

*Inspiring the next generation to
solve some of the world's toughest
challenges with STEM.*

OUR CULTURAL HEART



Our Purpose at She Maps

Growing the diversity in how Science, Technology, Engineering, and Maths (STEM) is perceived and who does it.

When many people think of a scientist, they imagine someone (often male) in a lab coat working with a microscope or test tubes. Our vision of science is far broader. We believe that science is everything that we live and breathe in the environment. Unfortunately we know that the environment is facing some really big challenges now and into the future. The environment needs science to help out. And we need a diversity in science disciplines beyond the lab coat, and a diversity in ideas from people from all walks of life. Our purpose at She Maps is to bring diversity into how we perceive science, and who does it.



The Importance of Diversity in STEM

STEM is the foundation of innovation and a critical growth driver in any economy. Innovation does not come from working with like, but when we embrace diversity in experience, thoughts, and ideas, then innovation truly flourishes.

However, across many STEM disciplines and workplaces we are currently selling ourselves short. Women currently experience many barriers throughout their career pathways, ultimately resulting in a meager 27% representation of our STEM workforce in Australia. Without drawing from 100% of our talent pool we are consequently reducing our ability to drive innovation.

Economic analysis shows that in Australia, shifting just **1%** of the **workforce into STEM roles** would add **\$57 billion to GDP** over 20 years

By having a diversity in STEM, then there is diversity in the solutions to the problems our world is facing. By having a broad perspective of voices in the STEM workforce, it means that the solutions are more robust.

STEM education, particularly for girls, provides students with the tools for economic empowerment, tools that are more commonly held by men. This gives them the ability to contribute to a burgeoning workforce where the pay is good and the demand for skilled labour is high.

75% of the fastest growing occupations **require STEM skills**

The STEM workforce is **27% female**



Our Purpose and Mission was Born!

Where it began

Our Education Director, Dr Karen Joyce has always been in the minority in a male dominated discipline throughout her career. Within the geospatial and surveying workforce, only 25% of the sector are female. She is one of an estimated 1% of certified female drone pilots in Australia.

During her Science Week school visits in 2016, she noticed a drop off in participation of girls at her talks. At the local Primary School girls and boys of even numbers turned up, participated, and were enthusiastic about her talk on drones. At the local Secondary School, the girls just didn't show up.

After investigating the issue, Karen saw the research pointing to the importance of engaging with students, in particular girls early in their education, to increase their confidence in STEM.



PURPOSE

To grow the diversity in how Science, Technology, Engineering, and Maths (STEM) is perceived and who does it.

MISSION

To grow teacher capability and confidence in teaching STEM.

VISION

To inspire a generation to solve some of the world's toughest challenges with STEM.

IMPACT

We connect learning with real world problems.

Why Start Early

Traditionally, Universities and industry bodies have engaged with students in Years 10-12, hoping to entice them into their courses or profession. This is too late to solve the problem we are facing in the STEM funnel.

By targeting students at this late stage of schooling, students have already elected into or out of STEM subjects at school. Research shows that students as young as nine years old are assessing their ability to 'do' STEM.

We must start our engagement and role modelling in the early years of school if we are to increase the size of the STEM workforce in later years. Research shows that gender bias and stereotyping begins at an early age, and even by Year 4, girls are less confident in their maths ability despite no innate gender differences.

One part of the solution is to provide programs and strong female role models in the early years and throughout schooling to provide evidence to girls that they can achieve in a STEM career.



The Problem we are Solving

Much has been written about the STEM problem and advancing STEM education around the world. Many programs have resulted from these action plans, yet still we have major problems that need solving to achieve diversity in our STEM workforce.

Teachers play an important role in engaging students in meaningful authentic learning experiences, that enrich their deep content understanding in the STEM disciplines. Yet, many lack the skills, confidence and/or the capability to implement an integrated, cross curricular STEM approach in their classrooms. STEM is typically taught in silos, despite the demand for STEM skills in the workforce being far broader than just traditional science or maths subjects.

3% of total primary school teaching time in **Australia** is devoted to science instruction, compared to **9% in Western Europe**

Our industries are calling for the workforce to have more STEM skills to unlock the potential of our economy. But industry and universities struggle to connect in a meaningful and sustainable way into our school classrooms.

Our students – particularly girls – are turning away from science subjects and elective STEM opportunities at alarming rates. This decrease in their confidence to 'do' STEM is having a knock-on effect in a lack of diversity in University courses and industries where we need STEM skills.

We want to increase the connection between teachers, Universities, and industry. We want to provide confidence to our teachers, across the curriculum to integrate STEM into their pedagogy. We want students to see the diversity in how STEM skills can be used in industry, from a diverse range of role models we already have. We want to use real world problems and applications of digital technologies in classrooms, to truly engage students.

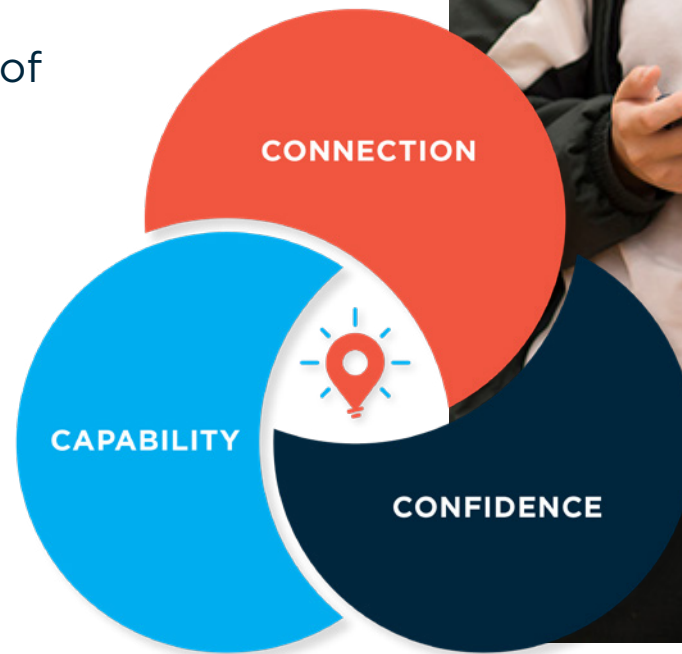
Early career teachers are more likely to be teaching **out-of-field**, in particular in **Maths and Science** subjects



Our Theory of Change

We believe that if we can increase the **confidence** of teachers to teach STEM, give them resources that will engage students, linked with **real world problems**, and show a **diversity of role models** solving those problems, this will create a more diverse student cohort, who is interested and **capable in STEM**.

By **increasing the diversity** of students interested in STEM and their capability, then we can have an **impact** on the number of students (particularly **female** and under-represented student cohorts) considering a **career in the STEM workforce**.



Supporting the UN SDG's

We align our work with four of the UN Sustainable Development Goals

4 QUALITY
EDUCATION



Quality Education

- We provide equal access to boys and girls for STEM education opportunities.
- We support teachers to increase their capability to teach STEM.

10 REDUCED
INEQUALITIES



Reduced Inequalities

- We provide support to program partners in developing and less developed countries and communities, to use our programs and resources.

5 GENDER
EQUALITY



Gender Equality

- We promote under-represented sectors of the STEM community as role models through our programs and resources.

17 PARTNERSHIPS
FOR THE GOALS



Partnerships for the Goals

- We partner with organisations that are aligned with our values and goals to scale our impact.

Our Values

This is who we are...



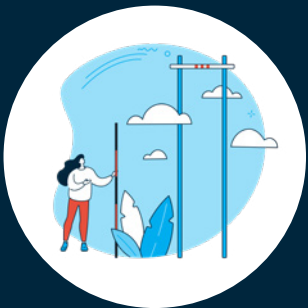
Future Thinking

We see a world where biases have been eliminated. A place where inherent and acquired diversity is embraced and is the foundation for creativity, innovation, and progress.



Making Impact

We aim to make an impact in everything we do. We want to shape the hearts and minds of the next generation, inspiring them to pursue a career in STEM.



Raise the Bar

We set ourselves a bar that is higher than most. Accountability through radical candor, empathy, listening and getting sh!t done!



Everything Matters

Our people, what we do, how we do it.... it all counts. We love what we do, we care for and nurture our people, our customers, and our environment.

Our Strategy

These are the strategic actions we focus on to achieve our purpose

Connection

We want to increase the connection between teachers, Universities, and industry.

- We will create a STEM learning to STEM practice program that connects schools, universities, and industry.
- We will run events that connect teachers with relevant STEM experts.

Confidence

We want to support teachers to be confident in integrating STEM tools across their curriculum, to build student confidence with STEM skills.

- We will provide professional development opportunities that upskill teachers in using drones and geospatial digital technologies.
- We will provide programs that give students experiences that highlight the diversity available in STEM.
- We will showcase a diverse range of STEM role models.

Capability

We want real world problems and applications of digital technologies to truly engage students in the classroom.

- We will link our programs to real world applications to show non-traditional STEM skill applications.
- We will build programs that use student gathered data to solve real world problems.

Our 2030 Obsession

To have engaged **100,000 students and teachers** through our programs and resources.

Our 2022 Goals



To deliver our programs and resources to **10,000 participants**



To teach **450 programs** face to face ourselves and with our partners



To have **2,000 teachers** actively invested in our resources



To have **15 active partner organisations** helping us achieve our goals



Why Us?

When learning is linked to practical applications, that you can see being used in the real world, then that learning becomes relevant.

When the people teaching you, the examples shown, or the scenarios provided, are led by people that represent the diversity of our community, then the learning becomes more personal.

When teachers are provided materials that can be used 'out of the box' with expert level support, then they become more confident.

When the organisation providing all this has a strong social conscious and is led by its purpose, then you become more connected.

This is why we want people to choose She Maps.



These distinctions enable us to scale our impact:



Our programs are designed by qualified educators, led by Dr Karen Joyce who has 20+ years' experience as a geospatial scientist and educator, and Paul Mead who has 20+ years leading and training teams, and teaching youth.

We understand teachers.



We link learning with the real world through the programs and resources we design.

Everything we do has a purpose.



We show a diversity of role models in our community who are using STEM.

We show it, so students can imagine being it.



We are a certified Social Enterprise, and only work with partners who are committed to supporting our Cultural Heart.

Our impact scales through partnership.

| Our Brand

Elevator Pitch

She Maps connects and collaborates with schools, academia, and industry to teach powerful, real world learning with modern STEM technologies.

Positioning Statement

She Maps is a certified social enterprise, deeply invested in eliminating bias and embracing diversity.

We build teacher and student capabilities and confidence with STEM, as well as engage, educate, and empower girls and women to stand up and be counted.

Value Proposition

We have a collective responsibility to help prepare the next generation to fulfil, equally and diversely, the increasing demand of STEM-related jobs.

Through education, teacher/student support and collaboration we increase STEM literacy and eliminate unconscious biases, so everyone is inspired to pursue a career in STEM.

What sets us apart are our school-industry partnerships that help us to drive change, and challenge our students to solve real world challenges with STEM critical thinking.

Features and Attributes

- We link real world STEM applications to education outcomes, mapped to the curriculum.
- We have certified instructors who educate, inspire, are relatable, and are role models for young girls to refer to.
- We use technologies that are emerging as essential for the workforce as the vehicles for learning.
- We have programs designed and tailored around our target audiences needs, individually and collectively.

Functional Benefits for Teachers

Organised for me, part of my school curriculum, easy to follow, helpful instructors, accessible technologies, introducing me to new concepts, supporting my development.

Emotional Benefits for Students

I had lots of fun, I'm excited to be doing STEM at school, I feel I achieved something today, I'm proud of myself for learning a new skill, I feel confident about doing new things.

Social Benefits for Students

My friends think I'm cool, I'm preparing myself for future work, STEM helps me define who I am to those around me.



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