

Inquiry for Indigenous Science Students

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Overview

The Inquiry for Indigenous Science Students program (I²S²) provides teachers with the tools and understanding to embed Aboriginal and/or Torres Strait Islander perspectives into the Australian Curriculum: Science.

I²S² participants complete seven (7) online course modules with the accompanying learning activities. To demonstrate their understanding, participants reflect on their personal context and experience, in a safe and supported environment.

On completion of the online course, resources are provided to assist with classroom implementation of the I²S² inquiries.

I²S² aims:

- Increase Aboriginal and/or Torres Strait Islander student engagement and achievement in science while delivering inquiries through traditional context.
- Increase the participant's capacity to teach science inquiry skills through traditional context in partnership with families and communities.
- Introduce and increase understanding of cultural consideration while raising awareness of the importance of a school culture of high expectations.
- Increase Aboriginal and/or Torres Strait Islander student critical thinking skills through science inquiry and interest in Science, Technology, Engineering and Mathematics (STEM) and STEM pathways.

Through participation and completion of the program, participants will be equipped with the knowledge and practices required to implement the I²S² inquiries in their classrooms and teaching contexts. This will, in turn, make a significant contribution to the aims listed above.

Learning objectives

Upon completion of the program, participants will be able to:

- A. Utilise knowledge, understandings and resources from the program to increase the engagement and achievement of Aboriginal and/or Torres Strait Islander students in science.
- B. Appropriately and effectively link Aboriginal and/or Torres Strait Islander knowledges and histories to the Australian Curriculum: Science.
- C. Utilise science inquiry skills and apply them to the I²S² program.
- D. Demonstrate an understanding of the critical importance of schools in building strong positive relationships with parents/carers and community.

Participants will be encouraged to continue to develop all learning objectives beyond the confines of this course.

Structure of the I²S² program

Online course

The online course is comprised of seven (7) self-paced modules that take approximately five (5) hours in total to complete. Once the seven (7) modules and accompanying learning activities are completed, participants are given access to I²S² inquiry resources and materials that can be used in different teaching contexts. The seven (7) modules are:

1	<i>Introduction</i>	This module is an introductory view of the I ² S ² program.	20 minutes
2	<i>Cultural considerations</i>	This module will provide participants with foundational knowledge and understanding of key cultural considerations to help them recognise the diversity of Aboriginal and/or Torres Strait Islander cultures and identities. Participants will explore key topics and relate them to their own personal perspective and worldview, which is imperative when beginning to construct understanding of the traditional ecological knowledge required to effectively deliver the I ² S ² inquiries.	50 minutes
3	<i>Teaching science inquiry skills</i>	This module aims to increase participants' understanding of inquiry-based learning, focusing on the development and application of science inquiry skills throughout each of the I ² S ² inquiries. The intention of this module is to increase participant's capacity to effectively teach science inquiry skills that support the delivery of the Australian Curriculum: Science using the I ² S ² program.	45 minutes
4	<i>Embedding effective pedagogical practices</i>	This module will introduce participants to the pedagogical practices that underpin the I ² S ² program. Through examining these practices, participants will be able to recognise the I ² S ² program's contextualised design and its relationship to discourse. This module provides participants with techniques to create authentic learning experiences for all students.	45 minutes
5	<i>Teaching with traditional context</i>	This module will provide participants with the tools, knowledge, resources, and capacity to use traditional contexts when delivering the science inquiries. As a teacher, it is critical to understand the traditional context of the inquiry. Building contextual knowledge will further develop understanding of Aboriginal and/or Torres Strait Islander peoples' scientific understanding and enrich the delivery of the I ² S ² program.	45 minutes
6	<i>Strengthening school community partnerships</i>	In this module participants will explore how using the I ² S ² program can help to provide opportunities to connect and build strong and positive relationships with a wide cross-section of the community to support improved STEM outcomes for Aboriginal and/or Torres Strait Islander students.	70 minutes
7	<i>Teaching mathematics</i>	This module will equip participants with the appropriate knowledge and strategies to extend their understanding of applying Aboriginal and/or Torres Strait Islander contexts into mathematics lessons.	25 minutes

Commitment and expectations

Participants in this program are expected to:

- Engage with the literature and additional resources.
- Complete the activities within the seven (7) online course modules and the implementation project.
- Collaborate with colleagues in an inclusive and safe space, respectful of diversity and encouraging of the different stages each participant will be at in their learning journey.
- Adhere to the rules and guidelines and contribute to discussion forums in a positive manner.
- Devote five (5) hours to complete course requirements.
- Have access to a computer and a stable internet connection to complete the I²S² program.

CSIRO Education and Outreach team members will commit to being available and responsive to provide support to participants inquiries, Monday to Friday, between 8:30am - 5:00pm (ASDT). Contact us on I2S2@CSIRO.au.

Accreditation and certification

Participants will receive a certificate of completion that recognises up to five (5) hours of teacher professional learning. This can be generated from the participant's learning history in the Learning Management System (LMS).

Where to get support?

Participants can contact CSIRO Education and Outreach Education Advisors at I2S2@csiro.au.