ELSA STEM in Schools

All teachers involved in the ELSA STEM in Schools program will be required to access digital PL resources and attend a series of webinars for PL.

The program is designed with weekly learning intentions and a series of three learning activities delivered across the course of a week with both classroom- and digital-based learning (the ERA pedagogical model outlined on the website https://elsaschools.edu.au/frameworks/). The first activity (this will vary in length depending upon the respective needs to the children in the class) is delivered by the teacher, usually via a hands-on, problem-based activity. Then the remaining two activities are delivered via the digital learning tool for the students and via another hands-on activity in the classroom. The estimated time for implementation of the program is approximately 1- 1.5 hours a week.

We have tried to restrict the classroom-based activities to use resources that are generally available in schools or that can be cheaply purchased.

Outlined below are the learning intentions for the respective Year-level programs. Note there are only four learning intentions for a five-week period as we know schools are extremely busy places and we have left Week 5 to be catch up or consolidation of learning.

Learning Intentions for each year level

Foundation/Kindergarten

Term 2 Weeks 1-5

The children are learning to:

- Order and sort on spatial attributes
- Order and sort on numerical attributes
- Order and sort on a combination of attributes
- Use spatial language in their descriptions

Term 2 Weeks 6-10

The children are learning to:

- Use spatial language
- Recall the location of landmarks and objects
- Follow directions using spatial language and landmarks
- Give directions from different locations (relative locations)

Term 3 Weeks 1-5

The children are learning to:

- Use different perspectives to understand visual representations (e.g., bird's eye [top down] view, person [front / side] view

- Zoom in and out onto on object
- Label objects according to different categories
- Disregard irrelevant information

Term 3 Weeks 6-10

The children are learning to:

- Identify a range of spatial patterns
- Identify a range of numerical patterns based on their spatial structure, including copy, extend, fix, and create patterns
- Recognise collections of items up to 10 using common spatial arrays
- Decompose numbers into sub-parts

Year 1

Term 2 Weeks 1-5

The children are learning to:

- Sort and organise data based on visual attributes
- Decode symbolic data to interpret meaning
- Decode and classify symbolic data in context
- Design and create appropriate visual information for contexts

Term 2 Weeks 6 10

The children are learning to:

- Identify features and landmarks on a map
- Use direct comparison to measure distances
- Estimate and predict distance measurements
- Use uniform informal units to measure distance

Term 3 Weeks 1-5

The children are learning to:

- Sequence visual information
- Follow directions along a route
- Make a single decision within a sequence
- Make multiple decisions with a sequence

Term 3 Weeks 6-10

The children are learning to:

- Sort information based on written and verbal description
- Interpret small- and large-scale scenarios
- Predict outcomes
- Build simple machines with and without scaffolding

Year 2

Term 2 Weeks 1-5

The children are learning to:

- Debug instructions to achieve a correct outcome
- Follow instructions that include conditional language
- Follow instructions that include loops
- Encode information in one form and represent it in another form

Term 2 Weeks 6 10

The children are learning to:

- Complete simple and complex linear movements
- Complete simple and complex rotations (including around an external point)
- Combine linear movements and rotations in a movement sequence
- Complete linear movements and rotations that include numbers

Term 3 Weeks 1-5

The children are learning to:

- Complete activities using elements on the x-axis
- Complete activities using elements on the y-axis
- Complete activities using elements on both x- and y-axes
- Describe and create additive patterns using constant amounts
- Build simple pitch instruments

Term 3 Weeks 6-10

The children are learning to:

- Represent the same fraction using different representations
- Recognise simple fraction families using whole, halves, fourths, and eights
- Represent fractions larger than one
- Build simple percussion instruments