

## Professional Learning Template

What follows is a suggested running sheet for two intensive professional learning sessions of approximately 60 to 90 minutes each, depending on the number of teachers in attendance and the depth/length of discussions during activities.

If you would like one or both sessions to be facilitated, in person if within one hour of Perth WA or via Microsoft Teams if further away, please contact Sarah via [www.math-links.com/contact/](http://www.math-links.com/contact/)

If you are planning to facilitate the session(s) yourself, for a group of teachers at your school, it is recommended for the facilitator to look through all videos and questions for reflective practice in advance, so that you can download the handouts (Summary of Design Principles; Summary of ERA Mathematics) and consider how to adapt the suggested routine to best suit your context.

### Recommended preparation

In advance of the first session, it is suggested that teachers review related theory regarding how children learn mathematics by watching the following videos:

How children learning mathematics: Part A (7 min. 34 sec.)

How children learning mathematics: Part B (5 min. 38 sec.)

### Session 1

*Give out the handout: Summary of Design Principles*

#### **Activity 1: Workshop Video** (7 min.)

Watch 'Teaching mathematics'

#### **Activity 2: Think-Pair-Share** (10 min.)

Think - teachers complete 'Questions for reflective practice – Principles for extending mathematics learning', save their responses to PDF, for their own records, and send to print for use in the activities to follow.

*Responses are anonymous; session facilitator uses a guillotine to separate and collate printed responses while teachers engage in the 'pair-share' portion of the activity.*

#### **Activity 3: Whole Group Discussion** (10 min. or more)

Look only at printed responses to:

"To what extent do you agree that the following principles are important for extending mathematics learning beyond the surface level?" and

“Are there any design principles for extending mathematics beyond the surface level that you believe are pivotal, that are not reflected in the principles listed above? If yes, please describe”

Discussion topics:

- As a team, where do our beliefs align?
- Can we respectfully debate interpretations, pros and cons of the principles where our beliefs appear to diverge?
- *If whole school approaches are valued in your setting, can you create a set of core principles you all agree on? Individual teachers can then add to the core list as they wish.*

**Activity 4: Gallery Walk** (10 min. or more)

Display responses to the following items on tables or boards around the room:

“For the principle(s) that align with your existing practices, brainstorm/describe the strategies you already use to implement the principle(s)” and

“When you consider the goal of aligning your planning and teaching practices with these principles, describe anything you think will help you in reaching your goal”

Use this process to co-develop an initial draft of strategies to implement the principles.

*Note: collated responses for “Describe anything you think may hinder you in reaching your goal” need to be kept in an envelope and used for an activity during the next session.*

**Activity 5: Workshop Video** (4 min. 25 sec)

Watch ‘Teaching mathematics across the curriculum’

**Activity 6: Questions for Reflective Practice** (5 min.)

Teachers complete ‘Questions for reflective practice – Mathematics across the curriculum and integrating STEM practice’ and save their responses to PDF for their records.

**Activity 7: Workshop Video** (6 min.)

Watch ‘An Experience-Represent-Apply (ERA) Mathematics framework’

**Activity 8, or homework task to be completed before the next session** (10 min. or more)

Teachers choose a mathematics topic to trial the ERA Mathematics approach and identify potential cross-curricular links (using existing knowledge and experience of the curriculum and/or suggested related links on the website resource that has been developed for this professional learning experience).

## Session 2

Give out the handout: *Summary of ERA Mathematics*

### **Activity 1: Sharing** (10 min.)

Teachers share their cross-curricular planning ideas (from Session 1 – Activity 8/Homework)

### **Activity 2: Sorting** (10 min.)

Take out saved responses to “Describe anything you think may hinder you in reaching your goal” (see Session 1, Activity 4, Note).

With consideration to strategies for implementing principles that have been discussed since writing these, can we now sort them into categories via group discussion; suggested categories –

- Solution found - Our initial draft of strategies to implement the principles, or ERA Mathematics, addresses this concern
- Solution found – Through brainstorming together, we have been able to establish a solution to overcome this concern
- This continues to be a concern to be mindful of, to try and work around

### **Activity 3: Think-Pair-Share** (10 min. or more)

Think - teachers complete ‘Questions for reflective practice – ERA Mathematics concept development’, save their responses to PDF for their records, and send to print for use in the activities to follow.

*Responses are anonymous; session facilitator uses a guillotine to separate and collate printed responses, including tallying of results Yes/No for ‘Can you envision being able to adapt (or have you already adapted) the ERA Mathematics approach to your education setting?’, while teachers engage in the ‘pair-share’ portion of the activity and/or continue to share cross-curricular planning ideas, according to their preference and time available.*

### **Activity 4: Whole Group Discussion** (10 min. or more)

Share responses to ‘When you consider the goal of adapting ERA Mathematics, as a strategy to implement principles for extending mathematics learning beyond the surface level, describe what will help you in reaching your goal’, and then the results of the tally Yes/No for ‘Can you envision being able to adapt (or have you already adapted) the ERA Mathematics approach to your education setting?’. Discuss reasons.

### **Activity 5: Gallery Walk** (15 min. or more)

Display responses to the following items on tables or boards around the room:

“What do you like MOST about the concept of ERA Mathematics as a strategy to enable more deep learning opportunities in mathematics?”

“What do you like LEAST about the concept of ERA Mathematics as a strategy to enable more deep learning opportunities in mathematics?”

“Are there alternative ways (other than ERA Mathematics) to extend student learning that you think would be more practical, sustainable, and effective in your context? If yes, describe the alternatives”

Use this process to co-develop a strategy to extend mathematics learning beyond the surface level (this may involve editing ERA Mathematics or generating a new framework), as a whole group or in smaller groups of approx. 4 teachers, depending on group numbers and preferences.

***Activity 6: Reflect on the professional learning experience and consider next steps*** (10 min.)

Teachers complete ‘Evaluating the professional learning experience’ then collect their certificate of participation.