

# Early Learning in Science, Technology, Engineering and Mathematics, Australia (ELSA) F–2

## Information Package – Principals

Dear Principal,

Your school has expressed interest in being involved in ELSA F–2 and has been selected as one of 240 schools across Australia that will be actively involved in the program.

The Early Learning STEM Australia F–2 Program (ELSA F–2 Program) is being run by the [STEM Education Research Centre \(SERC\)](#) at the University of Canberra (UC) with funding provided by the Australian Government Department of Education (DE).

The ELSA F–2 Program seeks to increase the participation of Australian children in STEM education and improve their digital literacy. It will provide an opportunity for young children to explore an online, play-based learning environment, delivered through a series of digital tools that are rich in STEM concepts. It will also include classroom activities to support the children’s learning. The program will be delivered to children in the F–2 years of schooling and will run during 2024.

The mission of the ELSA F–2 Program is science, technology, engineering and mathematics (STEM) for all children across the first three years of formal schooling. Our philosophy is that learning programs should be authentically accessible for all children, including those in vulnerable, geographically isolated, and non-traditional-learning communities—who have often been excluded from STEM education opportunities.

The intended outcomes of the Program include:

- developing and disseminating innovative, high-quality online Australian-Curriculum-aligned STEM resources and support materials for school educators
- providing a high-quality experience for users, incorporating contemporary pedagogies
- strengthening the STEM capabilities of Foundation to Year 2 teachers and supporting school leaders, students, and families
- ensuring widespread awareness and uptake of the resources and associated pedagogical approaches in schools across Australia
- ensuring the resources meet school communities’ needs by continuous monitoring
- strengthening students’ STEM skills
- supporting all young people to become more STEM-capable.

The ELSA F–2 Program builds on the successful ELSA preschool program and aims to enhance children’s STEM-literacy in ways that connect their play experiences to their ways of knowing, their teachers’, and their families’ out-of-school engagement. The work in developing and implementing resource materials, learning tools for

children, educators and families, and professional learning for educators, will be informed by the principles, practices and outcomes of the Australian Curriculum (in its state and territory interpretations) as well as the *Early Years Learning Framework for Australia (EYLF)*.

### Purpose of this note and form

The SERC team now seeks your consent for your school to be involved in the ELSA F–2 Program and research project.

### Program structure

Our program and randomised control trial is divided into four separate groups. Schools (and their teacher/s) will be randomly assigned to one of the following groups:

- Full ELSA Program
- Schools BAU
- ELSA Digital
- Non-RCT

### Teacher time investment

Teachers in our **Full ELSA Program** and **Non-RCT** groups may invest **up to** 2 hours per week to:

- undertake online professional learning (e.g., live webinars and pre-recorded videos, five hours total spread over the term)
- implement a 20-week program (up to 1-2 hours per week) using the ELSA F-2 digital tools and classroom activities for students
- respond to surveys before and after implementing the program (pre- and post-test, approximately 15 min to complete)
- send us four personal reflections during the course of the program (approximately 15 min to complete)
- engage students in pre- and post-testing (30 mins)

The total time investment from teachers in these cohorts over the 20-week program will be approximately 40 hours.

Teachers in our **ELSA Digital** group may invest **up to** 1 hour per week to:

- engage students in the ELSA: STEM in Schools digital apps (30 mins at a time)
- engage students in pre- and post tests (30 mins)

The total time investment from teachers in this cohort over the 20-week program will be approximately 20 hours.

Teachers in our **Schools BAU** group will only invest time at the beginning of Term 2 and the end of Term 3 engaging students in pre- and post-tests.

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The total time investment from teachers in this cohort over the 20-week program will be approximately 5-10 hours.

### **Student time investment**

Our program and randomised control trial is divided into four separate groups:

- **Full ELSA Program** – this group will receive the full ELSA: STEM in Schools program. This includes classroom activities, digital challenges, activity plans, and professional learning for teachers.
- **Schools BAU** – this group is the control group and will not receive any of the ELSA: STEM in School program resources. Instead, they will go about their regular classroom activities. As a thank you, they will, however, receive access to the ELSA program in Term 4 as well as 2025 to engage with as they wish.
- **ELSA Digital** – this group will receive access to the ELSA: STEM in Schools digital challenges only.
- **Non-RCT** – this group is a subset of the Full ELSA Program. They will receive the same resources and run the program in the same way; however, their data will not be included in our RCT study.

Students in our Full ELSA and Non-RCT groups may undertake up to 2 hours per week engaging in our 20-week program, implemented by their class teacher. The total time investment from students in these groups over the 20-week program will be approximately 30 hours, including their time spent engaging with the learning program and completing pre- and post-test (30 minutes each).

Students in our ELSA Digital group may undertake to take up to 30 minutes per week engaging in our 20-week program, implemented by their class teacher. The total time investment from students in this group over the 20-week program will be approximately 11 hours. This includes time spent engaging with our digital apps, as well as completing the pre- and post-test (30 minutes each).

Students in our School BAU group will not undertake our program. Instead, they will undertake their normal classroom learning activities. The total time investment from these students over the 20 weeks will be approximately 1 hour. This time will be spent completing the pre- and post-tests.

### **Data collection and ethics**

As part of the ELSA F-2 program, de-identified data will be collected for evaluation purposes (e.g., how we can improve aspects of the ELSA F-2 program) from all four groups in the program. This will include the collection of de-identified professional learning (PL) completion data for each individual teacher. Any information you share with SERC will be de-identified so that it will be impossible for anyone to identify you or your school.

The SERC research team (who have developed the ELSA F-2 program) are also interested in analysing this de-identified data for research purposes (e.g. publishing an article in an academic journal or conference presentations). To conduct research, ethical approval is required from our institution, the University of Canberra, as well as respective jurisdictions. Ethical approval has been obtained from the University of Canberra to conduct research (see note below) and this research project has met the policy requirements of the Department of Education (please see attached letter).

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Please note, any evaluations or future academic publications that draw on ELSA F–2 data will not use any information that could identify a person, school, or state/territory.

### Sign attached form

If you are happy for your school to be involved in the ELSA F–2 Program in the ways outlined, could you **please sign the attached form** and return it to Emma Simpson (ELSA Administration Officer) via email [emma.simpson@canberra.edu.au](mailto:emma.simpson@canberra.edu.au).

I do hope that you will join in the ELSA F–2 Program. Please do not hesitate to contact me if there are any questions about the ELSA F–2 Program or research project.

Professor Tom Lowrie

**NOTE:** This project has ethical clearance from University of Canberra (12127). Any queries about the project should be directed to Emma Simpson at [emma.simpson@canberra.edu.au](mailto:emma.simpson@canberra.edu.au) or telephone 1800 512 225.

If you have any concerns about the ethical conduct of the project you may also contact the Secretary, University of Canberra Human Research Ethics Committee, telephone 02 6201 5220 or email [humanethicscommittee@canberra.edu.au](mailto:humanethicscommittee@canberra.edu.au).

Any issues you raise will be treated in confidence and investigated fully and you will be informed of the outcome.

## Consent form: Principals

Please read this form carefully and fill out the sections below.

### Privacy: How the ELSA F–2 Program will collect, store and use data

- Your personal information is protected by law, including the *Privacy Act 1988*, and is collected by the University of Canberra for the purpose of running the ELSA F–2 Program.
- The University of Canberra will collect and use the personal information of principals for the specific use of running the ELSA F–2 Program only. The personal information collected will include your name, signature and place of employment.
- All data collected as part of the program will be:
  - stored on secure servers in Australia, except for data collected by the Gorilla platform (student pre- and post-test) and Google Forms (teacher surveys). All data will be de-identified prior to being sent to Gorilla, and will be de-identified when retrieved from Google Forms; and
  - de-identified (removing names) before being used in reports (or future academic papers).
- De-identified data may be used and disclosed by the University of Canberra to the Department of Education (DE), an external evaluator of the ELSA F–2 Program, and the ELSA F–2 digital developers – including Mode Games and Anomaly Software – for the purpose of delivering and evaluating the ELSA F–2 Program only.
- The University of Canberra may also examine/use this de-identified data in the future for research purposes/aims as described in these letters..
- No names or other identifying material collected as part of the ELSA F–2 Program will be used in publications or for publicity without further consent from you.
- You can get more information about the way in which the University of Canberra will manage data, including requesting a copy of our privacy policy, by emailing [elsa.schools@canberra.edu.au](mailto:elsa.schools@canberra.edu.au)

### Consent – Participation

- I have read and understand the information about the ELSA F–2 Program which is contained in the accompanying Information Statement.
- I have been able to clarify any questions I had about the program and my participation in it.
- I understand that I am free to withdraw my school from the research at any time, and that if I do, I will not be subjected to any penalty or discriminatory treatment.
- I understand that any information or personal details gathered in the course of this program about my school are confidential and that neither names or any other identifying information will be used or published without my further consent.

#### *Principal's Consent for Participation*

I, \_\_\_\_\_ (Principal's name) agree for my school to be involved in the activities outlined in the Information Statement provided.

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UNIVERSITY OF  
**CANBERRA**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

School name: \_\_\_\_\_

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