



DIGITAL TECHNOLOGIES | HANGARAU MATIHIKO

Frequently asked Questions V.1. – What do I need to know?

BACKGROUND AND PROCESS

Where did the idea to add Digital Technologies | Hangarau Matihiko to the National Curriculum come from?

- In July 2014 the former Education Minister Hekia Parata and Minister Steven Joyce launched the Science and Society Strategic Plan “A Nation of Curious Minds: Te Whenua Hihiri i te Mahara”.
- This was a joint plan between MoE, MBIE, and the Office of the Prime Minister’s Chief Science Advisor. It included the review of Digital Technologies | Hangarau Matihiko in our national curriculum.
- On 5 July 2016 Minister Parata announced the strengthening of Digital Technologies | Hangarau Matihiko (DT | HM).
- As part of this, Digital Technologies | Hangarau Matihiko will form part of the Technology Learning Area of *The New Zealand Curriculum* and the Hangarau Wāhanga Ako of *Te Marautanga o Aotearoa* from Year 1 through to Year 13.

How has the curriculum content been developed to date?

- The Ministry worked closely with experts in the education sector and with the digital technologies industry to develop early drafts of the curriculum content.
- This combined international experience and New Zealand research on key learning in digital technologies.
- We have since worked with a range of stakeholders, in the education sector, and our wider communities and economy, to refine the content.
- This consultation is an opportunity to contribute your voice to this process.

What’s the role of industry?



- Our economy need workers with specific technological skills to enable innovation and support the infrastructure that firms, governments, commerce and user rely on.
- Industry have been among those calling for more learning about digital technologies, so that learners have the skills their future employers need.
- We have worked with leaders in digital technology from the wider economy, among others, to design the new content.

Is the Ministry reviewing the Technology | Hangarau learning area?

- Yes, changes are being made to the Technology and Hangarau Learning Areas to include Digital Technologies | Hangarau Matihiko.
- In *The New Zealand Curriculum*, this means that the Technology Learning Area will now include five technological areas, including the two new Digital Technologies areas.
- In *Te Marautanga o Aotearoa*, this means the Hangarau Learning Area will now include eight wāhanga ako, including the four new Hangarau Matihiko wāhanga ako.
- The Ministry is not currently planning to review the Technology or Hangarau Learning Areas more widely.

Will schools and kura be getting more funding for technology?

- The Government has already made substantial investments to support digital devices in schools including over \$700 million investing in digital infrastructure, including ultra-fast broadband.
- We've developed resources to fund software for schools and lease laptops and resources such as:
 - Virtual Learning Network;
 - e-learning modules;
 - Pond educational services;
 - digital hubs in communities;
 - the Connected Learning Advisory service.



Aside from the fact they possess specialist IT knowledge/skills, what will be done to ensure that LAT holders can actually teach?

- The Education Council assesses their qualifications and experience and makes a judgement as to whether they have the specialist skills and knowledge to carry out the role. They may have no actual formal teacher training. Any such training would need to be provided by the school.

How will you ensure the quality of LAT issuance in terms of teaching in the classroom?

- Principals are responsible for putting in place any arrangements they consider necessary for supporting people with LATs to do a good job. This could include arrangements for observation and peer mentoring, as part of the collaborative practice in that service, school or kura.

UNDERLYING PRINCIPLES OF THE CURRICULUM DEVELOPMENT

Why are we strengthening Digital Technologies | Hangarau Matihiko in the National Curriculum?

- New Zealand is a digital nation. Digital technologies are going to be an intimate part of our society and economy in years to come. Our education system needs to prepare our children and young people to participate, create and thrive in this fast-moving digital world.
- Our curriculum needs to reflect that the world has changed, and to reflect that we now understand that our children and young people need to have greater capabilities in digital technologies.
- The New Zealand Curriculum was last reviewed in 2007, and Te Marautanga o Aotearoa was developed in [2008].
- Since then, technology has changed immensely:
 - A decade ago the first iPhone had just been released – now most New Zealanders own smartphones.
 - Self-driving cars, artificial intelligence and augmented reality have stopped being science fiction and started being our reality.
 - Rockets are now sent to space from our own country.
- The ICT industry faces significant challenges recruiting people with the right skills to drive digital innovation and strengthen New Zealand's potential for



economic growth. We need to increase the number of students leaving school with these valuable digital specialist skills.

Why is digital technologies | Hangarau Matihiko being included as part of the Technology Learning Area / Hangarau Wahanga Ako?

- Technology focuses on intervention by design for humans by humans.
- Technology is much more than designing and making technological outcomes, it involves critiquing past, existing and possible future technologies, while considering their environmental, social and cultural impact.
- Digital Technologies and Hangarau Matihiko use that same approach, and use many of the same skills – such as identifying user needs and then developing responses.
- The idea of using invention and innovation to respond to needs is common to all areas of Technology and Hangarau, including Digital Technologies | Hangarau Matihiko.
- The Hangarau Wāhanga Ako focuses on enabling ākonga to gather technological understanding, beginning with the Māori world and its relevance to the modern world.
- A strong focus is placed on the values, the skills, and the learnings in technology that ākonga are familiar with.

Why the focus on Digital Technologies | Hangarau Matihiko instead of literacy / numeracy / STEM / the arts etc?

- Our learners need to understand digital technologies to succeed in the 21st century.
- Even if they don't go into "digital technologies careers" they will need skills, knowledge and capabilities in digital technologies to become fully participating citizens in our increasingly digital society and economy.
- We expect that **Digital Technologies | Hangarau Matihiko** learning will be integrated with other Learning Areas of the curriculum – so students might learn about programming in the context of mathematics, science or art.



THE CONTENT

What changes are being made to the Technology Learning Area as a result of the strengthening of DT?

- We have organised Technology differently so that Digital Technologies is explicitly visible. To do this, we have reorganised the content by the contexts and settings in which students might learn about Technology.
- Two new areas have been introduced for both English and Māori medium: *Computational thinking for digital technologies* and *Designing and developing digital outcomes*.

What are Progress Outcomes?

- **Progress Outcomes** have been developed for the Digital Technologies content to provide clear and discrete descriptors of the most important learning. They help signal students' progress across the learning pathway.
- The Progress Outcomes are drawn from the Learning Progressions for Digital Technologies which is available as part of the support materials.

Will there be Achievement Objectives (AOs) for DT?

- There will be no additional AOs developed for DT.
- The Ministry has prepared draft Progress Outcome statements for the revised curriculum content.

What are Outcome Statements?

- The *Outcome Statements* represent the skills, knowledge and attitudes of a digitally capable learner at the end of Year 10, and of a learner on the path to specialisation in one or more areas of digital technologies at the end of Year 13.
- The *Outcome Statements* draw from the learning described in the learning progressions. They describe the expected learning at the end of these key year levels.
- As described earlier, learning progressions themselves are not specifically designed to describe learning at a given year or curriculum level.

What are Learning Progressions?



- describe significant learning steps as students develop their expertise (key skills, knowledge and attitudes) in Digital Technologies, and
- illustrate what this learning looks like through annotated exemplars of rich task design and student responses.

How will this impact on the non digital areas of the Technology Learning Area?

- Achievement Objectives for Technology have been retained but are reorganised into the contexts in which learning takes place.

Why are there four new progressions for Māori Medium and only two for English medium?

- The two new dual progressions (Ct and DDDO) are about specific content i. e how data is represented, or digital apps are built, patterns and numbers etc. All this is the same no matter what language you teach it in, therefore it made sense that those progressions are consistent. Where the two unique Māori Medium progressions are about people, Māori values, Te Reo and cognisant of a Maori world view.

Is there new curriculum content at senior secondary level and how does this impact on NCEA?

- Yes, this content will be for year 1 right through to 13.
- We are developing new NCEA Level 1 Achievement Standards to reflect the new curriculum content.
- These new standards have been developed using the draft Year 10 and Year 13 Outcome Statements.
- The Level 1 standards will be available to schools to use from 2018..
- NCEA Level 2 and 3 Achievement Standards will be developed later this year, will be trialled in schools/kura next year, and will be available for all schools to use from 2019.



THE CONSULTATION PROCESS

Why is the Ministry seeking my feedback?

- We want to make sure that the new curriculum content works for teachers, kaiako, schools and kura, learners, their families and whānau, the digital technologies economy, and our communities.
- Your feedback is valuable to help ensure the quality of the new curriculum is the best it can be.
- Your feedback will also inform the supports we develop for teachers, kaiako, school and kura leaders, and learners.

What are the Ministry's next steps for the new curriculum content? Will I have further opportunity to provide feedback?

- We will provide further information on the curriculum content later in the year.

CLASSROOM PRACTICE

Key point: Digital Technologies | Hangarau Matihiko is learning *about* digital technologies, not learning *using* digital technologies.

When will the Digital Technologies | Hangarau Matihiko content be available to schools?

- Final drafts of the new content will be published at the end of 2017, ready for term 1 2018

What does our school / kura need to do as a result of the new Digital Technologies | Hangarau Matihiko curriculum content?

- By 2020, your school or kura will need to teach the new content. Between now and then, we encourage your school leaders to review any teaching you are already delivering in digital technologies, and how you can develop a programme for Digital Technologies | Hangarau Matihiko.
- Schools and kura that are a part of a Kāhui Ako should consider how digital technologies learning can be strengthened across their community.



When will Digital Technologies | Hangarau Matihiko become compulsory in schools and kura?

- The new content will become mandatory in 2020. This will give schools and kura time to become more familiar with the new content.
- Between now and then, the Ministry will be making a range of supports available to support teachers and school leaders to be ready to teach this new content.

Will we have to report against Digital Technologies | Hangarau Matihiko in 2018?

- No. There will not be reporting expectations in 2018, but we expect that schools and kura will begin developing teaching and learning programmes for Digital Technologies | Hangarau Matihiko from next year.

OTHER DIGITAL ISSUES

Key point: Digital Technologies | Hangarau Matihiko is learning *about* digital technologies, not learning *using* digital technologies. The former is about the skills, knowledge and capabilities needs to understand and innovate with digital technologies – the latter is about using individual devices or pieces of software. Digital Technologies | Hangarau Matihiko does not always mean using digital devices.

Is learning about privacy / intellectual property / responsible use of digital devices part of the new curriculum?

- Many of these topics will be involved in Digital Technologies | Hangarau Matihiko learning – for example, learners will consider the impacts of products they design on people.
- These are also capabilities that our learners need to understand across all their learning. These are captured in the key competencies of the curricula, as they are an important part of self-management in this digital age.

We have / don't have BYOD –/ will we be funded to buy devices?

- Schools and kura are self-governing and responsible for their own decisions in acquiring devices, or setting BYOD policies. This is not changing.

If schools don't guarantee a device for all students, will this compromise the learning of those who don't have their own devices?



- No, the introduction of Digital Technologies | Hangarau Matihiko will not require that each learner has their own device.
- The new curriculum content is about learning *about* digital technologies – in many cases, this will not even require a device. Where a device is required, we expect that schools' existing infrastructure will be sufficient.
- The Ministry of Education does fund some IT infrastructure such as:
 - ultra-fast broadband;
 - school-based wireless internet; and
 - a laptop scheme for teachers and principals.
- But no further funding will be provided attached to this curriculum change for schools and kura to buy new digital devices.

Will this mean that students will need to have technology at home?

- Learners should not require a device at home to learn in Digital Technologies | Hangarau Matihiko.
- A lot of learning in Digital Technologies | Hangarau Matihiko doesn't require a digital device – it focuses on digital thinking and ideas, which particularly at a junior level, can be achieved in non-digital environments.

SUPPORT

How will teachers and kaiako be supported to teach the new curriculum?

- The Ministry will invest in building teacher and kaiako confidence and capability in Digital Technologies | Hangarau Matihiko.
- This will include professional learning and development (PLD) and teaching and learning resources.
- We will be able to announce more about the specific supports to be provided in the near future.