# Youth Insight, Powered by Student EdgePhoto of young people looking at computer screen in science lab.Youth in STEM Research: Presentation report

## Contents

[Contents 2](#_Toc2846370)

[Background 3](#_Toc2846371)

[Research objectives 4](#_Toc2846372)

[Sample Design and Weighting 5](#_Toc2846373)

[Summary of findings 6](#_Toc2846374)

[Detailed findings 11](#_Toc2846375)

[Contact us 80](#_Toc2846376)

[Appendix – Tabular data 81](#_Toc2846377)

### About this report

This report is a text based version of the PDF slide presentation prepared for the Department of Industry, Innovation and Science. It also provides the tabular data behind each of the graphs and charts.

## Background

In a world of constant change, it is critical that the Australian population has the right skills to take advantage of the opportunities presented by the technological and innovative advancements happening around the world. An understanding of science, technology, engineering and mathematics (STEM) is invaluable to developing these skills.

It's not just our scientists and coders who need STEM skills. STEM knowledge and skills lead to new products, more efficient services, and a more diverse, resilient and sustainable economy across all sectors.

In light of this, the Department of Industry, Innovation and Science commissioned Youthlnsight to conduct a nationwide study of Australian students' attitudes and behaviours towards STEM education and careers in STEM-related fields.

The study was carried out online, and surveyed 2,000 students aged between 12 and 25 years from all states and territories. The results provide a national benchmark of awareness and perceptions held by young Australians towards STEM.

Nurturing and tapping into the entire pool of STEM talent will support a more innovative, inclusive and prosperous economy. As such, this report particularly focuses on the gender inequity found throughout STEM education and careers.

## Research objectives

The principal objective of the study was to create a national benchmark of young Australians’ awareness and perceptions of STEM subjects and STEM-related careers, with a particular focus on the difference between male and female students

More specifically, the study looks at:

* Evaluating the perceived importance of STEM subjects to students
* Determining student interest in considering further STEM education
* Determining student interest in STEM careers
* Assessing young Australis’ engagement with STEM outside of education
* Understanding student awareness of STEM-related careers
* Identifying barriers and enablers to STEM careers
* Understanding the factors that influence career choices
* Determining student perceptions of technological advancements

## Sample Design and Weighting

To ensure survey results are representative of the population of interest, rim weighting is used to correct for under or over representation of sub-groups within the survey respondents

The three major factors used in the rim weighting process were gender, age and state.

**Age and gender:** An equal balance of males and females within each age group (while taking into account those who do not identify with binary genders).

Sample of respondents aged 12 to 13 fell short of the target and hence other age groups were slightly inflated to still ensure we achieved final quota of 2,000 respondents.

**State:** The sample was weighted based on ABS state population distribution.

| Gender | Sample | Target | Weighted sample |
| --- | --- | --- | --- |
| Male | 43% | 50% | 49% |
| Female | 55% | 50% | 49% |
| Non-binary | 2% | 0% | 2% |

| Age | Sample | Target | Weighted sample |
| --- | --- | --- | --- |
| 12 to 13 | 4% | 14% | 6% |
| 14 - 17 | 31% | 29% | 32% |
| 18 -21 | 37% | 31% | 33% |
| 22- 25 | 28% | 26% | 29% |

| State | Sample | Target | Weighted sample |
| --- | --- | --- | --- |
| NSW | 36% | 32% | 32% |
| VIC | 29% | 26% | 28% |
| QLD | 14% | 20% | 18% |
| WA | 12% | 11% | 11% |
| SA | 6% | 7% | 7% |
| ACT | 2% | 2% | 1% |
| TAS | 1% | 2% | 2% |
| NT | 0% | 1% | 1% |

## Summary of findings

### Education and Career

* Looking at the elective subjects currently being undertaken and considered in the future, it’s evident that **STEM subjects are amongst the most popular** and **gaining popularity**.
* This increase in popularity is evident from the average of 4 STEM subjects being undertaken by current Year 11 and 12 students compared to the **average of 6 STEM subjects which current Year 9 and 10** students intend to select in their senior year of high school.
* **Parents are the most influential people** for students (54%) when it comes to selecting their subjects followed by friends (30%) and teachers (24%). Other top influencing factors when selecting subjects include students’ own interests and skills/abilities.
* There are **strong future intentions of studying STEM-related subjects** with 46% of people considering future study in this area. This is driven more by males (52%) compared to females (40%).
* 7 out of 10 young people have some level of certainty about their future career. Of these, **31% are considering STEM-related roles**, although this is strongly driven by males (41% vs 20%).
* The most popular profession among this young cohort is in the medical field as ‘doctors’ or ‘nurses’ followed by ‘business ownership’ and ‘I.T’.
* The **most popular STEM-related careers** include ‘computing or I.T.’ (11%), ‘Scientist’ (11%) and ‘Engineering’ (10%).
* When choosing a career, ‘**good working conditions**’, ‘**job security**’ and ‘**interesting work**’ rank as the most important factors across all age groups and genders.

### Awareness and attitudes

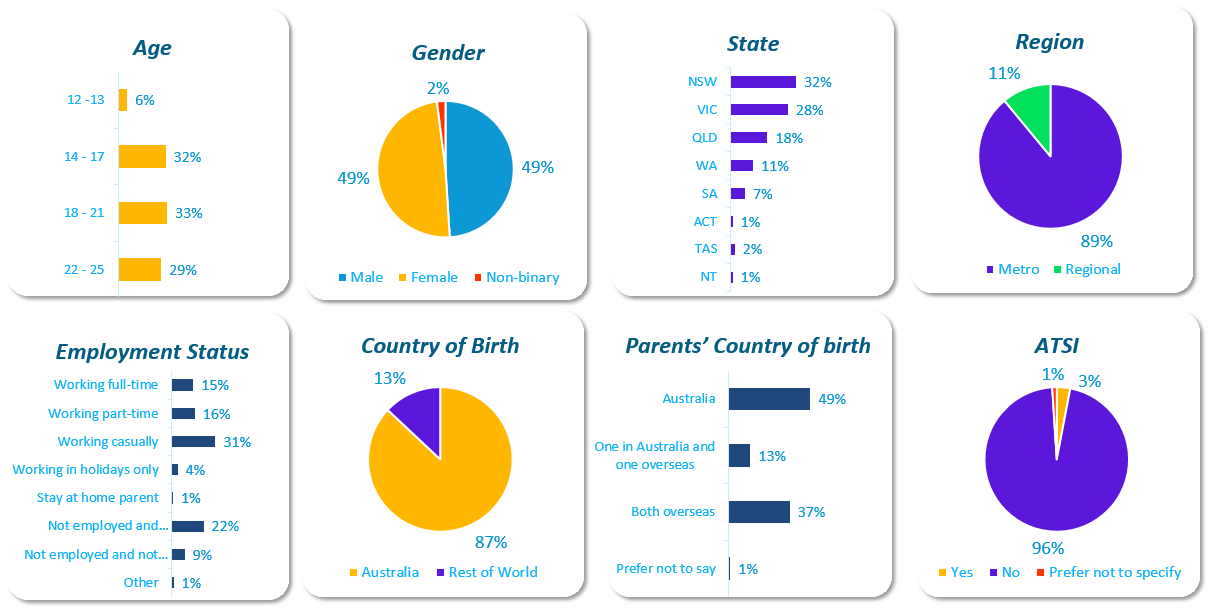
* **62% of all respondents correctly spelled out the 4 subjects making up the STEM** acronym, while 20% admitted to not knowing and the remaining 18% gave incorrect answers, with most tripping up on the letters ‘E’ and ‘M’.
* Spontaneous responses about what jobs a STEM degree/certificate can qualify people for saw a strong association with **Engineering**, with 7 out 10 people citing some form of engineering profession. ‘**Scientists’** (43%), ‘**educators’** (29%) and ‘**mathematicians’** (23%) were other popular career associations.
* **8 out of 10 agree that ‘scientists make a positive impact on the world’** and 64% say ‘learning about science and technology is fun’.
* There is low engagement with parents with only around half saying that their ‘**parents think it’s important to learn about science and technology’** and 43% ‘**discussing science and technology with the family**’.
* Over **half of all people surveyed express a general interest in Science** (64%), **Technology** (65%) and **Maths** (50%), however, only 42% claim to be interested in Engineering, which is concerning given this is the career most associated with STEM.
* There is a strong perception that knowledge and skills in all STEM subjects is **important for future employment opportunities**, with **Technology** (85%) and **Maths** (79%) ranking as most important.
* **Engineering** also recorded a high overall importance level of 59% but was **significantly lower compared to other STEM subjects**, with most people explaining that they feel it’s too specific a set of skills which are not required in most careers. However, it’s also evident that the majority of young people have a very low understanding about what Engineering entails.
* Two thirds of all people **feel confident they could achieve good results in Science, Technology and Maths,** but **only 38% feel the same way about Engineering**.
* The main reason for low confidence in Science, Technology and Engineering is **lack of interest in these subjects**, while for Maths it’s more related to student’s mindset that **they’re simply not good with numbers**.
* **Low levels of understanding of what Engineering** entails coupled with **perceptions of it being a very ‘hard’ subject** are also major factors for the overall lower levels of engagement with this subject. This was seen with both genders but more pronounced among females.
* Similarly, the **ambiguity of the term ‘Technology’** plays a part in students’ lower confidence levels with many not even considering the subject as they perceive themselves as ‘non-techy’ people.
* **Just under half (45%) of people have attended science activities** outside of school/study in the past 12 months, with one quarter attending more than one activity.
* 45% say that their **interest in in studying Science, Technology, Engineering or Mathematics** subjects in the future had **increased as a result of attending an event.**

### Key gender differences

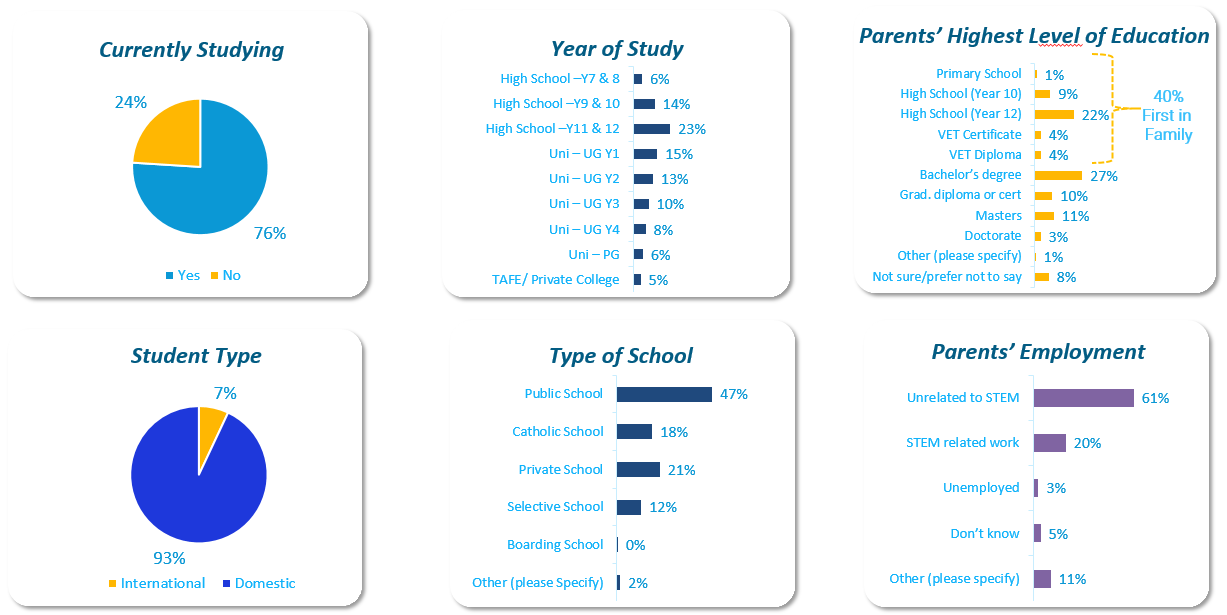
* From an early age the overall **selection of STEM subjects significantly skews towards males,** with 70% currently undertaking at least one STEM subject compared to only 32% of female students in Year 9 and 10.
* In year 11 and 12, **both genders have high selection rate of STEM subjects**, but males still surpass females with 99% selecting at least one STEM subject compared to 91% of females.
* In **higher education 26% of students are currently undertaking a STEM-related course**, which is largely driven by male students at 35% compared to female students at 18%.
* However, based on what current Year 9 and 10 students are intending to study in their senior years of high school, we do see a **shift in** **balance between genders with 93% of males and 95% of females considering at least one STEM subject**.
* The **male skew does re-emerge with in higher education**, with 58% of males considering at least one STEM course, compared to 36% of females.
* In addition to current and future STEM subject selections, **female students also have generally less favourable attitudes towards STEM subjects** and in particular towards Engineering and Technology.
* **Interest levels for all STEM subjects is significantly higher among males**, with the biggest discrepancies seen in **Engineering** with 55% of males interested in the subject compared to only 28% of females, and **Technology** with 75% males interested compared to 54% females.
* Both genders have similar perceptions of the importance of skills and knowledge of STEM to secure future employment. **Over 70% of all respondents say it’s important to have skills in Science, Maths and Technology**, while with Engineering, 65% of males agree of the importance compared to 54% of females.
* Following the same trend is **confidence** **in STEM**, where **both genders have similar confidence levels in achieving good results in Maths and Science** (60% say they’re ‘very’ or’ somewhat’ confident), however, the **gap is much wider with Engineering** and **Technology**, where males recorded confidence levels of 50% and 74% for Engineering and Technology respectively compared to females with only 26% and 56%.
* Overall **males show higher levels of excitement towards science and technology**, have **higher levels of engagement** and a **higher proportion want to follow a career** in the related fields.
* The **majority of young people (81%) disagree that there is any gender superiority in STEM subjects**, however **Engineering** (24%) and **Technology** (20%) had highest proportion of respondents agreeing that ‘**boys are better than girls’**, which was driven more by male respondents.
* When asked to evaluate a list of professions and indicate if they were more male or female type jobs, the **majority of careers were seen as gender-neutral**, however, certain professions such as ‘labourer’ and ‘technician’ skewed male, while ‘hairdresser’ and ‘community and personal services’ skewed female.

## Detailed findings

### Demographic overview



### Education overview



### Learning area groupings and STEM subjects Years 9 and 10

**Human Society & its Environment (HSIE) -** Human Society and Its Environment - Business Studies, Economics, History, Legal, Geography, History (Modern, Ancient), History Extension, Human Society and Its Environment, Aboriginal Studies, Society and Culture, Studies of Religion, Citizenship and Legal Studies, Work and the Community Life Skills, Work Studies

**Technologies** - Agricultural Technology, Design and Technology, Food Technology, Graphics Technology, Industrial Technology, Information and Software Technology, Textiles Technology

**Arts -** Music, Visual Arts, Dance, Drama, Photography and Digital media

**PDHPE** - Child Studies, Physical Activity, Sports Studies

**Mathematics** - Advanced Maths, Maths Extension

**Languages**

**VET** - VET Courses in Years 9 and 10

**STEM -** Geography Elective, Agricultural Technology, Design and Technology, Graphics Technology, Industrial Technology, Information and Software Technology

### Learning area groupings and STEM subjects Years 11 and 12

* **Mathematics** – General, Advanced, Extension
* **HSIE** - Human Society and Its Environment - Business Studies, Economics, History, Legal, Geography, History (Modern, Ancient), History Extension, Human Society and Its Environment, Aboriginal Studies, Society and Culture, Studies of Religion, Citizenship and Legal Studies, Work and the Community Life Skills, Work Studies
* **Science** - Chemistry, Biology, Physics, Extension, Earth and Environmental Science, Physical World Science Life Skills, Investigating Science, Earth and Space Science, Living World Science, Chemical World Science
* **English** – Advanced, Extension, Other
* **Technologies** - Agriculture, Computing Applications, Design and Tech, Engineering Studies, Food Tech, Industrial Tech, Information Processes and Tech, Marine Studies, Software Design and Development, Technology Life Skills, Textiles and Design
* **PDHPE** - Community and Family Studies, Sport, Lifestyle and Recreation Studies, Exploring Early Childhood
* **Creative** **Arts** - Visual Arts, Music, Drama, Creative Arts, Dance, Ceramics, Visual Design, Photography, Video and Digital Imaging
* **Languages**
* **VET** - Hospitality, Automotive, Construction, Business Services, Entertainment Industry, Tourism, Travel and Events, Human Services, Metal and Engineering, Primary Industries, Electrotechnology, Retail Services, Financial Services, Information and Digital Technology
* **STEM** - Mathematics, Biology, Chemistry, Mathematics Advanced, Mathematics Extension, Physics NEW, Automotive (VET), Information and Digital Technology (VET), Metal and Engineering (VET), Electrotechnology (VET), Industrial Technology, Agriculture, Engineering Studies, Information Processes and Technology, Geography, Design and Technology, Investigating Science NEW, Software Design and Development, Science Extension, Computing Applications, Living World Science, Earth and Environmental Science, Marine Studies, Chemical World Science, Earth and Space Science

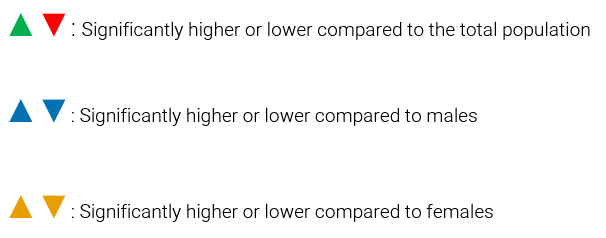
### STEM grouping higher education and STEM careers

**STEM Higher Education Subjects -** Agriculture, Computing and Information Technology, Engineering and Technology, Environmental Studies, Earth and Environmental Studies

**STEM Career Groupings** - Computing or information technology (IT), Engineer, Inventor, Mathematician, Scientist, Technician or trade worker (mechanic, electrician)

### Significance testing

Throughout this report significant differences between respondent groups have been highlighted using the following symbols (Green arrow pointing up signifies significantly higher proportion than the total proportion, red arrow pointing down signifies a significantly lower proportion that the total proportion, blue arrows point up or down signify a significant difference compared to male proportion and similarly yellow arrows pointing up or down signifies significant differences compared to female proportions) . These symbols highlight differences that are significant at a confidence level of 95% and a confidence interval of ±3%. The arrows are placed directly next to the percentage numbers.



### Elective subjects currently being studied

#### Year 9 and 10 current elective subject selections

From as early as Years 9 and 10, the overall selection of STEM subjects significantly skews towards males, with 70% selecting at least one STEM subject compared to only 32% of females.

* Languages is the most popular elective subject for Years 9 and 10 students (36%). Of the top 15 elective subjects currently selected, 3 are STEM subjects; Males have 4 in their top 15 and females have 2.
* Of all subjects selected by Year 9 and 10 students, the most salient differences between genders is Information and Software Technology and Industrial Technology which both significantly skew towards males.
* Within the learning area groupings, Technologies is the outright preferred among males with 74%, while females are divided between HSIE and Creative Arts with 66% preference for both.
* The only STEM subject which (indicatively) scored higher with females was Agricultural Technology.

#### Year 9 and 10 current elective subject selections – Top 15

Three bar charts on this slide show the top 15 elective subjects Year 9 and 10 students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange) 
See appendix - Table 15

#### Year 9 and 10 current elective subject selections – STEM Subjects only

Three bar charts on this slide show the top STEM elective subjects Year 9 and 10 students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females. 
See appendix - Table 16

#### Year 9 and 10 current elective subject selections – Grouped by learning areas

Three bar charts on this slide show the top learning areas Year 9 and 10 students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females. 
It also groups together a combined STEM subject score in each chart which is highlighted in a different colour (orange). 
See appendix - Table 17

#### Year 11 and 12 current elective subject selections

Overall there is a high take-up of STEM subjects with almost all students selecting at least one of these subjects; males have a significantly higher take-up of these subjects compared female students.

* Mathematics ranks as the top elective subject for Years 11 and 12 with 4 out of 5 students choosing at least one of these subjects in their senior years. Of the top 15 elective subjects currently selected, 3 are STEM subjects; males have 5 in top 15 and females have 4.
* Of all subjects selected by Year 11 and 12 students, the largest discrepancies were seen with a significantly higher preference for PDHPE among females (26% vs 10% for males) while males favoured Physics (33% vs 14% for females).
* Among all STEM subjects the largest discrepancies between genders is the higher preference among male students for Maths Extension, Physics and VET courses. Biology was the only STEM subject preferred by female students.
* Within the learning area groupings, Mathematics is the preferred elective for both male and female students, with Science subjects and HSIE ranking in 2nd and 3rd for both genders.

#### Year 11 and 12 current elective subject selections – Top 15

Three bar charts on this slide show the top 15 elective subjects Year 11 and 12 students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange).
See appendix - Table 18

#### Year 11 and 12 current elective subject selections – STEM subjects only (Top 15)

Three bar charts on this slide show the top 15 STEM elective subjects Year 11 and 12 students have currently selected. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females. 
See appendix - Table 19

#### Year 11 and 12 current elective subject selections – Grouped by learning areas

Three bar charts on this slide show the top learning areas Year 11 and 12 students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females. 
It also groups together a combined STEM subject score in each chart which is highlighted in a different colour (orange). 
See appendix - Table 20

#### Higher education current course selections

Amongst higher education students, Business and Management (14%) is the number one course currently being undertaken followed by Medicine (9%).

* Of the top 15 courses, 3 are STEM courses. Males choose 4 STEM courses out of their top 15, and females choose 3.
* The major differences among the top 15 between genders is the male skew of two STEM courses, Engineering and Technology (14% vs 3%) and Computing and Information Technology (10% vs 4%).
* Overall, male students have a significantly higher STEM course selection compared to female students (35% vs 18% respectively).

#### Higher education current subject selections – Top 15

Three bar charts on this slide show the top 15 courses higher education students have currently selected ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange).
See appendix - Table 21

#### Higher education current subject selections – STEM subjects only

Three bar charts on this slide show the top STEM courses higher education students have currently selected and groups together a combined STEM course score in each chart. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
See appendix - Table 22

### Future study intentions

#### Elective subject intention for Years 9 and 10

Among their top 10 elective subjects to choose in Years 9 and 10, there were 2 STEM subjects. Males selected 4 STEM subjects out of their top 10, and females only 1.

* When asked which subjects they’re planning on selecting in Years 9 and 10, the youngest students aged 12-13 are most likely to select Technology subjects (82%), with females equally as likely to select Creative Arts subjects.
* Overall, two out three students in Years 7 and 8 plan to select at least one STEM subject as part of their electives; however this is largely driven by males (84% vs 53%).

**Caution: Small sample size. Sig testing not applicable**

#### Elective subject intention for Years 9 and 10 – Top 10

Three bar charts on this slide show the top 15 elective subjects Year 7 and 8 students are intending to selected in Year 9 and 10 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange).
See appendix - Table 23

#### Elective subject intention for Years 9 and 10 – STEM Subjects only

Three bar charts on this slide show the top elective STEM subjects Year 7 and 8 students are intending to selected in Year 9 and 10 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
See appendix - Table 24

#### Elective subject intention for Years 9 and 10 – Grouped by learning areas

Three bar charts on this slide show the top learning areas Year 7 and 8 students are intending to selected in Year 9 and 10 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
It also groups together a combined STEM subject score in each chart which is highlighted in a different colour (orange). 
See appendix - Table 25

#### Elective subject intention for Years 11 and 12

Based on current subject selections and subjects intending to be selected, Year 11 and 12 is likely to see an increase in STEM subject selection from 4 to 6 subjects.

* Chemistry is the elective subject most students currently in year 9 and 10 intend to choose for in their senior years of high school with 52% of all students intending to select the subject.
* The second most popular subject was different among males and females with Biology ranking in second favourite among females (52% vs 29% males) and Mathematics Advanced for males (41% vs 35% females).
* Overall, 6 out of the top 15 subjects students intend on taking in years 11 and 12 are STEM subject; with males having as many as 8 and females 6.

#### Elective subject intention for Years 11 and 12 – Top 15

Three bar charts on this slide show the top 15 elective subjects Year 9 and 10 students are intending to selected in Year 11 and 12 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange).
See appendix - Table 26

#### Elective subject intention for Years 11 and 12 – Grouped by learning areas

Three bar charts on this slide show the top 15 learning areas Year 9 and 10 students are intending to selected in Year 11 and 12 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
It also groups together a combined STEM subject score in each chart which is highlighted in a different colour (orange). 
See appendix - Table 27

#### Elective subject intention for Years 11 and 12 – STEM subjects only (top 15)

Three bar charts on this slide show the top 15 STEM subjects Year 9 and 10 students are intending to selected in Year 11 and 12 ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
See appendix - Table 28

#### Year 11 and 12 is likely to see an increase in STEM subject selection

This image shows column graphs of the number of STEM subjects currently selected by Year 11 and 12 students and the number of STEM subjects Year 9 and 10 students are intending to take in Year 11 and 12. The first charts shows the results of the total sample, the second shows the male sample results and the third is the females.
There is a note on the slide explaining that it wasn't possible to run the same analysis among younger years due to sample limitations. 
See appendix - Table 29

#### Courses considered for higher education

Among Year 11 and 12 students, there is a significant difference in higher education course preferences between genders, with 58% of males intending to undertake STEM-related courses compared to only 36% of females.

* The top higher education course among males is Engineering Technology (27%), while Medicine tops the female ranking (18%).
* Among all STEM subjects, Engineering and Technology along with Computing and Information Technology is where the biggest discrepancy lies between genders (27% vs 7% and 16% vs 4% respectively).
* Course preference for females have a stronger skew towards health related courses such as Medicine, Psychology, Nursing, Health Services and Support.

#### Courses considered for higher education - Top 15

Three bar charts on this slide show the top 15 elective courses Year 11 and 12 students are intending to selected in higher education ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM subjects are highlighted a different colour across all charts (orange).
See appendix - Table 30

#### Courses considered for higher education – STEM only subjects

Three bar charts on this slide show the top STEM courses Year 11 and 12 students are intending to selected in higher education ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
See appendix - Table 31

### Career Intentions

1 in 4 students feel very certain about their future career, while one third feel ‘hardly’ or ‘not at all’ certain.

**When considering their future intentions, males show more certainty than females**

This slide shows a column graph showing the career certainty results based of a 4 point rating scale (Very certain, Fairly certain, Hardly certain and Not certain at all). The graph compares the Total sample against Males, Females, 12-13 year old people, 14-17 year old people, 18-21 year old people and 22-25 year old people. 
See appendix - Table 32

Females choose the medical field while males opt for business and IT; males show overall higher preference for STEM-related careers.

Three bar charts on this slide show the top careers young people would like to have in the future ranked from highest to lowest. The first bar charts shows the results of the total sample, the second shows the male sample results and the third is the females.
STEM-related careers are all highlighted a different colour across all charts (orange) and a total of STEM-related careers is also included.  
See appendix - Table 33

Among those aiming for science careers, biology fields are most sought out by females, while males lean more towards becoming chemists.

Three pie charts on this slide shows the types of science careers people are interested in (among those that said they would like to be interested in science careers). The options include Biologist, Chemist, Physicist, Earth or environmentalist or other. The first pie charts shows the results of the total sample, the second shows the male sample results and the third is the females.
See appendix - Table 34

Working conditions and job security are the top factors when choosing a career, followed by interesting work and fun environment.

This slide shows a stacked bar chart of importance factors on career choice. It is based of a set of statements related to careers which respondents rated its level of importance based off a 5 point rating scale (Not important at all, Not very important, Neither, Somewhat important, Very important). 
See appendix - Table 35

Technology is the most dividing factor between genders, with females ranking it as the second least important factor

**Generally females score higher on all factors with the exception of ‘Has lots of technology and ‘Industries which have existed for a long time’.**

**Both genders ranked ‘good working conditions’ as the top most important factor when choosing a career.**

This slide shows a bar chart of importance factors on career choice comparing results between males and females. It is based of a set of statements related to careers which respondents rated its level of importance based off a 5 point rating scale (Not important at all, Not very important, Neither, Somewhat important, Very important). The results on this chart shows only the combined scores of Somewhat important, Very important. 
See appendix - Table 36

Similar importance factors seen between age groups with the older group seeking more travel opportunities and security of longstanding industries

This slide shows 3 bar charts of importance factors on career choice comparing results between 14-17 year olds, 18-21 year olds and 22-25 year olds. It is based of a set of statements related to careers which respondents rated its level of importance based off a 5 point rating scale (Not important at all, Not very important, Neither, Somewhat important, Very important). The results on this chart shows only the combined scores of Somewhat important, Very important. 
See appendix - Table 37

### Understanding and Attitudes Towards STEM

Around a third of students don’t know what STEM stands for, with Engineering tripping most people up.

**No significant differences in correct responses between males and females, however, students aged 14-17 had the highest proportion of correct responses with 68%.**

This slide shows a pie graph of the results of people's understanding what STEM stands for. 
See appendix - Table 38

**Of all incorrect responses, it was primarily Engineering which most students got wrong or couldn't remember. Below are some of the most common responses:**

* Science, Technology, **English**, Maths
* Science, Technology, **Environment**, Maths
* Science, Technology, **Economics**, Maths
* Science, Technology, **Education**, Maths
* Science, Technology, **Electronics**, Maths
* Science, Technology, **Enterprise**, Maths
* Science, Technology, **Evolving**, Maths
* Science, Technology, **Ecology**, Maths
* Science, Technology, **Energy**, Maths
* Science, Technology, Engineering, **Marketing**
* Science, Technology, Engineering, **Medicine**
* Science, Technology, Engineering, **Mining**
* Science, Technology, Engineering, **Machines**
* Science , Technology, Engineering, **Management**
* Science, Technology, Engineering, **Mechanics**
* **Scientific**, **Technological**, **Evolutionary**, **Methods**

Engineering roles have the highest association with STEM qualifications followed by science and teaching

**A higher proportion of females stated engineering (75%) as a STEM career compared to 67% of males**

This slide shows a column graph of types of jobs people associate with STEM degree or certificate. 
See appendix - Table 39

Students show highest interest for science and technology and lowest interest in engineering, the career most associated with STEMThis bar chart conveys data on level of interest towards STEM subjects, at a total level. Data is based on a 5 point scale - very/somewhat/neither/not really/not at all interested.
See appendix - Table 40

Males show significantly higher interest towards STEM subjects with technology and engineering showing the largest discrepancy This bar chart conveys data on level of interest towards STEM subjects, at a per-gender level. Data is based on top-2 box from the table (very or somewhat interested).
See appendix - Table 41

Skills in science and technology seen as important to get a good job in the future

This bar chart conveys data on importance of STEM knowledge for employment, at a total level. 5 point rating scale - Very important, Somewhat important, neither, Not really important, Not important at all.
See appendix - Table 42

STEM skills and importance towards employment

This bar chart conveys data on importance of STEM knowledge for employment, at a per-gender level. Data is based on Top-2 box, from the table.
See appendix - Table 43

#### Reasons for and against studying **Science**

##### Positive feedback

**Science is shaping the future**

*”It represents the future, science teaches us a lot about the world which is important.” Male, 25*

**Helps understand how the world works**

*“Science is the basis of almost everything; human behaviour to machinery and technology.” Female, 19*

**Science is broad/teaches various skills**

*“Science has a lot of skills such as team skills, research and allows the individual to absorb a different way of thinking or perspectives than such as business studies.” Female, 17*

**Prepares people for good jobs**

*“Science is one of the main driving forces behind today's innovations and new creations. By having a large quantity of knowledge about science it would allow someone to get a good job.” Male, 18*

**Science skills are in high demand.**

*”Most employers these days are seeking candidates with technology knowledge and the skills that one gains in a STEM degree.” Female,18*

##### Negative feedback

**Irrelevant**

*“For me personally, that's not applicable. And for the majority of jobs, I cannot see how it's relevant.” Female, 16*

**Too specific**

*“Because science is a very specific field in my opinion.” Male, 17*

*“Science is a specific subject and personally doesn't relate to what I am interested in pursuing as a career”*

*Female, 19*

**Don’t like it**

*“Because science is boring and useless.” Male, 16*

#### Reasons for and against studying **Technology**

##### Positive feedback

**Keeping up with the pace of technology**

*”Technology is evolving and one day, it may make up most of our jobs so understanding it is vital.” Female, 14*

**Requirement for good jobs**

*“Technology is being more heavily integrated with all occupations in modern society. Having fundamental knowledge and skills in the area will be helpful, perhaps even crucial, in order to find a good job” Female, 15*

**It’s everywhere**

*“Technology is virtually involved in every career whether it be through making simple spreadsheets on Excel for an accountant or monitoring cameras as a security officer, people should have a basic or advanced understanding of technology depending on their career choice.” Female, 19*

**It’s the future**

*“Technology represents the future including computers, AI, robots and automation.” Male, 25*

##### Negative feedback

**Not important for employment**

*“Being an event manager doesn't really require an in-depth knowledge of technology.” Female, 23*

*“Most of the jobs I could see myself doing use little or no technology.” Non-binary, 15*

*“You don't have to be skilled in tech to get many jobs.” Female, 22*

**Only basic knowledge is required**

*“Most jobs only require a basic knowledge of technology.” Male, 24*

**Not interested - Don’t like it**

*“I don't want a job that needs a technology skill set.” Female, 25*

#### Reasons for and against studying **Engineering**

##### Positive feedback

**Problem solving skills essential for workforce**

*”Problem solving skills can be applied to any life or work situation.” Female, 17*

**Promotes, creativity, innovation and logical thinking**

*“A lot of the skill set in the jobs available requires the ability to be creative and innovative.” Male, 19*

*“Engineering sparks creativity as well as logical thinking and reasoning.” Female, 14*

**Important to have basic knowledge**

*“It is important to know a bit about how things in life are developed and how they work.” Female, 19*

***Allows us to build new things***

*“Engineering gives someone knowledge of how things are built and how to create things, which is good.” Male, 18*

##### Negative feedback

**Many jobs don't require these skills**

*“There are many other jobs that are not related to engineering such as jobs in the health and teaching field.” Female, 18*

**Too specific**

*“Unless you want to become an engineer I don't see it being useful in other professions.” Male, 19*

**Unrelated to my career choice**

*“I think it's not important because I want to get a business job.****”*** *Female, 20*

**Don't know what you learn in engineering**

*“I don't have a good understanding of what engineering actually consists of. I feel like there should be more education around engineering and what it is.” Female, 17*

#### Reasons for and against studying **Maths**

##### Positive feedback

**Basic maths knowledge is important for all jobs**

*“Every job will use some bits of maths, the most basic being able to know how to add, subtract, multiply and divide.” Female, 17*

**Essential life skill**

*“Maths is a basic life skills which is involved in everyday life. Knowledge of these skills allows you to develop more skills and have more options.” Female, 16*

*“Maths can help develop problem solving skills and a logical mind set which can be an asset in almost all jobs.” Female, 18*

**Foundation for all STEM subjects**

*“All thorough understanding of science, technology and engineering involves a certain level of mathematical comprehension and therefore knowledge of maths is important in order to get a good job.” Female, 24*

**High paying jobs**

*“A lot of high-paying jobs require skills in maths.” Male, 19*

##### Negative feedback

**Many jobs don't require these skills**

*“Maths is mostly useless unless you do accounting or anything with numbers. It does not assist one in developing legal arguments or liaising with clients.” Female, 18*

**Too specific**

*” Unless you want to work in a science or mathematical industry maths is not that significant.” Female, 16*

**Unrelated to my career choice**

*“Although it is helpful, an event manager does not need to be incredibly mathematical in order to secure a good job.****”*** *Female, 23*

**Machines do it better**

*“Computers do everything and is generally more time efficient and free from human error.” Female, 23*

### Confidence in STEM

Confidence in getting good results in STEM subjects

This bar chart conveys data on confidence on getting good results in STEM subjects, at a total level. Rating is on a 5-point scale: Not confident at all, Not really confident, Neither, Somewhat confident, Very confident
See appendix - Table 44

This bar chart conveys data on confidence on getting good results in STEM subjects, at a per-gender level. Data is taken from the Top 2 box within the table.
See appendix - Table 45

Lack of confidence in science is attributed to low interest, previous bad experiences and perceptions of the subject being too complex

This bar chart conveys data on reasons for low confidence in Science, at a per-gender level.
See appendix - Table 46

*“I've never been that interested in science so I find it hard to remember.” Female, 20*

*“I find it difficult to grasp the concepts. Not motivated to learn and put effort in as I have no real interest in it.” Male, 16*

*“I have always been an average student in science in high school, and I don't learn about it anymore.” Female, 19*

*“I get lost and overwhelmed with all of the different terms and logic in science.” Female, 25*

*“I struggle to understand some concepts in science, and I wish I had a better science teacher to help me learn about them.” Female, 15*

*“I’ve never been that good in science at school and now I feel like I know less so I wouldn't consider it.” Female, 21*

*“I haven't done well in the subject since Year 8.” Female, 16*

Lack of familiarity with technology causes an element of anxiety which discourages students from wanting to start to learn about it

This bar chart conveys data on reasons for low confidence in Technology, at a per-gender level.
See appendix - Table 47

*“I don't know much about technology nor have I expressed much interest.” Female, 18*

*“I am terrible at anything technology related.” Female, 19*

*“Because I struggle using new software.” Male, 14*

*“I'm terrible with technology and never studied it.” Female, 19*

*“I have never studied much to do with technology. It would be hard at first to get some basic knowledge.” Female, 24*

*“I don't understand what it consists of but I assume its coding etc and I know I am not good at .” Female, 17*

*“I've never really been good with the programming/coding side of technology. I can use it and get the hang of it, but programming and coding is something I didn't pick up.” Male, 15*

*“It just sounds confusing, lots of terms I don't understand.” Male, 19*

Low understanding of engineering is a major driver for low confidence; females have significantly lower exposure to the subjectThis bar chart conveys data on reasons for low confidence in Engineering, at a per-gender level.
See appendix - Table 48

*“It is something I've never explored and was never encouraged in school to explore. As a female, there were never many role models that we could take courage and direction from in the sector.” Female, 20*

*“Once again, I’m not sure what it consists of thus I assume I would be bad at it.” Female, 17*

*“I haven't learnt anything about engineering so I have no knowledge or skills to get good results.” Female, 15*

*“Since engineering is very difficult from what I have heard. I don't think I would be ready for it.” Female, 20*

*“Subjects are hard to pass.” Female, 19*

*“I have no knowledge about engineering in general.” Female, 23*

*“Engineering is a very challenging degree and involves a lot of maths. I am not good at maths.” Female, 18*

*“Engineering is a subject that involves many aspects that I’m not confident in.” Female, 17*

There is an overarching perception for many students that they’re simply not good with maths; this is as high as 37% among females

This bar chart conveys data on reasons for low confidence in Maths, at a per-gender level.
See appendix - Table 49

*“Because I’ve never been good at maths.” Male, 20*

*“I suck.” Female, 23*

*“I'm TERRIBLE at maths and my dumb brain doesn't understand anything.” Female, 16*

*“Never been good at this subject due to my mentality but I’d love to try again.” Female, 17*

*“It's difficult and requires lots of practice. I get distracted very easily and maths isn't something you cram you need constant practice.” Male, 22*

*“Maths is a hard concept to grasp and often leaves me very confused.” Female, 18*

*“Not interested and have struggled with the subject throughout high school.” Female, 18*

*“Maths was a subject I was good at, until a teacher in high school failed me as a student. I am no longer confident.” Female , 23*

*“Cos I'm hopeless at it, my teacher reckons I have maths anxiety and I just freeze whenever I see a maths problem.” Female, 15*

While 4 in 5 people appreciate the positive impact science has on the world, only half believe it’s important for employment, and only half discuss science with family and friendsThis shows a stacked bar chart conveying data on perceptions about science and technology, at a total level.
See appendix - Table 50

Males show higher levels of excitement towards science and technology, have higher levels of engagement and a higher proportion want to follow a career in the field

This shows a bar chart conveying data on levels of excitement towards science and technology, a per-gender level.
See appendix - Table 51

The main factors influencing subject selection are intrinsic values and interests and skills/abilities; males are more influenced by external stimuli while females are driven by an ambition to change the world

This shows a bar chart conveying data on factors influencing subject selection, at Total and per-gender levels.
See appendix - Table 52

Parents are the most influential people for students selecting their subjects, slightly more so for females

**The only significant difference of influential people across age groups is the importance students aged 14-17 place on teachers compared to older age groups**

This shows a Column chart showing data on people who influence subject selection, at Total and per-gender levels.
See appendix - Table 53

Almost half of all people are considering studying STEM-related subjects in the future; this was largely driven by males

This shows a stacked column chart showing intention to study STEM in future, at a Total and per-gender level.
See appendix - Table 54

Many students already have good idea about the STEM career they want to pursue

This shows a bar chart showing specific reasons for consideration of STEM subjects, and how these vary by gender.
See appendix - Table 55

*“Because I want to be an engineer.” Male, 15*

*“I am just extremely interested in STEM, with the minimal amount of females interested it makes me aspire to study STEM related subjects to close the gender gap.” Female, 16*

*“STEM helps to shape the future and is needed to keep the world constantly moving.” Female, 17*

*“As they are in high demand across many industries and it’s important that women explore STEM within the future for subject to become less male dominant.” Female, 17*

More than half of those not considering studying STEM simply have other interests; only small minority have negative connotation towards STEM

This shows a bar chart showing that non-considerers of STEM is largely due to having other interests as opposed to a negative perception of STEM.
See appendix - Table 56

*“I'm not interested in Science, it never matched being a business owner” Male, 17*

*“It just doesn't fit with my interests, knowledge and abilities.” Female, 23*

*“I'm not interested in the field. I am more interested in English, language, fine arts, creativity.” Female, 19*

*“Because I'm not interested in it and I'm more focused on working with people.” Male, 13*

*“Because I have my heart set on studying tourism, events and hospitality. I am good at this and it’s what I enjoy.” Female, 19*

*“I am an UX designer so I already know coding.” Female, 22*

*“Because I am keen on health subjects such as OT and Physio.” Male, 19*

*“Not precisely related to Finance.” Male, 24*

### Perception about STEM and Gender Differences

The majority of people disagree that there is any gender superiority across all STEM subjects

**Summary – ‘Boys and girls are as good as each other’**

**This shows a column chart showing at a total level, the (lack of) perceived gender superiority across all STEM subjects.
See appendix - Table 57**

The majority believe both genders are equally ‘good’ at maths, but a slightly higher proportion of males believe ‘boys are better than girls’ at maths

**Male perceptions that boys are better than girls at maths increased with age:**

* **14-17: 8%,**
* **18-21: 15%**
* **22-25: 16%**

This shows a column chart showing perceived gender superiority in Maths.
See appendix - Table 58

The majority believe both genders are equally ‘good’ at science, but a slightly higher proportion of males believe ‘boys are better than girls’ at science

This shows a column chart showing perceived gender suitability more for Males than Females when it comes to Science, through the viewpoint of Male respondents.
See appendix - Table 59

Technology and engineering have highest proportion of males who believe ‘boys are better than girls’ in these subjectsThis shows a column chart indicating perceived gender superiority (favouring Males) when it comes to Technology, specifically.
See appendix - Table 60

Technology and engineering have highest proportion of males who believe ‘boys are better than girls’ in these subjects

This chart shows a column chart indicating perceived gender superiority (favouring Males) when it comes to Engineering, specifically.
See appendix - Table 61

The majority of careers are seen as gender-neutral, however, certain career gender stereotypes such as ‘labourer’ and ‘hairdresser’ still prevail

This chart shows a stacked bar chart showing data on whether respondents consider each career to be more for Males or Females.
See appendix - Table 62

STEM careers such as inventor, mathematician, engineer and programmers perceived to be male-oriented careers by both genders

This chart shows a horizontal bar chart per career, showing at a Total level, also subdivided by Males and Females, the data on to what degree these careers are considered more to be suited to males or females.
See appendix - Table 63 and 64

### STEM – Extracurricular Activities

45% have attended events in the past 12 months with a quarter going to more than one; attendance is more popular with males

This shows a pie chart showing at a Total level, how many STEM events have been attended by the respondents in the past 12 months.
See appendix - Table 65

2 out of 5 people are aware of National Science Week and one third know about Questacon, with females showing higher levels of awarenessThis chart shows a horizontal bar chart showing at a Total level, also subdivided by Males and Females, the awareness of individual STEM-related events.
See appendix - Table 66

National Science Week and Questacon most popular STEM-related events among young people

This chart shows a horizontal bar chart showing at a Total level, also subdivided by Males and Females, the most popular STEM-related events.
See appendix - Table 67

45% of people who attended the events say it increased their interest in studying STEM-related subjects

This horizontal stacked bar chart shows at a Total level, also subdivided by Males and Females, the interest change from STEM events.
See appendix - Table 68

## Contact us

Let us help you connect with Australia’s youth



Phone: 1300 843 334 (1300 THE EDGE)

Website: studentedge.org

Website: youthinsight.com.au

## Appendix – Tabular data

### Demographic Overview

#### Table 1. Age

| Age | Percentage |
| --- | --- |
| 12 -13 | 6% |
| 14 - 17 | 32% |
| 18 - 21 | 33% |
| 22 - 25 | 29% |

#### Table 2. Gender

| Gender | Percentage |
| --- | --- |
| Male | 49% |
| Female | 49% |
| Non-binary | 2% |

#### Table 3. State

| State | Percentage |
| --- | --- |
| NSW | 32% |
| VIC | 28% |
| QLD | 18% |
| WA | 11% |
| SA | 7% |
| ACT | 1% |
| TAS | 2% |
| NT | 1% |

#### Table 4. Region

| Region | Percentage |
| --- | --- |
| Metro | 89% |
| Regional | 11% |

#### Table 5. Employment status

| Employment status | Percentage |
| --- | --- |
| Working full-time | 15% |
| Working part-time | 16% |
| Working casually | 31% |
| Working in holidays only | 4% |
| Stay at home parent | 1% |
| Not employed and looking for work | 22% |
| Not employed and not looking for work | 9% |
| Other | 1% |

#### Table 6. Country of birth

| Country of birth | Percentage |
| --- | --- |
| Australia | 87% |
| Rest of World | 13% |

#### Table 7. Parents’ country of birth

| Parents’ country of birth | Percentage |
| --- | --- |
| Australia | 49% |
| One in Australia and one overseas | 13% |
| Both overseas | 37% |
| Prefer not to say | 1% |

#### Table 8. ATSI

| ATSI | Percentage |
| --- | --- |
| Yes | 3% |
| No | 96% |
| Prefer not to specify | 1% |

#### Table 9. Currently studying

| Currently studying | Percentage |
| --- | --- |
| Yes | 76% |
| No | 24% |

#### Table 10. Year of study

| Year of study | Percentage |
| --- | --- |
| High School –Y7 & 8 | 6% |
| High School –Y9 & 10 | 14% |
| High School –Y11 & 12 | 23% |
| Uni – UG Y1 | 15% |
| Uni – UG Y2 | 13% |
| Uni – UG Y3 | 10% |
| Uni – UG Y4 | 8% |
| Uni – PG | 6% |
| TAFE/ Private College | 5% |

#### Table 11. Parents’ highest level of education

| Parents’ highest level of education | Percentage |
| --- | --- |
| Primary School | 1% |
| High School (Year 10) | 9% |
| High School (Year 12) | 22% |
| VET Certificate | 4% |
| VET Diploma | 4% |
| Bachelor’s degree | 27% |
| Grad. diploma or cert | 10% |
| Masters | 11% |
| Doctorate | 3% |
| Other (please specify) | 1% |
| Not sure/prefer not to say | 8% |

#### Table 12. Student type

| Student type | Percentage |
| --- | --- |
| International | 7% |
| Domestic | 93% |

#### Table 13. Type of school

| Type of school | Percentage |
| --- | --- |
| Public School | 47% |
| Catholic School | 18% |
| Private School | 21% |
| Selective School | 12% |
| Boarding School | 0% |
| Other (please Specify) | 2% |

#### Table 14. Parents’ employment

| Parents’ employment | Percentage |
| --- | --- |
| Unrelated to STEM | 61% |
| STEM related work | 20% |
| Unemployed | 3% |
| Don’t know | 5% |
| Other (please specify) | 11% |

#### Table 15. Year 9 and 10 current elective subject selections (Top 15)

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Languages | 37% | 38% | 36% |
| PDHPE - Physical Activity | 25% | 29% | 21% |
| Commerce | 25% | 25% | 26% |
| Food Technology | 24% | 23% | 25% |
| Design and Technology | 22% | 30% | 13% |
| Humanities and Social Sciences | 21% | 17% | 25% |
| Arts - Visual Arts | 20% | 21% | 19% |
| Info & Software Tech | 20% | 32% | 8% |
| Music | 19% | 15% | 23% |
| History Elective | 19% | 13% | 24% |
| Drama | 18% | 10% | 26% |
| PDHPE - Sports Studies | 16% | 16% | 16% |
| Photography Digital media | 15% | 16% | 14% |
| Geography Elective | 12% | 14% | 9% |
| Industrial Technology | 9% | 17% | 2% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 9 and 10? Please select a maximum of 6 subjects and minimum of 3.

Base: Total – 194, Males - 104, Females - 87

Standard Maths and Science subjects are mandatory at this stage of school, hence they were not included in this question

\*HSIE - Human Society and Its Environment

#### Table 16. Year 9 and 10 current elective subject selections – STEM Subjects only

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Design and Technology | 22% | 30% | 13% |
| Information and Software Technology | 20% | 32% | 8% |
| Human Society and Its Environment (HSIE) - Geography Elective | 12% | 14% | 9% |
| Industrial Technology | 9% | 17% | 2% |
| Graphics Technology | 9% | 13% | 3% |
| Agricultural Technology | 4% | 3% | 5% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 9 and 10? Please select a maximum of 6 subjects and minimum of 3.

Base: Total – 194, Males - 104, Females - 87

Standard Maths and Science subjects are mandatory at this stage of school, hence they were not included in this question

\*HSIE - Human Society and Its Environment

#### Table 17. Year 9 and 10 current elective subject selections – Grouped by learning areas

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Technologies | 63% | 74% | 50% |
| HSIE | 60% | 54% | 66% |
| Creative arts | 57% | 49% | 66% |
| STEM subjects | 52% | 70% | 32% |
| PDHPE | 37% | 41% | 32% |
| Languages | 37% | 38% | 36% |
| VET in Years 9 and 10 | 7% | 8% | 5% |
| Other (please specify) (included Commerce/business, Woodwork, Accounting, Historical mysteries.) | 22% | 19% | 25% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 9 and 10? Please select a maximum of 6 subjects and minimum of 3.

Base: Total – 194, Males - 104, Females - 87

Standard Maths and Science subjects are mandatory at this stage of school, hence they were not included in this question

\*HSIE - Human Society and Its Environment

#### Table 18. Year 11 and 12 current elective subject selections – Top 15

| Elective subjects | Total | Male | Female |
| --- | --- | --- | --- |
| Mathematics + Mathematics Advanced + Mathematics Extension | 80% | 81% | 80% |
| English Advanced/Extension/Other | 49% | 40% | 57% |
| Biology | 37% | 31% | 43% |
| Chemistry | 36% | 37% | 36% |
| Physics NEW | 23% | 33% | 14% |
| Business Studies | 21% | 22% | 18% |
| Personal Development, Health and Physical Education | 17% | 10% | 26% |
| Legal Studies | 15% | 13% | 18% |
| Languages | 15% | 11% | 20% |
| Studies of Religion | 12% | 9% | 16% |
| Modern History | 11% | 12% | 10% |
| Economics | 10% | 15% | 5% |
| Ancient History | 10% | 11% | 8% |
| Food Technology | 8% | 6% | 11% |
| Other - (specify) | 12% | 9% | 15% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 11 and 12? Please select a maximum of 6 subjects and minimum of 3,

Base: Total – 375, Males - 201, Females - 162

Standard English is mandatory at this stage of school, hence it is not included in this question.

#### Table 19. Year 11 and 12 current elective subject selections – STEM subjects only (Top 15)

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Mathematics | 47% | 43% | 53% |
| Biology | 37% | 31% | 44% |
| Mathematics Advanced | 36% | 40% | 30% |
| Chemistry | 35% | 35% | 35% |
| Mathematics Extension | 24% | 31% | 15% |
| Physics | 23% | 32% | 13% |
| VET courses | 11% | 18% | 2% |
| Industrial Technology | 6% | 7% | 4% |
| Agriculture | 5% | 9% | 1% |
| Engineering Studies | 5% | 8% | 1% |
| Information Processes and Technology | 5% | 6% | 4% |
| Geography | 5% | 5% | 5% |
| Design and Technology | 4% | 5% | 2% |
| Software Design and Development | 3% | 5% | 1% |
| Investigating Science | 3% | 3% | 2% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 11 and 12? Please select a maximum of 6 subjects and minimum of 3,

Base: Total – 375, Males - 201, Females - 162

Standard English is mandatory at this stage of school, hence it is not included in this question.

#### Table 20. Year 11 and 12 current elective subject selections – Grouped by learning areas

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| STEM | 95% | 99% | 91% |
| Mathematics | 80% | 81% | 80% |
| Science | 67% | 68% | 66% |
| HSIE | 65% | 64% | 66% |
| English | 49% | 40% | 57% |
| Technologies | 31% | 36% | 27% |
| PDHPE | 25% | 16% | 35% |
| Creative arts | 22% | 17% | 26% |
| VET Courses | 19% | 23% | 14% |
| Languages | 15% | 11% | 20% |
| Other - (specify) | 12% | 9% | 15% |

Question asked: Which of the following elective subjects best describes the subjects you have chosen to do in Years 11 and 12? Please select a maximum of 6 subjects and minimum of 3.

Base: Total – 375, Males - 201, Females - 162

Standard English is mandatory at this stage of school, hence it is not included in this question.

#### Table 21. Higher education current subject selections – Top 15

| Subject | Total | Male | Female |
| --- | --- | --- | --- |
| Business and management | 14% | 15% | 12% |
| Medicine | 9% | 8% | 9% |
| Engineering and technology | 8% | 14% | 3% |
| Education and training | 7% | 5% | 8% |
| Computing and information technology | 7% | 10% | 4% |
| Law | 7% | 5% | 9% |
| Accounting | 7% | 9% | 5% |
| Health services and support | 6% | 4% | 8% |
| Psychology | 6% | 4% | 8% |
| Humanities and social sciences | 6% | 4% | 7% |
| Creative arts | 5% | 4% | 6% |
| Nursing | 5% | 3% | 6% |
| Communications | 4% | 4% | 4% |
| Biology | 4% | 2% | 5% |
| Other (please specify) | 8% | 8% | 9% |
| Economics | 3% | 4% | 2% |

Question asked: Which of the below courses best describes the course you are currently studying in your higher education course? Please select a maximum of 2 subjects and minimum of 1

Base: Total – 929, Males -397, Females - 508

#### Table 22. Higher education current subject selections – STEM subjects only

| Subject | Total | Male | Female |
| --- | --- | --- | --- |
| Total STEM | 26% | 35% | 18% |
| Engineering and technology | 8% | 14% | 3% |
| Computing and information technology | 7% | 10% | 4% |
| Biology | 4% | 2% | 5% |
| Chemistry | 3% | 3% | 2% |
| Mathematics | 2% | 3% | 2% |
| Physics | 2% | 3% | 1% |
| Earth and environmental sciences | 1% | 2% | 1% |
| Environmental studies | 1% | 1% | 1% |
| Agriculture | 1% | 1% | 1% |

Question asked: Which of the below courses best describes the course you are currently studying in your higher education course? Please select a maximum of 2 subjects and minimum of 1

Base: Total – 929, Males -397, Females - 508

#### Table 23. Elective subject intention for Years 9 and 10 – Top 10

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Food Technology | 50% | 41% | 60% |
| Design and Technology | 35% | 42% | 29% |
| Languages | 27% | 15% | 38% |
| PDHPE - Physical Activity | 26% | 22% | 29% |
| Arts - Photography Digital media | 25% | 27% | 23% |
| Humanities and Social Sciences | 23% | 25% | 23% |
| Information and Software Technology | 21% | 35% | 7% |
| VET in Years 9 and 10 | 20% | 31% | 9% |
| Arts – Music | 18% | 21% | 16% |
| Arts – Drama | 17% | 8% | 26% |

Question asked: Thinking about high school, which of the following subjects would you be interested in studying once you get the choice to select your subjects. Please select from the below list which elective subjects you would be interested in for Years 9 and 10. Please select up to 5 subjects.

Base: Total – 65, Males - 24, Females - 40

Caution: Small sample size. Sig testing not applicable

#### Table 24. Elective subject intention for Years 9 and 10 – STEM Subjects only

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Design and Technology | 35% | 42% | 29% |
| Information and Software Technology | 21% | 35% | 7% |
| Graphics Technology | 16% | 23% | 11% |
| Industrial Technology | 15% | 24% | 7% |
| Human Society and Its Environment (HSIE) - Geography Elective | 10% | 11% | 9% |
| Agricultural Technology | 8% | 8% | 7% |

Question asked: Thinking about high school, which of the following subjects would you be interested in studying once you get the choice to select your subjects. Please select from the below list which elective subjects you would be interested in for Years 9 and 10. Please select up to 5 subjects.

Base: Total – 65, Males - 24, Females - 40

Caution: Small sample size. Sig testing not applicable

#### Table 25. Elective subject intention for Years 9 and 10 – Grouped by learning areas

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Technologies | 82% | 85% | 79% |
| STEM Subjects | 68% | 84% | 53% |
| Creative Arts | 61% | 42% | 80% |
| Human Society and Its Environment | 51% | 49% | 51% |
| PDHPE | 37% | 30% | 43% |
| Languages | 27% | 15% | 38% |
| VET in Years 9 and 10 | 20% | 31% | 9% |
| Other - Write In (Required) | 10% | 8% | 12% |

Question asked: hinking about high school, which of the following subjects would you be interested in studying once you get the choice to select your subjects. Please select from the below list which elective subjects you would be interested in for Years 9 and 10. Please select up to 5 subjects.

Base: Total – 65, Males - 24, Females - 40

#### Table 26. Elective subject intention for Years 11 and 12 – Top 15

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Chemistry | 52% | 46% | 57% |
| Biology | 40% | 29% | 52% |
| Mathematics Advanced | 38% | 41% | 35% |
| English Advanced/Extension/Other | 37% | 28% | 46% |
| Mathematics | 32% | 25% | 37% |
| Mathematics Extension | 24% | 25% | 24% |
| Physics NEW | 25% | 30% | 20% |
| Languages | 23% | 18% | 29% |
| Legal Studies | 21% | 19% | 21% |
| Business Studies | 17% | 15% | 20% |
| Economics | 17% | 19% | 16% |
| Personal Development, Health and Physical Education | 13% | 10% | 17% |
| Studies of Religion | 12% | 8% | 17% |
| Business and Economics | 12% | 19% | 5% |
| Modern History | 12% | 7% | 15% |

Question asked: Please select from the below list which elective subjects you are considering choosing for Years 11 and 12. Please select up to 7 subjects.

Base: Total – 194, Males - 104, Females - 87

#### Table 27. Elective subject intention for Years 11 and 12 – Grouped by learning areas

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| STEM Subjects | 94% | 93% | 95% |
| Mathematics | 75% | 70% | 80% |
| HSIE | 74% | 69% | 77% |
| Science | 73% | 69% | 77% |
| Technologies | 38% | 54% | 21% |
| English | 37% | 28% | 46% |
| Creative Arts | 31% | 25% | 36% |
| Languages | 23% | 18% | 29% |
| PDHPE | 22% | 21% | 24% |
| VET | 22% | 29% | 14% |

Question asked: Please select from the below list which elective subjects you are considering choosing for Years 11 and 12. Please select up to 7 subjects.

Base: Total – 194, Males - 104, Females - 87

#### Table 28. Elective subject intention for Years 11 and 12 – STEM subjects only (top 15)

| Elective subject | Total | Male | Female |
| --- | --- | --- | --- |
| Chemistry | 52% | 46% | 57% |
| Biology | 40% | 29% | 52% |
| Mathematics Advanced | 38% | 41% | 35% |
| Mathematics | 32% | 25% | 37% |
| Physics | 25% | 30% | 20% |
| Mathematics Extension | 24% | 25% | 24% |
| Information and Digital Technology (VET) + Automotive (VET) + Metal and Engineering (VET) + Construction (VET) + Electrotechnology (VET) | 12% | 21% | 3% |
| Design and Technology | 9% | 15% | 4% |
| Science Extension | 7% | 10% | 4% |
| Industrial Technology | 7% | 13% | 0% |
| Geography | 6% | 7% | 5% |
| Engineering Studies | 6% | 9% | 2% |
| Marine Studies | 5% | 6% | 4% |
| Software Design and Development | 5% | 10% | 0% |
| Information Processes and Technology | 5% | 9% | 0% |

Question asked: Please select from the below list which elective subjects you are considering choosing for Years 11 and 12. Please select up to 7 subjects.

Base: Total – 194, Males - 104, Females - 87

#### Table 29. Year 11 and 12 is likely to see an increase in STEM subject selection

|  | Current | Future |
| --- | --- | --- |
| Total - Year 11 and 12 | 4 | 6 |
| Males - Year 11 and 12 | 5 | 8 |
| Females - Year 11 and 12 | 4 | 6 |

#### Table 30. Courses considered for higher education - Top 15

| Courses | Total | Male | Female |
| --- | --- | --- | --- |
| Engineering & tech | 17% | 27% | 7% |
| Medicine | 16% | 15% | 18% |
| Business and management | 14% | 14% | 13% |
| Comput & info tech | 10% | 16% | 4% |
| Psychology | 9% | 5% | 14% |
| Law | 9% | 6% | 12% |
| Nursing | 8% | 5% | 12% |
| Education and training | 7% | 3% | 12% |
| Creative arts | 7% | 9% | 4% |
| Health services & support | 6% | 2% | 11% |
| Accounting | 5% | 7% | 4% |
| Biology | 5% | 3% | 8% |
| Pharmacy | 5% | 4% | 6% |
| Architecture | 5% | 6% | 4% |
| Other - Write In (Required) | 8% | 8% | 8% |

Question asked: Please select from the below list which course(s) you are considering after high school. Please select up to 2 courses. .

Base: Total – 375, Males - 201, Females - 162

#### Table 31. Courses considered for higher education – STEM only subjects

| Course | Total | Male | Female |
| --- | --- | --- | --- |
| STEM Total | 47% | 58% | 36% |
| Engineering & tech | 17% | 27% | 7% |
| Medicine | 16% | 15% | 18% |
| Computing & info tech | 10% | 16% | 4% |
| Biology | 5% | 3% | 8% |
| Physics | 4% | 6% | 2% |
| Mathematics | 2% | 2% | 3% |
| Chemistry | 2% | 2% | 3% |
| Agriculture | 2% | 2% | 1% |
| Earth & environ sciences | 1% | 1% | 1% |
| Environmental studies | 0% | 0% | 0% |

Question asked: Please select from the below list which course(s) you are considering after high school. Please select up to 2 courses. .

Base: Total – 375, Males - 201, Females - 162

#### Table 32. Career Certainty

| Certainty level | Total | Male | Female | 12-13 | 14-17 | 18-21 | 22-25 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Very certain | 26% | 29% | 23% | 16% | 20% | 27% | 34% |
| Fairly certain | 42% | 41% | 43% | 34% | 42% | 46% | 39% |
| Hardly certain | 25% | 23% | 26% | 28% | 30% | 21% | 21% |
| Not at all certain | 7% | 7% | 7% | 23% | 7% | 5% | 6% |

Question asked: Thinking about what type of career you want after you finish school, which of the following best describes you?

Base: Total -2,092, Males – 978, Females – 1069, Ages 12-13 - 77; 14-17 - 650; 18-21 - 771; 22-25 - 594

#### Table 33. Differences in career preference between genders

| Career | Total | Male | Female |
| --- | --- | --- | --- |
| STEM-related career | 31% | 41% | 20% |
| Medical doctor or nurse | 21% | 15% | 27% |
| Business owner | 15% | 17% | 13% |
| Teacher | 13% | 9% | 17% |
| Computing or information technology (IT) | 11% | 17% | 5% |
| Scientist | 11% | 10% | 11% |
| Engineer | 10% | 15% | 4% |
| Lawyer | 9% | 10% | 9% |
| Business person | 9% | 10% | 9% |
| Accountant | 8% | 10% | 5% |
| Advertising or marketing consultant | 6% | 7% | 6% |
| Pharmacist | 6% | 7% | 5% |
| Artist | 6% | 5% | 6% |
| Public servant (includes defence force) | 5% | 6% | 6% |
| Community and personal service (aged care, child care) | 5% | 2% | 7% |
| Emergency services (police, fire or ambulance) | 4% | 4% | 20% |

Question asked: And what type of career would you like to have in the future? Select up to 3 choices

Base: Total – 1,434, Males - 691, Females - 714

#### Table 34. Types of science careers interested in

| Scientist careers | Total | Male | Female |
| --- | --- | --- | --- |
| Biologist | 33% | 20% | 47% |
| Chemist | 27% | 31% | 25% |
| Earth or environmental scientist | 15% | 18% | 11% |
| Other (please specify) (entries included: Agricultural, Astronomer, Biotechnician, Data scientist, Dentistry, Forensic Scientist  Medical scientist, Neurobiologist, Neuroscience, Sports Scientist, Zoologist) | 14% | 13% | 13% |
| Physicist | 11% | 18% | 4% |

Question asked: You mentioned that you are interested in becoming a scientist in the future. From the list below what kind of scientist would you like to be?

Base: Total – 154, Male – 71, Female – 78

Caution: Small sample size. Sig testing not applicable

#### Table 35. Importance of factors on career choice

| Career choice | Not important at all | Not very important | Neither | Somewhat important | Very Important |
| --- | --- | --- | --- | --- | --- |
| Has good working conditions | 1% | 2% | 5% | 31% | 61% |
| Job security | 1% | 3% | 8% | 33% | 55% |
| Subject matter is interesting | 1% | 2% | 8% | 35% | 53% |
| Is a fun environment to work in | 1% | 3% | 9% | 42% | 45% |
| Lots of variety and opportunities for learning new skills | 1% | 3% | 10% | 43% | 43% |
| Is in an industry that is sustainable | 1% | 3% | 12% | 42% | 42% |
| Helping people | 2% | 4% | 16% | 39% | 39% |
| High salary | 1% | 5% | 12% | 47% | 34% |
| Is in an industry that is growing | 1% | 4% | 17% | 44% | 34% |
| Lots of roles available | 1% | 5% | 16% | 47% | 31% |
| Allows you to be creative | 2% | 8% | 21% | 41% | 28% |
| Is in an industry that is constantly evolving | 1% | 6% | 20% | 46% | 26% |
| Solving a major world problem | 3% | 11% | 27% | 37% | 21% |
| Provides opportunities to travel / move overseas | 5% | 15% | 27% | 33% | 20% |
| Uses lots of technology | 3% | 14% | 29% | 36% | 18% |
| An industry that's existed for a long time | 8% | 20% | 32% | 26% | 14% |

Question asked: How important are each of the following factors when choosing a career?

Base: Total – 2,015 (only asked of people aged 14+)

#### Table 36. Importance of factors on career choice by gender

| Career choice factor | Male | Female |
| --- | --- | --- |
| Uses lots of technology | 63% | 44% |
| Helping people | 73% | 84% |
| Job security | 85% | 93% |
| Has good working conditions | 89% | 96% |
| Lots of variety and opportunities for learning new skills | 83% | 90% |
| Subject matter is interesting | 85% | 92% |
| Is in an industry that is sustainable | 82% | 87% |
| Lots of roles available | 76% | 82% |
| Is a fun environment to work in | 85% | 90% |
| Is in an industry that is growing | 76% | 81% |
| Is in an industry that has existed for a long time | 42% | 38% |
| Is in an industry that is constantly evolving | 71% | 74% |
| Provides an opportunity to travel / move overseas | 54% | 53% |
| Solving a major world problem | 58% | 59% |
| High salary | 81% | 83% |
| Allows you to be creative | 70% | 69% |

Question asked: How important are each of the following factors when choosing a career?

Base: Males – 955, Female - 1,015

#### Table 37. Importance of factors on career choice by age

| Career choice factor | 14-17 | 18-21 | 22-25 |
| --- | --- | --- | --- |
| Has good working conditions | 95% | 90% | 92% |
| Job security | 91% | 87% | 90% |
| Subject matter is interesting | 89% | 88% | 89% |
| Is a fun environment to work in | 89% | 86% | 87% |
| Variety & opps for learning new skills | 87% | 84% | 88% |
| Is in an industry that is sustainable | 87% | 82% | 84% |
| Helping people | 79% | 78% | 79% |
| High salary | 84% | 78% | 84% |
| Lots of roles available | 79% | 80% | 79% |
| Is in an industry that is growing | 80% | 77% | 79% |
| Industry that's constantly evolving | 71% | 71% | 75% |
| Allows you to be creative | 67% | 69% | 71% |
| Solving a major world problem | 60% | 59% | 57% |
| Opportunity to travel /move overseas | 50% | 53% | 58% |
| Uses lots of technology | 54% | 50% | 57% |
| Industry that's existed for long time | 42% | 38% | 46% |

Question asked: How important are each of the following factors when choosing a career?

Base: Ages 14-17 - 650; 18-21 - 771; 22-25 - 594

#### Table 38. What do the letters in STEM mean

| Answer | Percentage |
| --- | --- |
| Correct | 62% |
| Don't Know | 20% |
| Incorrect | 18% |

Question asked: Please write below what you believe the term STEM stands for?

Base: Total – 2,092

#### Table 39. Types of jobs associated with STEM qualifications (open ended)

| Type of job | Percentage |
| --- | --- |
| Engineer (All types) | 71% |
| Scientist (All types) | 43% |
| Teacher/Professor/Lecturer/Academic | 29% |
| Mathematician | 23% |
| IT | 18% |
| Doctor/Surgeon/Medicine | 17% |
| Research (All types) | 14% |
| Programmer, Software developer/engineer/coding | 14% |
| Chemist/pharmacist | 13% |
| Biologist | 13% |
| Physicist | 8% |
| Accountant + Accounting | 8% |
| Architect | 7% |
| Nursing | 5% |
| Lab Tech/Lab scientist | 4% |
| Statistician | 4% |
| Technician | 4% |
| Analyst | 3% |
| Technology (Adviser, support, design, engineer) | 3% |
| Mechanic | 3% |
| Inventor | 3% |
| Unsure | 9% |

Question asked: What type of jobs do you think you would be able to get if you have a STEM degree or certificate

Base: Total – 2,092

#### Table 40. Level of interest in STEM subjects

| Subjects | Not at all interested | Not really interested | Neither | Somewhat interested | Very interested |
| --- | --- | --- | --- | --- | --- |
| Science | 10% | 13% | 13% | 36% | 28% |
| Technology | 7% | 12% | 16% | 39% | 25% |
| Maths | 15% | 17% | 17% | 32% | 18% |
| Engineering | 17% | 23% | 18% | 28% | 14% |

Question asked: How interested are you in each of the below subjects?

Base: Total – 2,092

#### Table 41. Level of interest in STEM subjects – by gender

| Subjects | Male | Female |
| --- | --- | --- |
| Science | 68% | 61% |
| Technology | 75% | 54% |
| Maths | 56% | 45% |
| Engineering | 55% | 28% |

Question asked: How interested are you in each of the below subjects?

Base: Males – 813, Females – 1,051

Top 2 box – Respondents who selected very or somewhat important

#### Table 42. Importance of STEM knowledge for employment

| Subjects | Not important at all | Not really important | Neither important or unimportant | Somewhat important | Very important |
| --- | --- | --- | --- | --- | --- |
| Science | 3% | 6% | 17% | 42% | 32% |
| Technology | 2% | 3% | 10% | 41% | 44% |
| Engineering | 5% | 11% | 25% | 36% | 23% |
| Maths | 3% | 4% | 14% | 46% | 33% |

Question asked: Thinking about getting a good job in the future, how important do you believe it is to have knowledge and skills related to each of the subjects that make up STEM?

Base: Total – 2,092

#### Table 43. Importance of STEM knowledge for employment by gender

| Subjects | Male | Female |
| --- | --- | --- |
| Science | 72% | 75% |
| Technology | 85% | 86% |
| Engineering | 65% | 54% |
| Maths | 77% | 80% |

Question asked: Thinking about getting a good job in the future, how important do you believe it is to have knowledge and skills related to each of the subjects that make up STEM?

Base: Males – 813, Females – 1,051

Top 2 box – Respondents who selected very or somewhat important

#### Table 44. Confidence in getting good results in STEM subjects

| Subjects | Not confident at all | Not really confident | Neither | Somewhat confident | Very confident |
| --- | --- | --- | --- | --- | --- |
| Science | 6% | 11% | 20% | 39% | 23% |
| Technology | 4% | 9% | 22% | 41% | 23% |
| Engineering | 11% | 21% | 31% | 27% | 10% |
| Maths | 8% | 12% | 18% | 39% | 23% |

Question asked: How confident do you feel that you can study and get good results in each of the following subjects?

Base: Total – 2,092

#### Table 45. Confidence in getting good results in STEM subjects

| Subjects | Male | Female |
| --- | --- | --- |
| Science | 64% | 60% |
| Technology | 73% | 56% |
| Engineering | 50% | 26% |
| Maths | 65% | 60% |

Question asked: How confident do you feel that you can study and get good results in each of the following subjects?

Base: Males – 813, Females – 1,051

Top 2 box – Respondents who selected very or somewhat important

#### Table 46. Reasons for low confidence in **Science**

| Reasons for low confidence in science | Male | Female |
| --- | --- | --- |
| Not interested in science | 20% | 21% |
| I'm not very good at science | 18% | 21% |
| It's too hard | 8% | 8% |
| Previous failed attempts | 4% | 9% |
| I don't like it | 6% | 7% |
| I don't understand it | 3% | 8% |
| I'm not very smart | 7% | 3% |
| Haven't studied it for a long time | 1% | 6% |
| I find it hard to study | 1% | 3% |
| Too much to memorise | 4% | 0% |
| I was discouraged by teacher/parent | 1% | 2% |
| Boring | 3% | 0% |

Question asked: Why do you not feel confident about getting good results with science subjects?

Base: Total – 364, Males – 151, Females - 203

#### Table 47. Reasons for low confidence in **Technology**

| Reasons for low confidence in Technology | Male | Female |
| --- | --- | --- |
| Not interested in technology | 15% | 20% |
| I'm not very good with technology | 11% | 18% |
| Don't know anything about technology/never studied it | 6% | 13% |
| It's too hard | 9% | 10% |
| Irrelevant as I don't study technology | 4% | 6% |
| I'm not very smart | 11% | 1% |
| I can't do coding/programming | 3% | 5% |
| I don't like technology | 2% | 4% |
| I don't understand technology | 1% | 5% |
| Haven't studied it for a long time | 0% | 4% |
| Previous failed attempts | 0% | 3% |
| It's always changing | 1% | 2% |
| Wasn't available for me | 1% | 1% |
| Don't need it | 1% | 0% |

Question asked: Why do you not feel confident about getting good results with technology subjects?

Base: Total – 273, Males – 93, Females - 169

#### Table 48. Reasons for low confidence in **Engineering**

| Reasons for low confidence in Engineering | Male | Female |
| --- | --- | --- |
| Not interested in engineering | 15% | 22% |
| I don't study this and never have | 12% | 22% |
| It's too hard | 10% | 11% |
| I don't understand anything about it | 8% | 11% |
| Involves maths which I'm not good at | 8% | 9% |
| I'm not good at engineering | 6% | 6% |
| I don't like it | 3% | 3% |
| Involves physics which I'm not good at | 3% | 2% |
| I'm not very smart | 5% | 0% |
| It wouldn't suit me | 1% | 1% |
| Lack required skills | 2% | 1% |
| Not available at my school | 0% | 1% |
| Previous bad experiences | 1% | 1% |
| It's only for smart people | 1% | 0% |
| Not relevant for me | 0% | 1% |

Question asked: Why do you not feel confident about getting good results with engineering subjects?

Base: Total – 675, Males – 208, Females - 452

#### Table 49. Reasons for low confidence in **Maths**

| Reasons for low confidence in Maths | Male | Female |
| --- | --- | --- |
| I'm not good at maths | 27% | 37% |
| 'It's too hard | 13% | 13% |
| Not interested in maths | 7% | 7% |
| Previous failed attempts | 4% | 8% |
| I don't like maths | 5% | 7% |
| Find it hard to understand | 2% | 6% |
| I'm not very smart | 6% | 1% |
| Not motivated | 5% | 1% |
| I don't have good memory | 2% | 1% |
| Haven’t done maths for a long time | 2% | 1% |
| Boring | 1% | 1% |
| I don't have a good background in maths | 1% | 0% |

Question asked: Why do you not feel confident about getting good results with maths subjects?

Base: Total – 406, Males – 163, Females - 233

#### Table 50. Perceptions about science and technology

| Statements about science and technology | Strongly disagree | Disagree | Neither | Agree | Strongly agree |
| --- | --- | --- | --- | --- | --- |
| Scientists make a positive difference in the world | 2% | 2% | 16% | 45% | 34% |
| Learning about science and technology is exciting | 4% | 8% | 24% | 44% | 20% |
| I will need to know about science and technology to get a good job in the future | 5% | 13% | 27% | 38% | 17% |
| My parents think it’s important to learn about science and technology | 4% | 10% | 31% | 39% | 17% |
| I like to watch shows about science and technology | 6% | 14% | 27% | 39% | 14% |
| My friends are interested in science and technology | 4% | 11% | 28% | 44% | 12% |
| I talk about science and technology at home with my family | 9% | 20% | 27% | 32% | 11% |
| I would like to be a scientist one day | 19% | 26% | 29% | 19% | 7% |

Question asked: Below is a list of statements people have made about science and technology. Please indicate, how much you agree with each of these statements

Base: Total – 2,092

#### Table 51. Perceptions about science and technology by gender

| Statements about science and technology | Male | Female |
| --- | --- | --- |
| Scientists make a positive difference in the world | 77% | 81% |
| Learning about science and technology is exciting | 68% | 60% |
| I will need to know about science and technology to get a good job in the future | 58% | 52% |
| My parents think it’s important to learn about science and technology | 57% | 53% |
| I like to watch shows about science and technology | 58% | 47% |
| My friends are interested in science and technology | 61% | 51% |
| I talk about science and technology at home with my family | 47% | 39% |
| I would like to be a scientist one day | 29% | 22% |

Question asked: Below is a list of statements people have made about science and technology. Please indicate, how much you agree with each of these statements

Base: Males – 978, Females – 1,069

#### Table 52. Factors influencing subject selection

| Factors influencing subject selection | Total | Male | Female |
| --- | --- | --- | --- |
| Personal interests | 68% | 61% | 75% |
| My own skills and abilities | 64% | 60% | 69% |
| Potential earnings | 37% | 40% | 34% |
| Ambition to change the world | 24% | 19% | 29% |
| Work experience | 19% | 20% | 17% |
| Childhood dream | 14% | 13% | 15% |
| The kind of jobs people in my family have | 9% | 9% | 9% |
| YouTube | 9% | 12% | 5% |
| Activities outside of school | 9% | 11% | 7% |
| TV show/movie | 7% | 8% | 7% |
| Books/Magazines | 3% | 4% | 2% |
| None of the above | 3% | 4% | 2% |
| Potential to be famous | 3% | 3% | 2% |

Question asked: From the below list, which factors most influence your decision of the subjects you choose to study? Please select up to 3 factors which influence you the most.

Base: Total – 2,092, Males - 978, Females – 1,069

#### Table 53. People influencing subject selection

| People influencing subject selection | Total | Male | Female |
| --- | --- | --- | --- |
| My parents | 54% | 52% | 58% |
| My friends | 30% | 29% | 30% |
| My school teachers | 24% | 22% | 27% |
| Successful business people | 21% | 22% | 20% |
| Other family (uncles, aunts, cousins) | 13% | 14% | 12% |
| Career advisor | 12% | 13% | 11% |
| Other (please specify) | 9% | 8% | 9% |
| Famous scientists | 7% | 9% | 4% |
| Celebrities | 7% | 7% | 6% |

Question asked: And which of the below people most influence your decision of the subjects you choose to study? Please select up to 2 groups of people which influence you the most?

Base: Total – 2,092

#### Table 54. Intention to study STEM in the future

| Intention to study STEM in the future | Yes | No | Not sure |
| --- | --- | --- | --- |
| Total | 46% | 31% | 23% |
| Male | 52% | 27% | 22% |
| Female | 40% | 35% | 25% |

Question asked: Are you considering studying STEM related subjects in the future? STEM stands for Science, Technology, Engineering and Maths, but it also includes subjects such as biology, chemistry, physics, computing, programming, coding, mechanical and electrical trade.

Base: Total – 2,092, Male - 978, Female - 1,069.

#### Table 55. Reasons for considering studying STEM

| Reasons for considering studying STEM | Male | Female |
| --- | --- | --- |
| I'm interested in it | 20% | 24% |
| Interested in specific STEM career | 13% | 24% |
| Way of the future | 11% | 10% |
| A lot of jobs require these skills/courses | 9% | 7% |
| Engineer | 10% | 3% |
| Technology | 6% | 4% |
| Because I'm good at it and enjoy it | 3% | 7% |
| Want a career involving STEM (general) | 4% | 4% |
| Biology | 2% | 5% |
| Important for me to acquire these new skills/knowledge | 5% | 1% |
| Already studying STEM subject | 2% | 4% |
| It's where most jobs will be | 1% | 0% |
| I work in a STEM area currently | 1% | 1% |
| Important to fix world issues | 2% | 1% |

Question asked: Why are you considering studying subjects related to STEM in the future?

Base: Total – 951, Males – 513, Females - 419

#### Table 56. Reasons for not considering studying STEM

| Reasons for not considering studying STEM | Male | Female |
| --- | --- | --- |
| Not interested in STEM subjects | 25% | 36% |
| Interested in other fields | 12% | 17% |
| Already studying something else | 6% | 8% |
| Already finished my studies | 7% | 6% |
| My career path does not include STEM | 6% | 5% |
| I don't like STEM | 2% | 4% |
| Already work in area outside STEM | 4% | 2% |
| I'm not good at it | 4% | 3% |
| Interested in studying something else | 2% | 3% |
| Boring | 3% | 1% |
| Don't know | 3% | 2% |
| Already working/studying STEM | 2% | 1% |
| Too hard/difficult | 1% | 2% |
| I don't need it | 1% | 1% |
| Not interested in studying at all | 1% | 1% |

Question asked: Why are you NOT considering studying subjects related to STEM in the future?

Base: Total – 659, Males – 258, Females - 385

#### Table 57. Perceived gender superiority across all STEM subjects - Summary – ‘Boys and girls are as good as each other

| Subjects - Results of people who agree that ‘Boys and girls are as good as each other’ | Total | Male | Female |
| --- | --- | --- | --- |
| Maths | 85% | 81% | 90% |
| Science | 85% | 81% | 89% |
| Technology | 78% | 72% | 83% |
| Engineering | 74% | 69% | 79% |

Question asked: In your opinion, when it comes to studying Maths/Science/Technology/Engineering how much do you agree or disagree with the following:

Base: Total – 2,092

#### Table 58. Perceived gender superiority in **Maths**

| Statements about gender superiority | Total | Male | Female |
| --- | --- | --- | --- |
| Boys and girls are as good as each other | 85% | 81% | 90% |
| Girls are better than boys | 5% | 6% | 4% |
| Boys are better than girls | 9% | 13% | 6% |

Question asked: In your opinion, when it comes to studying maths how much do you agree or disagree with the following:

Base: Total – 2,092

#### Table 59. Perceived gender superiority in **Science**

| Statements about gender superiority | Total | Male | Female |
| --- | --- | --- | --- |
| Boys and girls are as good as each other | 85% | 81% | 89% |
| Girls are better than boys | 6% | 7% | 6% |
| Boys are better than girls | 9% | 13% | 5% |

Question asked: In your opinion, when it comes to studying science how much do you agree or disagree with the following:

Base: Total – 2,092

#### Table 60. Perceived gender superiority in **Technology**

| Statements about gender superiority | Total | Male | Female |
| --- | --- | --- | --- |
| Boys and girls are as good as each other | 78% | 72% | 83% |
| Girls are better than boys | 2% | 2% | 2% |
| Boys are better than girls | 20% | 25% | 15% |

Question asked: In your opinion, when it comes to studying technology how much do you agree or disagree with the following:

Base: Total – 2,092

#### Table 61. Perceived gender superiority in **Engineering**

| Statements about gender superiority | Total | Male | Female |
| --- | --- | --- | --- |
| Boys and girls are as good as each other | 74% | 69% | 79% |
| Girls are better than boys | 2% | 2% | 2% |
| Boys are better than girls | 24% | 29% | 19% |

Question asked: In your opinion, when it comes to studying engineering how much do you agree or disagree with the following:

Base: Total – 2,092

#### Table 62. Career gender orientation

| List of professions | For either | More for boys | More for girls |
| --- | --- | --- | --- |
| Business owner | 85% | 9% | 3% |
| Lawyer | 85% | 8% | 4% |
| Scientist | 85% | 8% | 4% |
| Medical doctor | 84% | 8% | 5% |
| Accountant | 82% | 8% | 7% |
| Artist | 81% | 2% | 14% |
| Inventor | 81% | 13% | 2% |
| Pharmacist | 81% | 3% | 14% |
| Emergency services | 80% | 14% | 3% |
| Mathematician | 78% | 16% | 3% |
| Teacher | 75% | 2% | 20% |
| Engineer | 66% | 29% | 2% |
| Computer programmer | 66% | 29% | 2% |
| Community and personal service | 59% | 3% | 36% |
| Hair dresser/beautician | 47% | 2% | 49% |
| Technician or trade worker | 46% | 48% | 3% |
| Labourer | 42% | 53% | 3% |

Question asked: Below is a list of careers, thinking about what you know do you think these jobs are more for boys, more for girls or for both?

Base: Total – 2,092

#### Table 63. Career gender orientation by males

| List of professions | More for boys | More for girls |
| --- | --- | --- |
| Artist | 3% | 18% |
| Community and personal service (aged care, child care) | 4% | 38% |
| Computer programmer | 31% | 3% |
| Emergency services (police, fire or ambulance) | 17% | 4% |
| Engineer | 32% | 3% |
| Hair dresser/beautician | 3% | 52% |
| Inventor | 14% | 3% |
| Labourer (brickie, grounds maintenance, factory worker) | 57% | 4% |
| Mathematician | 18% | 5% |
| Pharmacist | 4% | 18% |
| Teacher | 3% | 24% |
| Technician or trade worker (mechanic, electrician, carpenter) | 51% | 5% |

Question asked: Below is a list of careers, thinking about what you know do you think these jobs are more for boys, more for girls or for both?

Base: Total – 2,092

#### Table 64. Career gender orientation by females

| List of professions | More for boys | More for girls |
| --- | --- | --- |
| Artist | 1% | 10% |
| Community and personal service (aged care, child care) | 1% | 35% |
| Computer programmer | 28% | 1% |
| Emergency services (police, fire or ambulance) | 12% | 1% |
| Engineer | 26% | 1% |
| Hair dresser/beautician | 0% | 46% |
| Inventor | 12% | 1% |
| Labourer (brickie, grounds maintenance, factory worker) | 50% | 1% |
| Mathematician | 13% | 2% |
| Pharmacist | 1% | 10% |
| Teacher | 1% | 17% |
| Technician or trade worker (mechanic, electrician, carpenter) | 47% | 2% |

Question asked: Below is a list of careers, thinking about what you know do you think these jobs are more for boys, more for girls or for both?

Base: Total – 2,092

#### Table 65. Extracurricular activity participation

|  | Extracurricular activities |
| --- | --- |
| Yes, I’ve been to a few | 26% |
| Yes, I’ve been to one | 19% |
| No, haven’t been to any | 55% |

Question asked: Have you attended any science activities outside of school/study in the past 12 months? This could be anything from a science fair, to a museum, an expo or any other event related to science ?

Base: Total – 2,092

#### Table 66. Awareness of STEM events

| Science events | Total | Male | Female |
| --- | --- | --- | --- |
| National Science Week | 40% | 33% | 46% |
| Questacon | 32% | 27% | 37% |
| Google Science Fair | 17% | 17% | 16% |
| National Youth Science Forum | 16% | 13% | 19% |
| Code Camp | 14% | 13% | 13% |
| Lego First Competition | 13% | 15% | 11% |
| STEM Student Mentoring | 11% | 9% | 12% |
| RoboCup Junior | 10% | 11% | 9% |
| Microsoft STEM | 10% | 12% | 8% |
| Careers with STEM – Magazine | 10% | 8% | 10% |
| Questacon Science Circus | 8% | 7% | 8% |
| Maker spaces | 7% | 9% | 5% |
| F1 in Schools | 7% | 9% | 5% |
| Questacon Smart Skills | 7% | 8% | 6% |
| Days of STEM | 7% | 7% | 6% |
| Governor’s School STEM Awards | 5% | 4% | 5% |
| Questacon Excited Particles | 4% | 4% | 4% |
| RMIT EnGenius (VIC respondents only) | 3% | 3% | 3% |
| 2018 Victorian Clinical Science Symposium | 3% | 4% | 2% |
| BH- Choose Maths | 1% | 2% | 1% |
| NXplorers (WA respondents only) | 0% | 0% | 0% |
| None of the above | 26% | 27% | 26% |

Question asked: And which of the below events or activities have you heard of?

Base: Total – 2,092, Males - 978, Females – 1,069

#### Table 67. Attendance of STEM events

| Science events | Total | Male | Female |
| --- | --- | --- | --- |
| None of the above | 52% | 40% | 65% |
| National Science Week | 17% | 18% | 16% |
| Questacon | 8% | 9% | 8% |
| STEM Student Mentoring | 4% | 5% | 3% |
| National Youth Science Forum | 4% | 5% | 2% |
| Days of STEM | 4% | 5% | 2% |
| Lego First Competition | 4% | 4% | 2% |
| Maker spaces | 3% | 5% | 1% |
| RoboCup Junior | 3% | 5% | 1% |
| Careers with STEM – Magazine | 3% | 3% | 3% |
| F1 in Schools | 3% | 4% | 1% |
| 2018 Victorian Clinical Science Symposium | 2% | 4% | 1% |
| Microsoft STEM | 2% | 4% | 1% |
| Google Science Fair | 2% | 3% | 1% |
| Questacon Science Circus | 2% | 2% | 2% |
| Code Camp | 2% | 2% | 2% |
| Questacon Smart Skills | 2% | 3% | 1% |
| RMIT EnGenius (VIC respondents only) | 2% | 2% | 1% |
| Questacon Excited Particles | 1% | 2% | 0% |
| Governor’s School STEM Awards | 1% | 1% | 0% |
| BH- Choose Maths | 1% | 1% | 1% |

Question asked: And which of the below events or activities attended in the last 12 months?

Base: Total – 696, Males - 325, Females – 348

#### Table 68. Interest change from STEM events

| Gender | I was much less interested than before | I was somewhat less interested than before | No change | I was somewhat more interested than before | I was much more interested than before |
| --- | --- | --- | --- | --- | --- |
| Total | 8% | 13% | 34% | 33% | 12% |
| Male | 10% | 13% | 28% | 32% | 16% |
| Female | 3% | 11% | 44% | 37% | 6% |

Question asked: And how did your interest in studying science, technology, engineering or mathematics subjects in the future change after attending these events?

Base: Total – 696, Males - 325, Females – 348