

Clarinda Primary School Instructional Model for Teaching and Learning Mathematics



At Clarinda Primary School we teach Mathematics in a way that aims to develop our students' learning so that they have the language of maths to be able to explain their thinking, can make links between mathematical concepts, and solve challenging problems. Our students have the skills, persistence and the confidence to work through new and challenging problems.

The Instructional Model is based on a teaching sequence of 3 - 5 weeks for an identified 'Big idea' or 'essential learning' from the Victorian Curriculum, based on the Nadia Walker model.

The Clarinda Primary School Instructional Model for Maths is a whole school framework that describes the teaching of critical areas of the curriculum which require more in-depth attention. It is a 3 – 5 week instructional cycle. The success of this model is the collaboration of the PLC team to discuss, plan and implement an all-inclusive maths program to cater for the learning needs of all students.

The Instructional Model for Maths incorporates 4 main phases (tiers):

- Tier 1: High quality differentiated instruction catering for all students' needs in **'home class' teaching** sessions.
- Tier 2: Targeted **Booster groups** are designed for students to work for 5 successive sessions in 'like ability' groups as intensive teaching to 'boost' all students forward in their learning. These sessions are based on achievement data and should provide stretch for all students.
- Tier 3: Short burst **Intervention** sessions as the last level of intervention for students who have not reached the expected achievement standards for that critical concept.
- Tier 4: **Follow up** on challenging concepts for students through individualised maths learning goals, 1-on-1 teacher conferences and focus group teaching for similar needs in "Second Work Time" built in to the Maths Workshop Model

Tier 1	STEP 1 Teachers plan collaboratively for and teach their own 'home class'. Start with 1 - 3 introductory (front loading) lessons Purpose is to front load mathematical language, new concepts & refresh prerequisite knowledge. Introduce new ideas through 'I can' statements in Learning Intentions	STEP 2 Pre-Assessment (after introductory lessons) Ensure assessment includes some fluency, computation with a focus on efficient strategies, reasoning and problem solving. Score tests with common scale & spreadsheet. Collate achievement data onto Gutman chart	STEP 3 Within 'home class' groups (1 week approx.) Focus on high quality differentiated instruction catering for all students' needs Include opportunities for small group learning, targeted focus groups, challenging tasks, problem solving and open-ended tasks Lessons should follow the Maths Workshop Model structure and include 1-on-1 conferences Include anecdotal notes, check ins and exit tickets as ongoing formative assessment	STEP 4 Year Level PLC teams moderate all assessment data to allocate Booster Groups. Data should include pre-assessment results and anecdotal notes from 'home class' teaching. Assign teachers to booster groups. PLC teams to discuss what each group will focus on to ensure targeted teaching.
Tier 2	STEP 5 Booster Groups (targeted teaching) 5 consecutive sessions with the purpose of intensive teaching in 'like ability' groupings for a short period of time to boost all students' learning in their ZPD		STEP 6 Post-Assessment Common task for all students (the same as pre-test) Score with common scale & spreadsheet and collate achievement data onto Gutman chart	
Tier 3	STEP 7 Within 'home class' identify students from the post-test who have not met the expected level. Approximately 3 extra lessons before the end of the unit All other students will be involved in Problem Solving and Rich Tasks in flexible multi-ability groups during this time			
Tier 4	STEP 8 Teachers follow-up on individual students' needs through individualised maths learning goals set in 1-on-1 teacher conferences and focus group teaching for similar needs. This follow-up occurs in "second work time" built in to the Maths Workshop Model			

Example sequence of lessons (based on a 4 week unit)

Day 1 "Let's get excited about ...!" Tuning in and front loading	Day 2 More tuning in and front loading.	Day 3 ... If you need more tuning in and front loading.	Day 4 Pre-assessment (Ideally this would happen shortly before your next PLC meeting)	Day 5 Rich Task Use this as formative assessment information to add to anecdotal data
Day 6 Home class teaching including small focus groups to differentiate the learning based on pre-test data and anecdotal notes	Day 7 Home class teaching including small focus groups to differentiate the learning based on pre-test data and anecdotal notes	Day 8 Home class teaching including small focus groups to differentiate the learning based on pre-test data and anecdotal notes	Day 9 Home class teaching including small focus groups to differentiate the learning based on pre-test data and anecdotal notes	Day 10 Home class teaching including small focus groups to differentiate the learning based on pre-test data and anecdotal notes
Day 11 Booster Groups Students working in mixed class groups in their Zone of Proximal Development	Day 12 Booster Groups Students working in mixed class groups in their Zone of Proximal Development	Day 13 Booster Groups Students working in mixed class groups in their Zone of Proximal Development	Day 14 Booster Groups Students working in mixed class groups in their Zone of Proximal Development	Day 15 Booster Groups Students working in mixed class groups in their Zone of Proximal Development
Day 16 Post assessment	Day 17 Home class teaching including small focus groups for intervention (based on Booster group data and post-test results) Majority of class working on Problem Solving/ Rich tasks	Day 18 Home class teaching including small focus groups for intervention (based on Booster group data and post-test results) Majority of class working on Problem Solving/ Rich tasks	Day 19 Home class teaching including small focus groups for intervention (based on Booster group data and post-test results) Majority of class working on Problem Solving/ Rich tasks	Day 20 Retest intervention group of students and Celebration of unit, options: Maths celebration, Maths game (connected to unit), Maths performance, Maths in Art, Maths Portfolio piece

Each lesson throughout the unit is a 1 hour session in the format of the Maths Workshop model. This looks like:

Introduction (1-2 minutes)

Students read the Learning Intention (written as an 'I can...' statement) and the Success Criteria (written as an 'I have...' statement) to understand the expectations for the lesson.

Warm-up Game (5-10 minutes)

Tied to the mini lesson focus. All students to be involved. Can be a whole class, small group, paired or individual game.

Mini lesson (10-15 minutes)

Teacher giving explicit instruction on the mathematical concepts of the lesson using the 'I do' and 'We do' components of the Gradual Release of Responsibility.

Independent work time (15 minutes)

Students work independently on the mathematical concepts of the lesson using the 'You do' component of the Gradual Release of Responsibility. During this time the teacher is working with focus groups either supporting students who need additional help or extending students who need it so that they can then work independently.

Catch (1-5 minutes)

This is an optional part of the lesson. Sometimes planned, sometimes spontaneous. Options include: Quickly grabbing students attention, Reminding them of LI and SC, A second mini lesson, Focusing in on something new, Recapping first mini lesson and checking in with progress, Remind students of Second Work Time tasks

Second work time (15 minutes)

During this time students are working independently on a variety of tasks based on individual needs and learning goals. Teachers are working in 1-on-1 student conferences (see [handbook](#) for more information about conferences at Clarinda PS) and / or in focus groups with students. Students have a choice of task (students need to be responsible enough to earn the right to choice, otherwise teacher guided)

Choice options include: Continue with Independent work time task, Working on their personal maths goal, Working on online maths tasks such as Essential Assessment, Working on maths fluency skills, Researching maths vocabulary.

Debrief (5-10 minutes)

Teacher facilitates discussion and sharing linked back to LI and SC. Teacher asks deep questions to facilitate higher order thinking and promote mathematical reasoning.