MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

Future thinking » **Today**
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Digital Technologies & Hangarau Matihiko

Digital Technologies
and the New Zealand Curriculum
Your guide to finding support and getting ready

Time to get ready – the new digital technologies curriculum content is here

The new digital technologies curriculum content

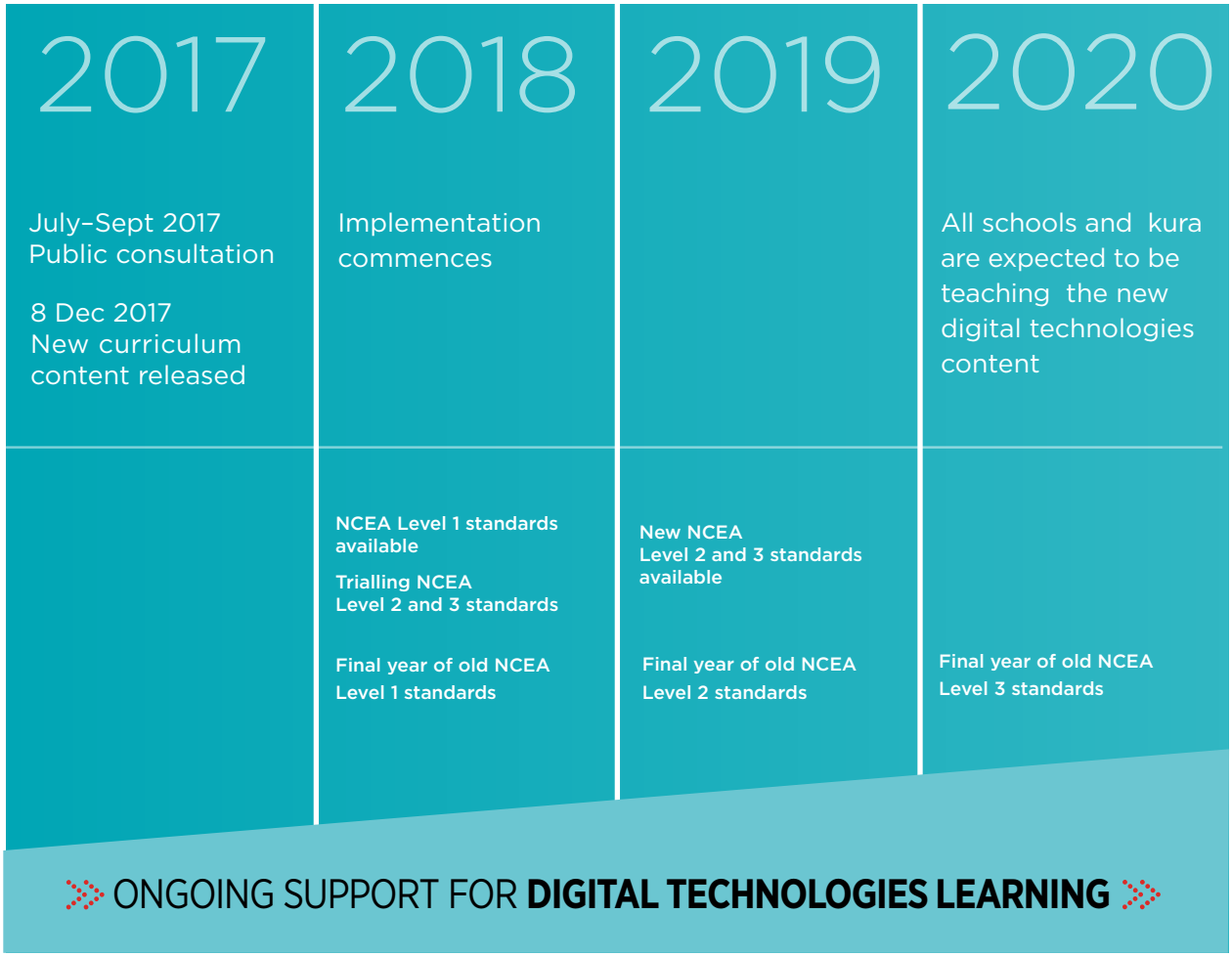
After extensive consultation, the new digital technologies curriculum content was launched in December 2017. While schools and kura aren't yet expected to implement the new content, you're urged to prepare so that by 2020, you're ready to go.

While many teachers and school leaders feel comfortable with digital technology, some of us may feel a sense of unease. As educators, we need to learn together about how to integrate technological ideas, outcomes, and principles into the design and delivery of meaningful learning experiences for our students.

This resource will help you and your community learn more about the new digital technologies curriculum content, the supports available to help unpack the new content, and how you can access that support.

"[I would say] to any teachers who are hesitant about the digital technologies content, to just get involved, try it, and learn alongside their students."

FROM CONSULTATION TO IMPLEMENTATION



What's it all about?

The new digital technologies curriculum content is not just about using electronic devices and hardware. It's about helping students to develop as digitally capable thinkers, producers, and creators. This means teaching students how digital technologies work (the computer science principles) and how they can use that knowledge to solve problems and become creative innovators of digital solutions.

What's changed?

The revised technology learning area still comprises three strands, which run across the whole learning area. The two key differences are the incorporation of:

- five technological areas that each describe a particular context for learning
- progress outcomes for learning in digital technologies.

This change applies to all students from Years 1–10, and Years 11–13 if they choose to specialise.

Why the change?

The New Zealand Curriculum vision includes the aspiration that our young people "will seize the opportunities offered by new knowledge and technologies to secure a sustainable social, cultural, economic, and environmental future for our country" (Ministry of Education, 2007, page 8). The curriculum's future focus principle (on page 9) recognises that young New Zealanders need the tools to understand and address a range of issues and concerns of global significance.

The revisions to the technology learning area provide practical guidance to help schools, kura, and Kāhui Ako construct local curricula that seamlessly integrate computational thinking and the creation of digital solutions.

The revised content isn't just an "add-on". Ideally, it will inspire conversations about important questions such as:

- What is the "digital world"? What does it mean to be a "digital citizen"?
- What are the competencies our young people need if they are to flourish as individuals and members of communities that are undergoing immense change?
- What do curriculum principles such as "Treaty of Waitangi", "Inclusion", and "High expectations", or values such as "equity" look like when you incorporate digital technologies?
- How can digital technologies be integrated across the curriculum to create rich and culturally responsive learning opportunities?

These are just some possible questions. As you prepare for 2020, what are the questions you want to investigate as you begin exploring the new content?

What's the relationship between Hangarau Matihiko and Digital Technologies?

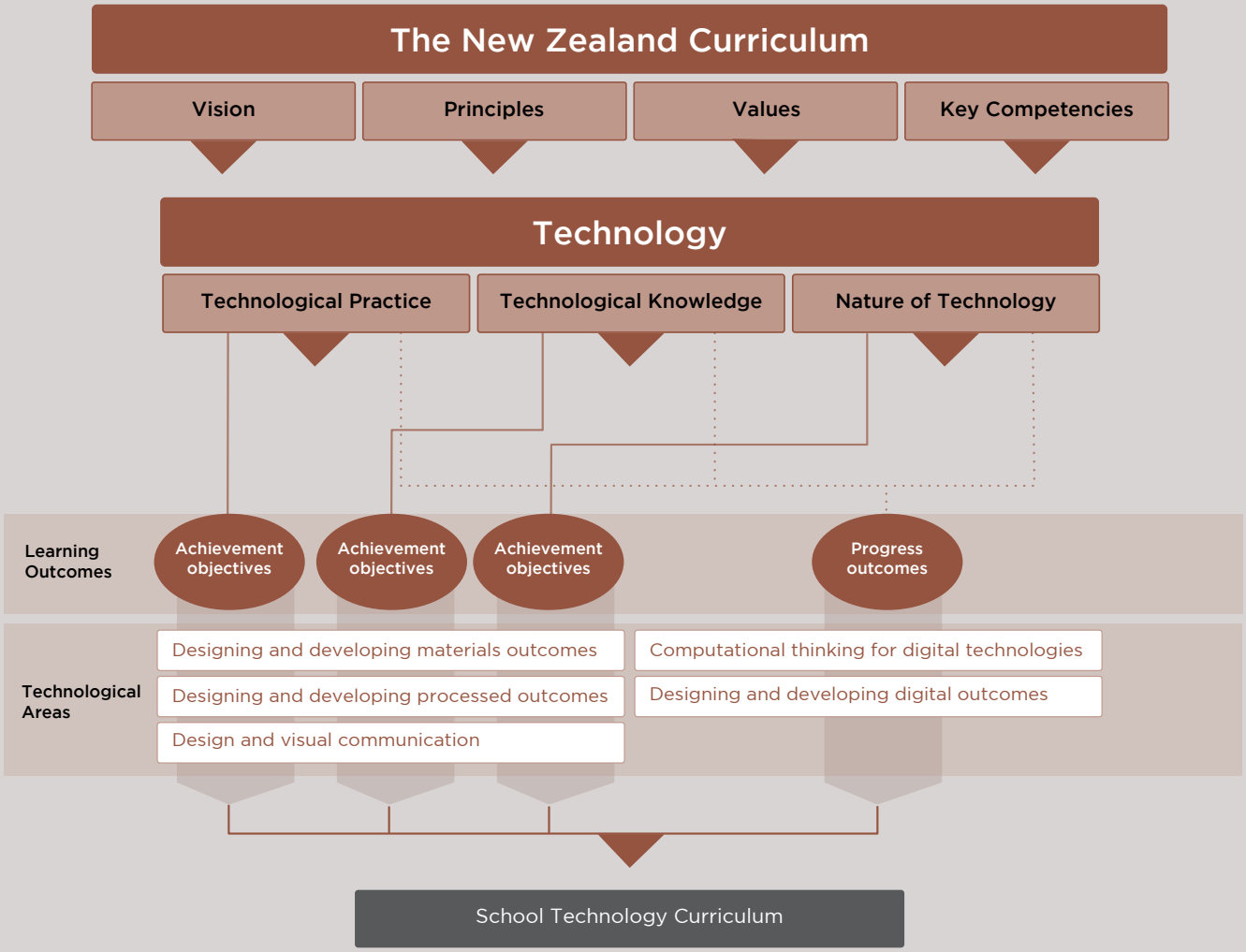
Hangarau Matihiko is the digital technologies strand within the Hangarau Wāhanga Ako, in Te Marautanga o Aotearoa. The revision of Hangarau Wāhanga Ako was completed at the same time as the review of the technology learning area. Hangarau Matihiko reflects principles that are important in te ao Māori, and the aspirations of Te Marautanga o Aotearoa.

As with Digital Technologies, Hangarau Matihiko includes illustrations of rich teaching and learning against the curriculum content to ensure better learning outcomes for our akōnga, kaiako, kura, and whānau. You can learn about it on the Hangarau Matihiko website at **hangaraumatihiko.tki.org.nz**

Introduction to the new digital technologies curriculum content

What is the structure of the revised technology learning area?

If you haven't already done so, this is a good time to look closely at the overall structure of the revised technology learning area. The table below the diagram specifies what has changed and what remains the same.



What has stayed the same?	What is different?
The previous technology learning area statement is embedded within *The New Zealand Curriculum* and describes: • what technology is about • why students should study technology • three strands: Technological Practice, Technological Knowledge, and Nature of Technology • achievement objectives for each strand • how learning in technology becomes more specialised as students reach senior secondary school.	The new technology learning area statement adds descriptions of: • five technological areas: – Designing and developing materials outcomes – Designing and developing processed outcomes – Design and visual communication – Computational thinking for digital technologies – Designing and developing digital outcomes • progress outcomes that describe the significant learning steps students take as they develop expertise in digital technologies learning: – Computational thinking – Designing and developing digital outcomes.

Getting to grips with language

For many of us, one of the biggest challenges in dealing with new technologies is becoming comfortable with the language. To understand the technology learning area statement, you need to understand the ideas below.

- **Digital technologies** is about teaching students the theory of how digital technologies work-, and how they can use that knowledge to solve problems.
- **Progress outcomes** show the significant learning steps learners take as they develop expertise over the course of their primary and secondary education. These have been applied to learning in digital technologies.
- **Technological areas** are the contexts for learning in technology. These include two technological areas tied specifically to digital technologies: Computational thinking for digital technologies and Designing and developing digital outcomes.
- **Designing and developing materials outcomes** is about working with resistant materials, textiles, and fashion to create conceptual and prototypic technological outcomes that solve problems and satisfy needs and opportunities.
- **Designing and developing processed outcomes** is about forming, transforming, and manipulating materials or ingredients to develop conceptual, prototypic, and final technological outcomes that will meet the needs of an increasingly complex society.
- **Design and visual communication** is about applying design thinking and using visual communication to conceptualise and develop design ideas in response to a brief.
- **Computational thinking** is about understanding the computer science principles that underlie all digital technologies, and learning how to develop instructions, such as programming, to control these technologies.
- **Designing and developing digital outcomes** is about understanding that digital systems and applications are created for humans by humans, and developing knowledge and skills in using different digital technologies to create digital content across a range of digital media.

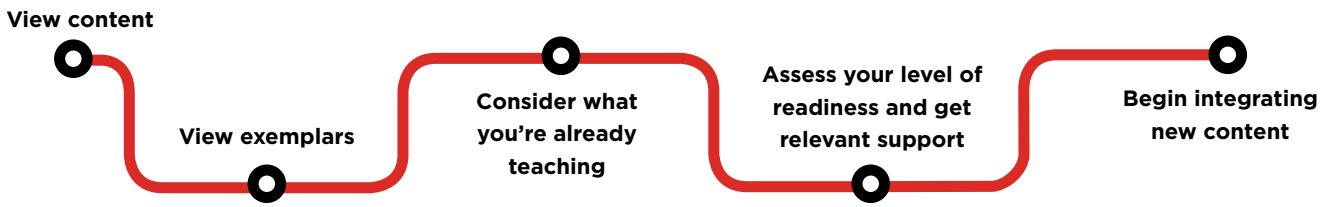
Find more explanations at **technology.tki.org.nz/Glossary**

"Be willing to learn alongside your students."

"Set an authentic purpose – a tangible problem for which the students can create a solution."

Support for educators

Suggested learning journey



Professional support

This professional support can be accessed until teachers and kaiako feel they are ready to integrate the new content.

Opportunity	Is this what you need?
Nationwide Digital Readiness Programme – Kia Takatū ā-Matahiko Kia Takatū ā-Matahiko introduces teachers, kaiako, and school leaders to the new curriculum content and its associated teaching strategies. It is provided through online and face-to-face support from accredited facilitators who tailor the programme to individual school, kura, and Kāhui Ako learning needs.	Apply for this if you want to know what the new content is all about, what the helpful teaching strategies are, and you want to connect with others online and face to face. We suggest that the online self-review tool is a great place to start. Find out more at **kiatakatu.ac.nz** Kia Takatū ā-Matihiko Digital Readiness
Tailored professional learning and development Schools, kura, and Kāhui Ako can apply for central funding to enable them to work with an accredited facilitator to build a professional learning and development plan that is responsive to their needs, priorities, and approach to delivering the new curriculum content.	Apply for this if you understand and are ready to integrate the new digital technologies curriculum content within your local curriculum.
Digital fluency support Digital fluency support is designed to enable teachers and kaiako to confidently use digital technologies, software programmes, and devices to support their teaching and learning programmes across all curriculum areas and Ngā Wāhanga Ako. This programme continues to be available as a national priority PLD programme.	Apply for this if your school or kura needs support so that all teachers can confidently use digital technologies in their teaching and learning programmes across the curriculum. If you'd prefer to gain confidence with using digital technologies as your first step, we suggest you apply for this first.

To find out more about the professional learning support on offer and how to make an application, go to **services.education.govt.nz/pld/dthm/digital-technologies**

Curriculum resources and support

What is it?

Technology in the New Zealand Curriculum
nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Technology

Technology in *The New Zealand Curriculum* explains the knowledge and practices underpinning the technology learning area and stresses the importance of technological literacy. You can explore this site to deepen your understanding of what has changed in the technology learning area – and what remains the same.

Technology Online
technology.tki.org.nz

Technology Online is your go to place for finding information and ideas to learn about and implement the revised technology curriculum. You can find the progress outcomes, exemplars, and snapshots illustrating teaching and learning for digital technologies. You'll also find information about professional learning support, video stories, links to useful websites, and webinars.

NCEA
ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards/Technology

NCEA on TKI offers assessment resources, teaching and learning guides, examples of the teaching and learning programmes and links to the new achievement standards.

A high level guide about the change – with information and resources

Digital Technologies and Hangarau Matihiko Learning
education.govt.nz/digitech

The Ministry of Education has assembled a set of resources that explain the inclusion of digital technologies learning and how it helps young people prepare for the pathways of their choice. There is specific material for different audiences: schools and kura, students, parents and whānau, and businesses and employers.

"It doesn't always require a technological device – students can construct algorithms with a sheet of paper and a pen – and even with their bodies!"

Further support for teachers and students

The Ministry of Education has partnered with industry, museums, and the Ministry of Youth Development to offer opportunities for students to develop their digital capability while taking part in rich, purposeful learning.

Opportunity to take part in a national digital challenge and championship

Tahi Rua Toru Tech!

123Tech is an exciting digital challenge for all students. Supported by an industry mentor, students learn to use digital technologies to solve real problems in their school, kura, or community. Small teams of students complete the challenge as a whole-class activity, smaller in-class groups, or through their local Code Club. There's fun to be had and prizes to be won! Check it out at **123tech.nz** today.

Digital Technologies for All Equity Fund

Available to 12,500 students across New Zealand each year, this fund is intended to ensure all students have opportunities to learn in a digital environment. It includes:

- Digital Ignition | Māpura Matihiko: offering students creative opportunities to develop their capabilities in curriculum-aligned workshops, delivered in the classroom. Find out more at **digitalignition.co.nz**
- Raranga Matihiko: a range of bespoke programmes led by the Museum of New Zealand Te Papa Tongarewa that includes visits to museums, in-class visits, and curriculum relevant learning and technology use. Find out more at **rarangamatihiko.com**

Youth Enterprise – Opportunity for Young People Fund

This funds young people to support the development of a new and/or innovative business/enterprise project or idea. Applications can be for funding between $5,000 and $30,000. Find out more at **myd.govt.nz/funding/current-funding.html**

DT&HM Online for NCEA

Auckland University and the Ministry of Education have partnered to make six online learning modules for those at the senior secondary levels, which will be progressively available from Term 3, 2018. Find out more at **seniorsecondary.tki.org.nz/Technology/Digital-technologies/DT-HM-Online-for-NCEA** or **tmoa.tki.org.nz/Taumata-Matauranga-a-Motu-Ka-Taea/Hangarau**

The quotes used throughout this brochure are mostly from the Hillmorton Cluster webinar. This, and other webinars, can be viewed on Technology Online at **technology.tki.org.nz/Teacher-education/Technology-Online-webinar-recordings**

Keep in touch

New learning opportunities are constantly being offered. Make sure you sign up to the Technology Online newsletter, Twitter account, or RSS feed so you don't miss out! Find out more at **technology.tki.org.nz/Resources/Technology-Online-newsletters**

To get in contact with the Ministry of Education, email **digi.tech@education.govt.nz**

#FutureThinking_Today

The New Zealand Curriculum

I hangaia tēnei rauemi hei tautoko i Te Marautanga o Aotearoa

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