ISSUE 01 / NOV '26

BENCHMARK

LESSON-READY. INDUSTRY-CONNECTED. MADE FOR TEACHERS.

Meet a Surveyor

PARTNER SPOTLIGHT:
Surveying Careers

What's New in the Field



LESSON SPOTLIGHT:
Land Survey & Areas

Spotlight on Surveying

What's on

Your Skills, A Geospatial Career

ISSUE 01

BENCHMARK

Field notes for teachers, from She Maps and The Surveyors' Trust — a termly dispatch on where curriculum meets the coordinate grid.

She Maps

The Surveyors' Trust
Collective investment in knowledge

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CONTENTS

02
LESSON SPOTLIGHT: LAND SURVEY & AREA CALCULATION

04
YOUR SKILLS, A GEOSPATIAL CAREER

05
A DIFFERENT WAY TO TALK ABOUT CAREERS: CADI CLUSTERS

06
MEET A SURVEYOR – FIELD NOTES FROM MEGAN

07
WHAT'S NEW IN THE FIELD – THE HANDHELD 3D SCANNER CHANGING HOW WE MEASURE THE BUILT WORLD

09
PARTNER SPOTLIGHT: CONNECTING THE CLASSROOM TO THE REAL & VIRTUAL WORLDS

13
EVERYTHING SURVEYING: A FRONT DOOR TO THE PROFESSION

15
NEW CERT IV IN SURVEYING SCHOOL-BASED TRAINEESHIP FOR 2027

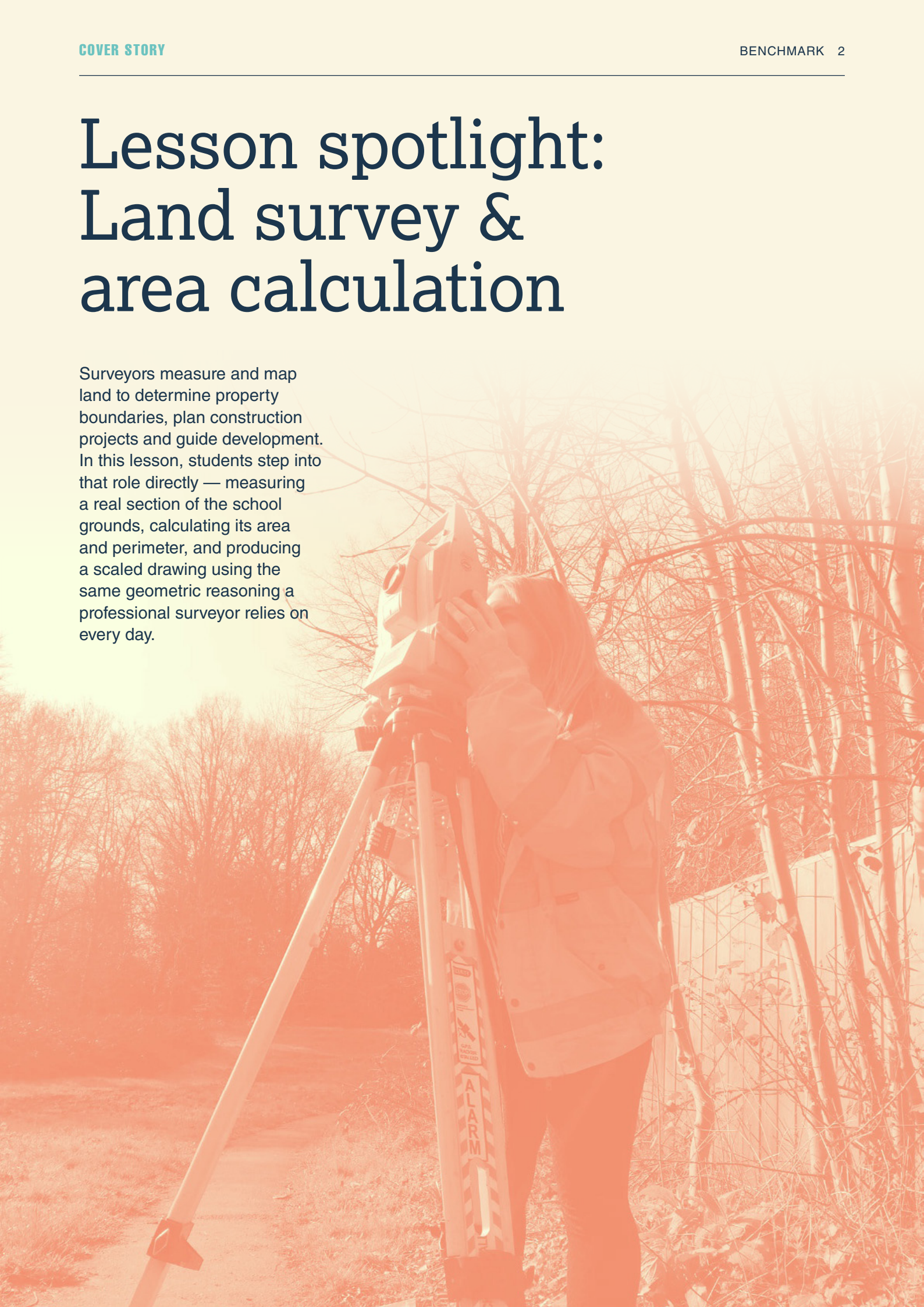
16
TRY THIS: FIND SURVEYING IN YOUR LOCAL AREA

16
PARTNERING FOR PURPOSE

17
GET INVOLVED

Lesson spotlight: Land survey & area calculation

Surveyors measure and map land to determine property boundaries, plan construction projects and guide development. In this lesson, students step into that role directly — measuring a real section of the school grounds, calculating its area and perimeter, and producing a scaled drawing using the same geometric reasoning a professional surveyor relies on every day.

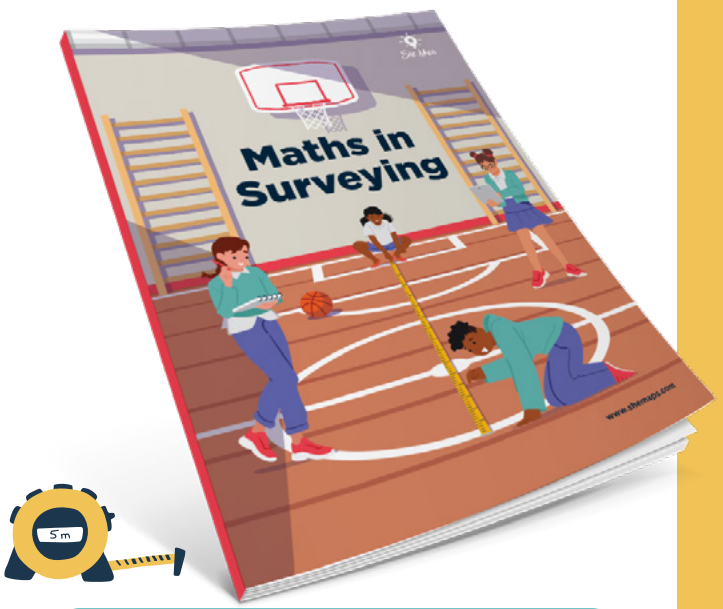


WHAT IS IN THE LESSON?

Working in groups of three to five, students take turns holding the tape, recording each measurement to the nearest centimetre, and breaking irregular shapes into smaller, measurable parts before calculating perimeter and total area as a class.

LEARNING OBJECTIVES

- Understand what a surveyor does and why surveying is important
- Apply geometry and measurement skills to real-world surveying tasks
- Measure, record, and calculate the area and perimeter of regular and irregular plots
- Create a scaled drawing of a surveyed area



A free five-lesson maths unit lets Years 7–10 measure, calculate, and map their own school grounds the way professional surveyors do — no drone required, no budget needed.

→ GET A FREE LESSON PACK

PLANNING A JOB – THE SURVEYING WAY

Every surveying job looks a little different, but most follow the same broad process — from understanding the brief through to handing over checked, reliable data. Here's a typical five-step version students can apply to the Land Survey & Area Calculation lesson:



01 Define the brief

Work out exactly what's needed and why — a boundary, a building setout, a monitoring check — before picking up any equipment.

02 Desktop study

Research existing survey marks, plans, and site records first, so the fieldwork builds on what's already known rather than starting blind.

03 Establish control

Set up or tie into fixed reference points, so every measurement taken afterwards lines up with everyone else's.

04 Capture the data

Measure in the field with the right tool for the job — tape, total station, GPS, drone, or scanner.

05 Process, check & deliver

Turn raw measurements into a plan, model or report — and check the numbers before anyone relies on them.

DEVELOPED BY SHE MAPS IN PARTNERSHIP WITH THE SURVEYORS' TRUST.

THE SURVEYORS' TRUST

Your skills, a geospatial career

From the traffic data behind your morning commute, to mapping a gold deposit, to monitoring the climate we depend on, geospatial specialists shape more of daily life than most people realise. Surveying — this issue's feature — is one way in, but it's far from the only one: She Maps' Geospatial Careers Guide profiles four more in-demand roles, each with its own downloadable career poster. What connects a Surveyor to a Climate Scientist or a Data Scientist isn't the job title — it's the skills and ways of working underneath it, which is exactly what the CADI Career Clusters framework, below, is built to show. Will your students be the ones to fill these roles?







Download the complete careers pack, or take the geospatial careers quiz, to help students see where these skills can lead.

→ DOWNLOAD THE COMPLETE PACK







A different way to talk about careers: CADI clusters

Job titles date quickly; skills don't. The CADI Career Clusters — Cluster Approach to Development of Identity — is a free framework from Study Work Grow that groups careers by the skills, strengths and ways of working they share, rather than by industry or job title. A five-minute, 30-question quiz gives students a starting point for the conversation, backed by a free resource pack, student workbook and slide decks built for Year 7 through senior secondary.

This quiz will help you work out which Geospatial Career Pathway could be right for you, and it will also tell you which CADI Career Cluster you are in.



INTRODUCING THE CADI CAREER CLUSTERS

Guardians
Protect our physical and mental wellbeing — health, safety and care.

Coordinators
Plan, prepare and administer the events, systems and economy that keep things running.

Innovators
Design, engineer and manufacture the things we use in daily life.

Linkers
Help us find, choose, secure and use products, services and support.

Informers
Teach, advise and guide us through legal, social and financial life.

Makers
Build and maintain the places we live and work — crops, homes, roads, power.

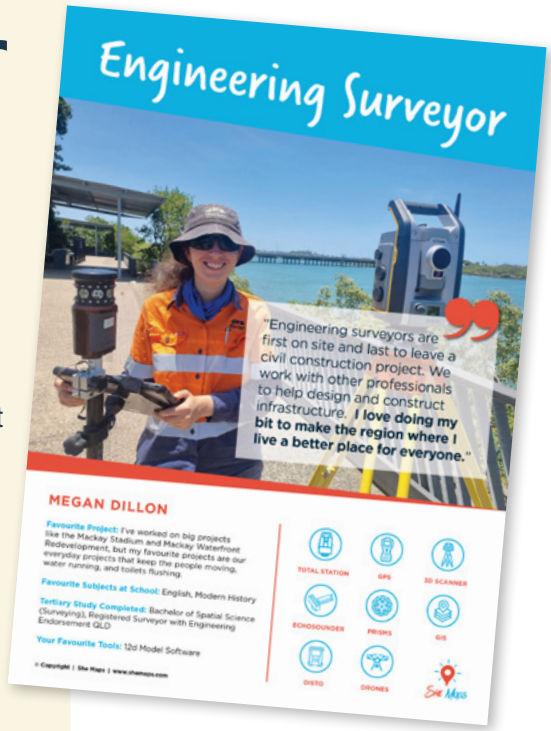
Try it as a discussion starter: ask students where each of the above might sit. A Surveyor could make the case for Makers — the profession quite literally lays the groundwork for the places we build — or for Innovators, given the technology behind the tape measure. A Climate Scientist might land with Guardians or Informers. There's rarely one right answer, and that's the point — most real careers, geospatial ones especially, span more than one cluster.

Take the quiz for yourself and share it with your students as a lesson starter or finisher.

→ TAKE THE CADI CLUSTERS QUIZ

studyworkgrow

Meet a surveyor



Field notes from Megan

HOW DID I BECOME AN ENGINEERING SURVEYOR?

My path ran through a Bachelor of Spatial Science (Surveying) and registration as a Surveyor with an Engineering Endorsement in Queensland — but my favourite subjects at school were English and Modern History, not maths or science. It's a good reminder for students that surveying rewards curiosity and precision as much as a love of numbers.

WHAT STEM SKILLS DO I USE EVERY DAY?

Every tool on my poster maps to a STEM skill I'm using on site:

Total station	→	Trigonometry
GPS	→	Coordinate geometry
3D scanner	→	Spatial data
Echosounder	→	Physics
GIS	→	Data analysis
Drones	→	Technology
12D model	→	Software & design

Download all the career posters

→ DOWNLOAD NOW



The handheld 3D scanner changing how we measure the built world



It's called the NavVis CLX, and it looks a bit like a futuristic camera crossed with a power drill. Instead of taking photos, it fires millions of tiny laser measurements at everything around it — walls, ceilings, pipes, stairs, machinery — and turns them into an incredibly accurate 3D digital copy of a real space, accurate to within millimetres.

The operator just walks through a building or site holding it — or wears it on a harness, or clips it to a pole to reach high spots — while a screen shows in real time what's been captured and what's still missing.



HOW IT WORKS, IN THREE STEPS

01 Walk the site

The operator carries, wears, or attaches it to a pole, while the scanner moves through the space, and a live screen shows exactly what's been covered and what's still missing — so a gap gets caught on the spot, not back at the office.

02 Capture millions of points

Laser sensors log the position of everything nearby as a "point cloud" — think of it as a 3D photograph made of dots, except every dot has an exact position in space, accurate to within millimetres.

03 Feed it into design software

The point cloud flows into software like Revit, so architects and engineers can design renovations or new work directly on top of real, trustworthy measurements — not an old plan or a guess.

WHERE IT'S CHANGING THE JOB

Surveyors, construction teams, and asset managers use it to record exactly what a building, mine site or construction project looks like right now — then use that digital record to draw accurate architectural plans, check how much material a job needs (quantity surveying), or assess a site's condition. For decades this was tape-measure-and-notebook work, or you needed a slow, expensive tripod-mounted scanner and a trained specialist; the CLX now handles the everyday version of that work that used to eat up a construction or surveying business's time.

WHY IT'S A BIG DEAL

Three reasons: it's fast and simple enough that far more workers can use it, not just highly trained surveyors, putting professional-grade measuring in more hands; it shows live feedback on screen, so the operator knows before leaving site whether everything's captured, instead of finding a gap back at the office and having to drive out again; and the 3D data flows straight into cloud software the whole project team can access, measure and design from — meaning fewer costly mistakes, less rework, and decisions based on exactly how a site really looks, not an old plan or a guess.



IN THE CLASSROOM

A five-minute discussion starter alongside the Land Survey & Area Calculation lesson:

- The CLX needs far less specialist training than the tripod scanners it replaces. Does that make this kind of career more accessible, mean fewer specialist jobs, or both?
- The operator sees what's been captured on screen before leaving site. Why does catching a gap immediately, instead of back at the office, matter so much on a real job?
- Physics, geometry, spatial thinking, and coding all show up inside one handheld device. Which of those would surprise most students is part of a "measuring" job?

Connecting the classroom to the real & virtual worlds



When your students ask, “How does classroom mathematics actually get used in the real world?” or “What career lets me work with cutting-edge tech both indoors and outdoors?” the answer is surveying.

Surveyors are the essential link between the physical and virtual worlds. They capture 3D reality to generate accurate digital models and take complex virtual engineering designs to set them accurately onto the earth. Without surveyors, we cannot build roads, tunnels, hospitals, or renewable energy grids, establish property boundaries, protect waterways, or even operate navigation apps and Google Earth.

Surveying Careers partners with She Maps and the University of Southern Queensland (UniSQ) to support teachers in connecting maths, geography, science, and digital technologies to rewarding, high-demand careers.



COULD YOUR STUDENT BE A FUTURE SURVEYOR?

You don't need to be a theoretical mathematician to thrive in surveying. When speaking to students about subject selection and career possibilities, look out for those who:

+ **Are not afraid of numbers:** Students who enjoy practical geometry, trigonometry, and spatial problem-solving.
+ **Love new technology:** Enthusiasts of robotics, drones, 3D modelling, laser scanning, and satellite systems.
+ **Enjoy variety:** Students who love sports or the great outdoors and dread the thought of being chained to a desk all day (most surveyors enjoy an even 50/50 balance between field exploration and high-tech office analysis).
+ **Are calm, independent, and inquisitive:** Problem-solvers with an eye for detail who enjoy piecing puzzles together.

WHY RECOMMEND SURVEYING?

+ **Unrivalled job security:** Backed by national BIS Oxford Economics research, Australia is facing a profound capability shortage of surveyors and spatial professionals. Over 90% of surveying graduates secure full-time employment within three months of graduating; often walking into multiple job offers.
+ **High earning potential:** Surveying consistently ranks among the top-earning professions in the country. Graduate surveyors typically start on $70,000–$80,000+ per year, with experienced registered surveyors and project leaders commanding packages between $150,000 and $200,000+.
+ **A modern, diverse profession:** The era of heavy, cumbersome surveying equipment is long gone. Today's instruments are sleek, digital, and autonomous. As modern spatial technology continues to evolve rapidly, more young women are stepping into the field and shaping national infrastructure.

BRING SURVEYING TO LIFE: "SURVEYING UNLEASHED"

We love visiting schools! Surveying Careers offers guest presentations for STEM classes, participates in school career expos, and coordinates student work experience placements with reputable local firms.

Our premier school incursion program is Surveying Unleashed – an interactive, hands-on workshop where students rotate through dynamic stations led directly by industry practitioners, university academics, and spatial experts:



01 The property detective (Cadastral surveying)

Students operate a robotic Total Station to track down historical survey pegs and solve real-world boundary disputes, discovering how trigonometry and the Torrens Title System safeguard property ownership.



02 Eyes in the sky (UAVs & drones)

Demonstrating commercial drones in action, students learn about aerial mapping, photogrammetry, and CASA aviation safety, accompanied by a live flight demonstration.



03 Building the digital twin (Point clouds & 3D scanning)

Using laser scanners that capture millions of data points every second, students "fly through" 1:1 photorealistic digital models used by architects and engineers to construct smart cities and iconic venues.



04 Add-on stations

Depending on the venue and site suitability, dedicated Mining Surveying and Hydrographic (Waterways) Surveying modules can be added!

Reach out to organise a local Unleashed program for your school cohort or find out about a Surveying Unleashed event close to you!

→ QLD@SURVEYORSAUS.ORG.AU



ACCESSIBLE PATHWAYS: GETTING A FOOT IN THE DOOR EARLY

A career in surveying offers multiple on-ramps to suit every learning style. We encourage students to get their foot in the door early through several flexible pathways:

Work experience placements

We help connect students with reputable local surveying firms so they can experience the industry firsthand, both in the field and in the office.

School-based traineeships (Grades 11–12)

Students can kick-start their career before graduating by undertaking the CPP41721 Certificate IV in Surveying and Spatial Information Services under a traineeship model.

Secondary school extension (UniSQ Head Start)

High-achieving Year 10–12 students can complete a university surveying subject online or on-campus while completing school. Subjects count towards their senior certificate (such as the QCE) and provide guaranteed credit into UniSQ surveying degrees.

Higher education & alternative entry

For those pursuing university, UniSQ (Australia's leading provider of surveying education) offers fully articulated associate and bachelor's degree programs, alongside the Tertiary Preparation Pathway (TPP) bridging program for students who have not met standard ATAR prerequisites.

FREE CLASSROOM-READY RESOURCES

Looking for ready-to-use materials to enrich your maths, geography, or science lessons? Explore our curated teaching resources:

- Classroom Posters: Get Kids Into Survey Educational Posters
- Real-World Scenario Projects: Get Kids Into Survey Homework Projects
- Interactive Spatial Quizzes: Spatial Knowledge Quizzes
- Comic Books & Career Stories: Surveying Adventure Comics
- Fieldwork Lesson Plans: Geoscience Australia Classroom Resources
- Student Career Guide: Download the Become a Surveyor Brochure
- University Pathways: UniSQ Head Start Info | UniSQ Surveying Programs

CONNECT WITH US

Whether you want to book a guest speaker, arrange student work experience, or explore career pathways, we are here to support your school community.



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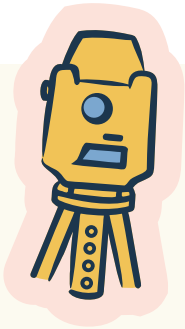
THE SURVEYORS' TRUST

Surveyors Australia

Everything Surveying: A front door to the profession

Surveying has a visibility problem. It's a profession with strong demand, good pay, and real-world impact, yet it rarely comes up when students, parents, or careers advisors talk about the future. Meanwhile, Australia needs more than 1,000 new surveyors every year to keep pace with infrastructure and land development.

Everything Surveying is an information hub built to close that gap. Rather than adding another course page or job board, it acts as a single national front door: one place where anyone curious about surveying can find out what the profession offers, how to get in, and who can help them along the way.



THREE GOALS, ONE HUB.

The site is working towards three connected aims.

01

Raise awareness

It makes the case for surveying in plain terms, showing how surveyors shape everything from new suburbs and transport corridors to coastal protection and renewable energy sites. Short facts scattered through the site are designed to spark curiosity, not overwhelm.

02

Map the pathways

A step-by-step getting started guide and pathways page lay out every route in, from school subjects and work experience to TAFE certificates, university degrees, cadetships and professional registration.

03

Connect people to the ecosystem

Most importantly, the site links users with the training providers, employers, mentors, and industry bodies that already exist across Australia, so nobody has to piece the landscape together alone.

BUILT FOR EVERYONE ON THE JOURNEY

Everything Surveying recognises that a career decision rarely involves just one person. A student is influenced by parents, teachers and careers advisors, and adults switching careers have different questions again. So the site splits its guidance by audience.

Everything Surveying is an information hub built to close that gap.

→ VISIT THE HUB



THE DIRECTORY AT ITS HEART

The centrepiece is a searchable directory that sits on nearly every page. Users answer three simple questions — who they are, which state or territory they live in, and what they're looking for — and the site returns the organisations that can help.

The "what I'm looking for" options show how broad that network is:

- ✓ Industry and professional associations
- ✓ School programs and work experience
- ✓ Scholarships
- ✓ Tertiary education
- ✓ Career support
- ✓ Neurodivergent career pathways
- ✓ Statutory authorities
- ✓ Veterans employment programs

WHY TEACHERS SHOULD BOOKMARK IT

You don't need to be surveying experts to point students in the right direction, and that's the point. Everything Surveying does the legwork of knowing who offers what, where.

+ **When a student shows interest**, send them to the students page and the directory filtered to your state.
+ **Before a careers conversation**, share the parents page so families can see the prospects for themselves.
+ **When planning work experience**, search for school programs to find local firms and organisations that take students.
+ **When linking lessons to careers**, use the site's short facts and real stories to show where maths, geography and technology lead.

WHAT THE SITE OFFERS

01 **Students**

Access course guides, university pathways, and career exploration tools tailored for students.

02 **Parents**

Find resources to support your child's education and career journey with confidence.

03 **Career advisors**

Access up-to-date labour market data tools, and resources to better guide your clients.

04 **Career changers**

Discover retraining options, transferable skills assessments, and new career pathways.

05 **Professionals**

Discover upskilling opportunities, industry insights, and tools to advance your professional career.

06 **International users**

Find information on qualifications recognition, visa pathways, and career opportunities in a new country.

New Cert IV in surveying school-based traineeship for 2027



A new Certificate IV in Surveying school-based traineeship pathway is open to students starting in 2027. Industry Training Alliance (the RTO) and Surveyors Australia are seeking expressions of interest from students and will match them with employers in rural and regional areas.

ELIGIBILITY

To access a subsidised training place, students must be enrolled in Year 10, 11, or 12 at a Queensland school and be signed into a school-based traineeship with a surveying employer. Students without an employer can ask ITA to help connect them with surveying employers in their area, though a placement can't be guaranteed. ITA is not CRICOS registered, so it can't enrol holders of some visa types.

WHAT YOU CAN DO

Please share this opportunity with interested students and families as soon as possible. Students who are interested should check that their senior subject choices meet the university prerequisites above.

EXPRESSIONS OF INTEREST AND ENQUIRIES

All expressions of interest and enquiries should go directly to the RTO:

Industry Training Alliance
(02) 9129 6771
info@ita-au.edu.au
www.ita-au.edu.au



KEY DETAILS

+ **Qualification**
CPP41721 Certificate IV in Surveying and Spatial Information Services (Surveying).

+ **Duration**
A two-year school-based traineeship starting 28 January 2027.

+ **Delivery**
theory is completed online (30 days of online training over the two years, through trainer-led tutorials and self-paced study). Practical training with the employer happens every Thursday.

+ **Paid placement**
100 paid placement days over the two years. This includes block placements negotiated between the employer, school, and student, using a mix of school release and school holidays.

+ **Pathway to university**
Completion gives an ATAR-equivalent Selection Rank of 74 and direct entry to the Bachelor of Surveying at the University of Southern Queensland. Prerequisites are Units 3 and 4 English and either General or Methods Mathematics.

+ **Employment outcomes**
The program has a strong focus on ongoing employment after completion, with options to keep studying while working.

Find surveying in your local area



Surveying is easy to miss until you know what you're looking for — then you start spotting it everywhere. Set this as a homework task or a five-minute chat before the bell: how many of these can students find on the way to school or around the neighbourhood?

- **A survey peg or mark**
  A small metal or plastic peg, or a disc set into a footpath or road, often stamped with a number — it marks a property boundary or a fixed reference point.
- **A surveyor on a building site**
  Usually in high-vis, working with a tripod-mounted total station while a second person holds a tall striped pole steady nearby.
- **Road or footpath works**
  Before kerbs are realigned or a new footpath goes in, surveyors check levels and alignment — look for the pegs and spray-painted marks left behind.
- **A drone over a construction site**
  Increasingly common for aerial surveys and tracking a project's progress from above.
- **A new housing estate or subdivision**
  Every new block of land starts with a boundary survey — the street layout and lot lines were all set out before a single house went up.

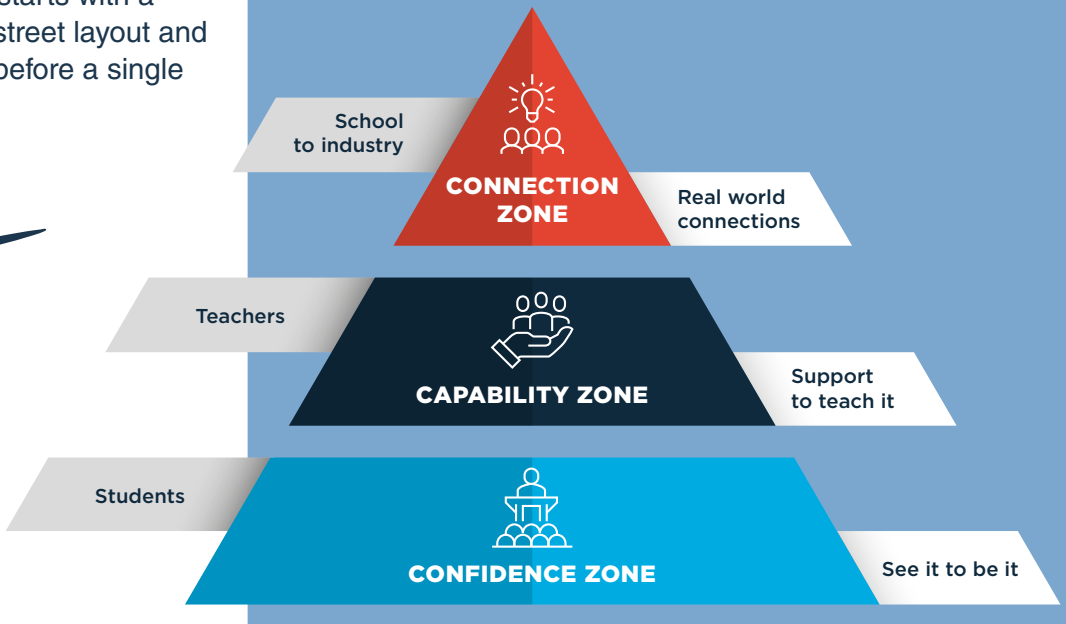


Partnering for purpose

BACKED BY OUR PARTNERSHIP MODEL

Maths in Surveying is a direct example of what She Maps calls an Industry Curriculum Partnership — collaborating with an industry partner to build an integrated teaching unit, and the way this series was built with The Surveyors' Trust. It sits inside our wider Partnering for Purpose model: the framework we use to connect schools, industry, and government, to help close the spatial professions skills shortage, whilst inspiring the next generation.

→ EXPLORE PARTNERING FOR PURPOSE



GET INVOLVED

HELP BUILD ISSUE 02

- → NOMINATE A SURVEYOR
- → DOWNLOAD THE LESSON PACK
- → PARTNER WITH SHE MAPS



We'd love to hear from you.

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