

The industries that created the most iobs in Auckland in the past 10 years Filled jobs (2019)¹⁶ 80% of future were largely STEM related (2009-2019)¹⁶ jobs are 904,301 2,543,195 Construction forecasted to require maths Professional, Scientific in Auckland in Aotearoa and Technical Services and science 43.5% 46.7% skills Health Care and Social Assistance Accommodation and Food Services were in STEM related fields were in STEM related fields Administrative support services



STEM Engagement Catalyst

Find where you sit in the diagram and interrogate your plan for more effective engagement to attract young people into the STEM skills pipeline

OVERARCHING PRINCIPLES

MĀTAURANGA Encapsulates both the building of knowledge and understanding.

PURPOSEFUL OBJECTIVES Specific topic-driven inquiry, defined project outcomes, goal-oriented work, focused.

CULTURAL INCLUSION Upholding Te Tiriti while recognising and considering your target group's culture.

TWO-WAY COMMUNICATION -----Equal partnership, co-design, collaboration, authentic and empathetic active communication

RELATIONSHIP PERMUTATIONS

WHANAUNGATANGA Authentic collaboration, equal-power partnerships, ako.

SPHERES OF INTERACTION

- The WIDER COMMUNITY that has the opportunity to touch on the individual's life less frequently, but has resource and capability the others do not.
- The IMMEDIATE COMMUNITY the individual is part of, the people and organisations that impact them in their everyday life.
- The WHĀNA U that immediately surrounds the individual and has the most potential for impact on them.
- The individual or TARGET group you're trying to engage

REFERENCES

Filled jobs

30,083

23.131

20,593

18.968

14,860

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NB: Each boundary contains an authority layer who can act as an er/facilitator, eg. personal utonomy, parental guidance, aumātua, clergy, classroom tea ecturer, line manager or similar

TĀMAKI MAKAURAU A SNAPSHOT OF EDUCATION, LEARNING AND SKILLS 2019



Average scores from the most recent PIACC survey consisted of a sample of 6,177 people aged between 16-65 years (31% or 1,889 were from Auckland).



People living in low socioeconomic areas (e.g., the TSI area*) scored significantly lower in numeracy compared to the rest of Auckland *Mängere-Ötähuhu, Ötara-Papatoetoe, Manurewa and Papakura

People in the TSI area were four times more likely to have no computer experience compared to the rest of Auckland



ACHIEVING A DIGITALLY INCLUSIVE AOTEAROA IS NOT JUST A JOB FOR CENTRAL GOVERNMENT. LOCAL AUTHORITIES HAVE **AN IMPORTANT ROLE IN SUPPORTING CITIZENS TO GO ONLINE AND MUST HAVE A DIGITAL INCLUSION PLAN⁴**

SKILL SHORTAGES AND MIGRATION¹⁷

Number of people granted Essential Skills work visas 2016/2017/2018

> in Auckland (+6% since 2015/2016

11.965

32,976 in Aotearoa (+4% since 2015/2016

Engineering, health, information technology and science all feature on Aotearoa's long-term skills shortage list

Most Essential Skills work visas in Aotearoa 2016/17 were for STEM related occupations For example:



STEM subject teachers over 6000 overseasbased teachers are being sought to teach in Aotearoa (2018)"

EARLY YEARS 8 Children with more access to books do better at science and maths

CHILDREN **ARE NATURAL** SCIENTISTS WHEN THEY EXPLORE, PLAY AND LEARNI

IN SCHOOL

Primary & Intermediate students (2019)⁶

180.133 in Auckland **529,28**'

in Aotearoa

The National Monitoring The Nationa Study of Student Achievement (NMSSA) assesses student achievement across the New Zealand Curriculum (NZC) at Year 4 and Year 8 in English-medium state and state-integrated schools7



5.833

2.560

*Data does not include school leavers with international qualifications, or leavers who nded schools where a mix of NCEA and international asse

,909

(22%)

Percentage of Year 12 and Year 13 subject enrolments in maths, science and technology, separated according to student gender (2019)⁶ Male ÷× Science subjects Technology subjects Female Math subjects



or writing are

required

Finding teachers to teach STEM subjects has become harder for many secondary schools resulting in teachers trained in other subjects stepping in, or subjects being cut from the curriculum



3,054 (19%

2,381 (16%

1.340 (16%)



Percentage of Year 12 and Year 13 subject enrolments in maths. science, and technology, separated according to school decile (2019)⁶



58%

2%

52%

3%

Decile 7-10

Not Applicable

STEM SNAPSHOT 2019

,**826 (30%**)

l,129 (29%

2.051 (24%)

8,581

4,168

PISA 2018 Science: Most students could easily recognise the correct explanation for familiar scientific omena and use it to identify, in simple cases, whether a ion is valid based on the data provided^s

new software, systems

broad technological

them to participate in

society and a platform

for technology-related

careers 14

and tools as they develop

knowledge that will equip

ENCOURAGE MORE AUCKLAND RANGATAHI **TO ENROL AND** PARTICIPATE IN TECHNOLOGY IN THE CLASSROOM?