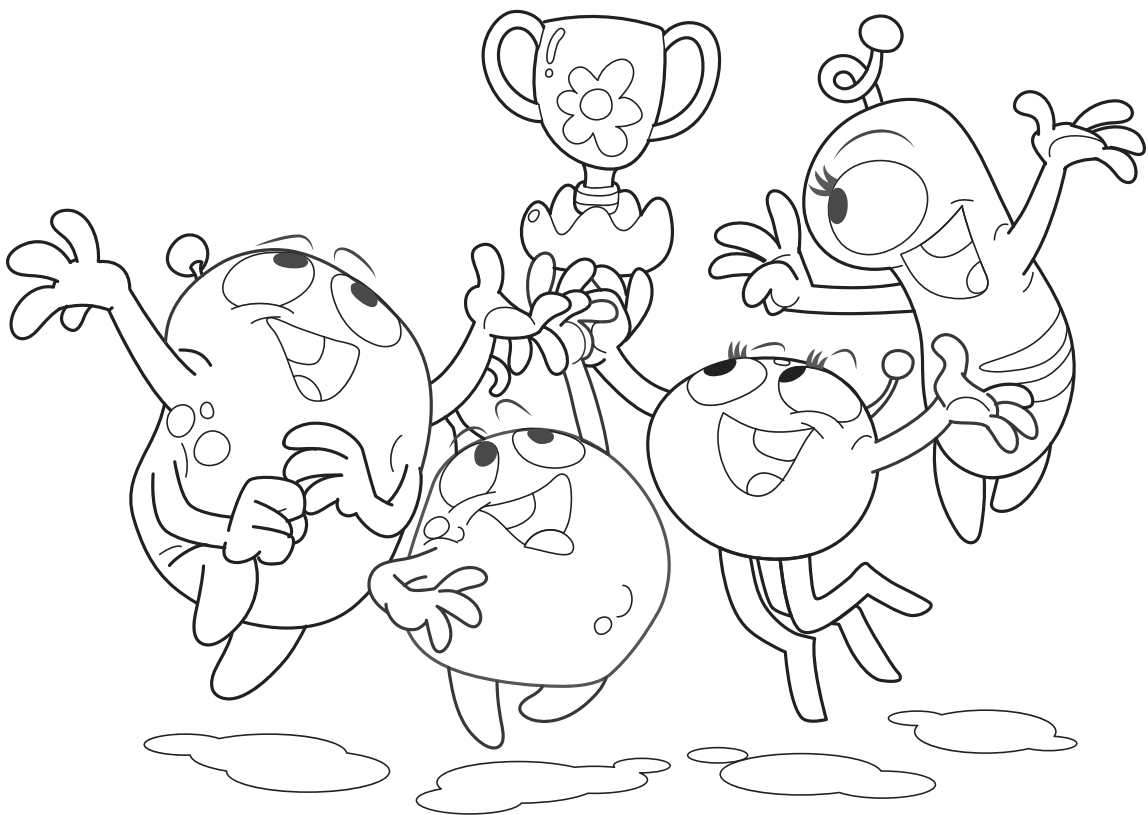
This Works!

A Technology Education Project

This works! – A curriculum summary for the technology education programme

This works! is a new technology education programme that is targeted at all first graders in Finland. It has been designed on the basis of the elementary instruction section of the Finnish national core curriculum. This approximately seven-week multidisciplinary learning programme focuses on the development of technology skills, transversal competence, cooperation, mathematics and the natural sciences.

In schools, technology education has been integrated into a number of different subjects and education in general. That's why this learning programme has been designed to break subject boundaries and combine the curriculum's themes and objectives with a multidisciplinary approach. This works! highlights areas that are essential for technology education, such as computational thinking, technical construction and craftsmanship.



Transversal competencies

TC1: Thinking and learning how to learn

Encouraging active participation and strengthening the learner's ability to make observations. Providing space for wonder and insight. Guiding learners to use information in problem-solving and to invent new things. Enriching imagination and instilling a joy of learning. Encouraging learners to develop their ideas in collaboration with others. Stimulating an interest in the surrounding world and strengthening the learner's ability to structure, name and describe their environment. Helping the learner notice their progress and identify their own strengths.

TC2: Cultural competence, interaction and self-expression

Encouraging the learner to engage in positive interaction and cooperation. Providing guidance on how to work flexibly, treat other people with respect, and follow good manners. Providing the learner with opportunities to experience and interpret art and cultural heritage. Encouraging the learner to express themselves in a variety of ways, for example, through symbols, images and other visuals, drama, music and movement. Including a wide range of opportunities for doing handiwork and using imagination and ingenuity.

TC3: Self-care and managing everyday life

Encouraging the learner to take care of themselves and others. Practicing skills that are important for self-care and daily life and increasing well-being in your environment. Helping the learner to take responsibility for both their own and joint work. Developing emotional skills and social skills. Providing basic information about technology and guidance on rational technological choices. Guiding the learner towards choices and practices that will help them adopt a sustainable lifestyle.

TC4: Multi-literacy

Helping the learner to understand diverse forms of cultural communication, for example, with the aid of verbal, visual, audio, numerical and kinaesthetic symbol systems and combinations thereof. Interpreting and producing information in various formats, such as written, spoken, printed, audio-visual or digital. Developing the ability to acquire, combine, edit, produce, present and assess information in various formats, in different environments and situations, and with the aid of various tools. Supporting the development of critical thinking and media literacy.

TC5: Information and Communication Technology (ICT) competence

Helping learners to understand the key concepts of information and communications technology, and the principles of its use and operation. Helping learners to develop their practical ICT skills by compiling their own outputs and documenting the learning programme. Practicing how to use devices and software.

TC6: Working life skills and entrepreneurship

Practicing how to work both independently and collaboratively. Helping the learner to understand their role in a larger whole. Learning reciprocity and perseverance in achieving common goals. Practicing how to reconcile your own ideas with other people's ideas. Learning how to plan the work process, form a hypothesis, experiment with different alternatives, take a long-term approach, and appreciate working together. Practicing how to deal with failure and disappointment. Finding out about different professions and entrepreneurship.

TC7: Participation, influencing, and building a sustainable future

Helping to ensure active participation from all students. Practicing decision-making and responsibility. Developing negotiation and conflict resolution skills. Thinking about a sustainable future and practicing things to further that goal.



SUBJECT-SPECIFIC OBJECTIVES AND CONTENT IN THE FINNISH NATIONAL CURRICULUM

Mathematics

Developing logical, accurate and creative mathematical thinking. Helping learners to understand mathematical concepts and structures and developing their ability to process information and solve problems.

S1 Thinking skills finding similarities, differences and regularities; comparing and classifying; identifying cause-and-effect relationships; an introduction to the basics of programming	T1 interest and enthusiasm for mathematics, a positive self-image and developing self-confidence T2 making observations from a mathematical perspective	modules 1–7, particularly modules 2 and 4
S2 Numbers and calculations practicing sequential skills, making comparisons, putting numbers in order, decompositions of the numbers 1–10	T6 developing a concept of number, the principle of the decimal system T7 the principles of basic calculations	modules 1, 3 and 4
S3 Geometry and measurement understanding the three-dimensional environment; identifying plane geometry; studying, building and drawing solids and plane figures; measuring	T9 geometric forms T10 the principle of measurement	module 4
S4 Data processing and statistics	T12 writing step-by-step instructions and following instructions	modules 2, 5 and 7



Environmental studies

Awakening interest and curiosity in environmental phenomena with the aid of various gamified problem-solving and research tasks. Practicing how to structure and name your environment, plus various issues relating to personal wellbeing and safety.

S1 Growth and development Promoting emotional skills and mental wellbeing, respecting yourself and others	T10 teamwork skills, emotional skills, respecting yourself and others T14 self-expression and justifying your views	modules 1–7, particularly module 2
S2 How to behave at home and school How to behave at home and at school, practicing safe working, describing technology and phenomena, everyday etiquette, preventing bullying	T11 using information and communication technology to record and present observations	modules 1–7
S3 Observing the surrounding environment and changes within it observations in natural environments and built environments	T13 structuring the environment, examining human activity and related phenomena	modules 3 and 4
S4 Research and experimentation Problem-solving and research tasks relating to nature, the built environment, everyday phenomena, technology, people and human activity	T4 research and activity, moving around in the surrounding environment T7 describing, comparing, classifying and naming phenomena, materials and situations T9 familiarising yourself with a wide variety of everyday technology; working together to experiment, invent, build and create new things	modules 1–7, particularly modules 3, 5 and 7
S5 Considering what is fundamental in life considering what brings people joy and makes them feel good		module 2
S6 Practicing sustainable lifestyles taking care of your own and other people's property, reducing waste, sorting waste and recycling	T3 developing environmental sensitivity and acting in a sustainable manner	modules 1–7, particularly modules 1 and 4



Handicrafts

Developing learners' knowledge and skill in how to plan, do and express themselves through handicrafts. Encouraging and guiding learners to design and produce handicrafts and use a variety of materials. Helping learners to develop their initiative and concentration.

S1 Creativity harnessing emotions, stories, the imaginary world, and the built and natural environments; using a variety of visual and material processes; exploring movement and balance; developing form, colour and surface	T1 awakening the learner's curiosity in innovating and experimenting with handicrafts	modules 1–7
S2 Experimentation experimenting with a variety of materials, further developing and working on a product	T4 familiarising yourself with a variety of materials, working safely and responsibly	modules 1–7, particularly modules 4 and 5–7
S3 Planning and design working in accordance with the complete craft process, practicing how to describe the process and product	T2 the complete craft process, telling others about the finished product T3 designing and producing artworks and handicraft products	modules 1–7, particularly modules 5–7
S4 Working producing artworks or handicraft products on the basis of personal and joint designs, using a variety of craft tools	T5 developing self-confidence through success, insight and invention	modules 1–7, particularly modules 4 and 5–7
S5 Documentation learning how to use information and communication technology in creative, design and documentation processes	T3 T5	modules 1–7, particularly modules 5 and 6
S6 Assessment self- and peer assessment as the process progresses, learning how to give feedback	T5	modules 1–7



English language and literature

Supporting the formation of basic reading and writing skills and awakening an interest in children's literature and stories. Encouraging self-expression.

S1 Interaction interaction exercises, discussions, using drama to explore fairytales, children's literature and media texts	T2 developing language, imagination, interaction skills and cooperation skills T3 encouraging self-expression through, for example, drama	modules 1–7
S2 Interpreting texts the elements required for reading (sounds, letters), understanding stories, explaining a text in your own words, working with different texts, such as children's literature and media texts	T5 developing reading skills T8 using children's literature and media texts, positive reading experiences	modules 1–7, particularly module 1
S3 Writing texts drawing/forming letters, using your imagination, telling stories, expressing your own thoughts and experiences verbally, in writing and visually	T9 telling stories, giving opinions T10 writing skills, including in a multimedia environment	modules 1–7, particularly module 1
S4 Understanding a language's literature and culture strengthening linguistic awareness by making observations about spoken language; exploring written language by reading and listening to, for example, children's literature and media texts	T12 developing linguistic awareness	modules 1–7

The objectives and content for music, physical education and the visual arts are included!

