Impact Statement Canvas Inquiry for Indigenous Science Students

PARTICIPATION				
CSIRO, BHPB	*I2S2 Team, Technical Experts*	*I2S2 team, Dept Officials, Principals, Teachers*	*I2S2 coordinators, Teachers Students, Elders, Family, Community*	*Universities, Community Jurisdictions, Schools*

INPUTS
What we invest

$5.90m

30 year relationship between CSIRO and BHPB in science education

CSIRO experience in science inquiry education – especially CREST

Indigenous leadership

ACTIVITIES
What we do

Recruitment of schools to participate in program and building community relationships

Recruit and train team to develop and implement:
- hands on scientific inquiries with indigenous context linked to Australian curriculum
- teacher support resources – e.g. multimodal delivery and assessment, wiki space, scaffolding
- TPD package – science inquiry skills and Indigenous context

Development of program monitoring processes

OUTPUTS
Our deliverables

Development of agreements with schools and partnerships with community orgs.

Year 5-9 Indigenous contextualised inquiry and support resources developed

TPD package delivered to participating teachers

Delivery of inquiries

Ongoing TPD

Monitoring data

OUTCOMES
The uptake, adoption or consumption of our work

Increased student engagement, attendance and results

Increased student aspiration, sense of value and school belonging

Increased teacher capacity in both inquiry and Indigenous context

Increased community, parental engagement

Increased number of Indigenous (and non-Indigenous) students pursuing STEM pathways – Yr 10-12, university and alternatives)

Schools are culturally competent in delivering Indigenous contextualised inquiries in partnership with families & communities

Best practice in high expectation science inquiry education programs & TPD identified; jurisdictions adopt.

Schools supporting other STEM programs (e.g. ASSETS, Crest and Awards, PRIME Futures)

School culture of high expectation – also benefitting other subject areas

IMPACTS
Benefits to eco, environ, soc

Indigenous knowledge & culture valued: complementarity to western science demonstrated

Greater understanding and care of environment

social cohesion/ reconciliation

More, higher quality & greater workforce diversity of STEM professionals.

increased innovation and workplace productivity

Assumptions

Indigenous leadership is critical to program success including development of Indigenous inquiry.
Indigenous assistant teachers know the cultural context so are important partners. They may need capacity building in western science context.
Using multi-modal ways to demonstrate and improve success in science will encourage students to improve their literacy and encourage schools and teachers to raise their expectations.
To improve pathways to university we need to work through middle school and into year 10.
Both VET and university pathways should be supported, tailored to individual student skills and aspirations.
Inquiry pedagogy is consistent with Indigenous pedagogy

External factors

The Aboriginal and Torres Strait Islander cross curriculum priority is an important support for the program's focus on Indigenous context.
The level of non-Indigenous parental support for Indigenous content in schools is untested.
There is a lack of curriculum demonstrating Indigenous scientific inquiry skills.
Most teachers of Indigenous students are non-Indigenous so role modelling of high expectation STEM programs by non-Indigenous teachers is important.
Family support for education achievement varies.
There are systemic pressures that channel Indigenous students to VET.
Policy imperatives with literacy and numeracy can result in science pedagogy having lower priority