

## TEACHER INFORMATION

### myEMMdata Student Workbook

The provision of an Elementary Math Mastery (EMM) student workbook bestows distinct advantages from both educational and practicality viewpoints. Delivering a particularly strong educational component, the workbook slots in perfectly with the Australian Curriculum Sub-strand, Data Representation and Interpretation. Each day students record, summarise and represent their own personal data thereby enhancing their engagement with the learning process in the most positive way. Student employment of various forms of data representation enables them to map their performance, while also serving as a subtle, yet powerful, learning adjunct. The entire workbook flows with the EMM program so as to maximise time-efficiency.

From a teacher viewpoint the workbook is an invaluable diagnostic tool and assessment record.

If you are new to the EMM program, before proceeding you will need to read Elementary Math Mastery (2011 Rhonda Farkota McGraw-Hill) pages iii–viii.

### Workbook components

**Daily Data:** Daily, students record and summarise their own data. For incorrect responses, classified as Bugs, students shade the BugKey in the corresponding row on the BugBoard. This allows teachers to continually monitor progress and determine whether remediation is needed.

**For example, see myEMMdata pages 2–9.**

**Visual representation:** This provides foundational knowledge and daily practice in reading and interpreting data to prepare students for the Round task.

**For example, see myEMMdata pages 2–9.**

**Round task:** EMM is structured into 32 rounds each consisting of 5 lessons. At the end of each round students read, interpret and complete tables and graphs building on the Visual representation foundational knowledge.

**For example, see myEMMdata pages 10–11.**

**Self-evaluation:** After every 4 rounds (20 lessons) students self-evaluate and reflect on their growth in knowledge, understanding and achievement. They record their feelings, providing teachers with insight into their thoughts and opportunity to comment. (Thanks to Kevin Duffy, Principal WA, for his valuable input into the Self-evaluation.)

**For example, see myEMMdata pages 12–13.**

**EMMathon:** For implementation details see pages 144–147. EMMathons are restructured lessons that enable students to demonstrate their BugFree status. EMMathons affirm fluency, further enhance self-efficacy, and assess how well students have consolidated their knowledge and understanding.

**For example, see myEMMdata pages 14–15.**

**EMMathon to BugFree:** Students convert their scores to percentages to determine their BugFree status. This encourages students to concentrate on personal growth rather than comparison with other students. Conversions should be performed either after each EMMathon, or after each Marathon.

**See myEMMdata pages 58–61; 118–121.**

**Challenge:** This is designed to stimulate the thinking process requiring students to reflect on what they have learned. It is implemented at the end of the EMM program.

**See myEMMdata pages 122–125.**

**Awards:** These motivate and reward students by emphasising growth, effort and completion of tasks.

**Club BugFree Award:** These are for students who score all correct responses over a number of consecutive lessons. The recommended benchmark for this award is 20 consecutive lessons. Sixteen awards are provided allowing teachers to lower the benchmark at their discretion.

**See myEMMdata pages 127–133.**

**Optional awards:** These should be assessed in 20 lesson blocks.

**See myEMMdata pages 135–141.**

### Pretest

Before beginning the program, Lesson 80 and/or Lesson 160 may be used as a pretest. Once Lesson 80 has been completed the results can be compared to the pretest. (Thanks to Far North Queensland Region, Education Queensland, for this suggestion.)

### A suggested introductory script for using the Student Workbook

1. *Write on board Lesson 1 and today's date.*
2. *SAY: Open your Student Workbook to page 3 and find Lesson 1. You are going to write your answers to Lesson 1 in this column. Write the DATE above Lesson 1.*
3. *SAY: Now look at page 2 and find the Lesson 1 Workspace. Use this space for working you cannot do in your head.*
4. *Follow the Elementary Math Mastery Lesson 1 script pages 1–3 up to the corrections.*
5. *SAY: Over the coming lessons I may decide to make an award for accurate marking.*
6. *Correct all questions, see Elementary Math Mastery (page vii).*
7. *After corrections and before debugging SAY: Look at page 3 and find the word BugBoard. A Bug is an incorrect response where you are unable to understand why you are wrong. Look at the BugBoard. For those incorrect responses classified as Bugs shade the BugKey on the corresponding row under the column headed one.*
8. *DEBUG see Elementary Math Mastery (page vii).*
9. *After debugging SAY: Look at page 2 and find the arrow at the bottom of the page. The arrow is pointing to the Visual representation images. I'll read what it says. You follow: For each Lesson the whole of my data is represented in a bar made of 20 rectangles. From the baseline, I summarise my data by shading the number of rectangles equal to my score. You can see the bar under Lesson 1. From the baseline, shade the number of rectangles equal to your score.*
10. *Observe and check students have followed correctly.*

Note: At the end of Lesson 5, introduce the first Round task. *SAY: Look at page 3 and find the arrow at the bottom of the page. The arrow is pointing forward. I'll read what it says. You follow: After recording and summarising my data for these 5 lessons, I go to page 10 and complete my Task for this Round.* Everyone turn to page 10 and complete the Round 1 Task.

## TEACHER INFORMATION

Implementation incorporating EMMathon - Farkota Math Mastery Series:

- Elementary Math Mastery (EMM) ISBN 978-0-07-009120-7

### EMMathon

After students have self-evaluated their first group of 20 lessons (myEMMdata page 12), teachers are advised to run an EMMathon.

An EMMathon is made up of 5 Marathons. A Marathon consists of 2 lessons from the previous 10, where the teacher presents the entire 40 questions without any teacher modelling.

The first Marathon (myEMMdata page 14, coded M01 in the plan below) revisits Lessons 11 and 12 (coded L11–L12) where only the question is presented. The second Marathon (M02) revisits Lessons 13 and 14 (L13–L14) etc. After the first EMMathon is completed, teachers return to the program presenting Lessons 21–40 as per the EMM script.

After students have self-evaluated their second group of 20 lessons (myEMMdata page 26), teachers run a second EMMathon (myEMMdata page 28), then return to the program, and so on. Each of the darker shaded sections below denote an EMMathon round. An EMMathon round consists of 10 lessons restructured into 5, effectively adding 40 lessons to the EMM program.

EMM L01–L20		EMM L21–L40		EMM L41–L60		EMM L61–L80		EMM L81–L100		EMM L101–L120		EMM L121–L140		EMM L141–L160	
Self-evaluation	M01 L11–L12	Self-evaluation	M06 L31–L32	Self-evaluation	M11 L51–L52	Self-evaluation	M16 L71–L72	Self-evaluation	M21 L91–L92	Self-evaluation	M26 L111–L112	Self-evaluation	M31 L131–L132	Self-evaluation	M36 L151–L152
	M02 L13–L14		M07 L33–L34		M12 L53–L54		M17 L73–L74		M22 L93–L94		M27 L113–L114		M32 L133–L134		M37 L153–L154
	M03 L15–L16		M08 L35–L36		M13 L55–L56		M18 L75–L76		M23 L95–L96		M28 L115–L116		M33 L135–L136		M38 L155–L156
	M04 L17–L18		M09 L37–L38		M14 L57–L58		M19 L77–L78		M24 L97–L98		M29 L117–L118		M34 L137–L138		M39 L157–L158
	M05 L19–L20		M10 L39–L40		M15 L59–L60		M20 L79–L80		M25 L99–L100		M30 L119–L120		M35 L139–L140		M40 L159–L160
	<b>EMMathon 1</b>		<b>EMMathon 2</b>		<b>EMMathon 3</b>		<b>EMMathon 4</b>		<b>EMMathon 5</b>		<b>EMMathon 6</b>		<b>EMMathon 7</b>		<b>EMMathon 8</b>
	EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE		EMMathon to BUGFREE

Teachers may consider commencing EMMathons later in the program or adapting them in some other way that better befits the ability of their students. For example, a Marathon could consist of a set of 4 lessons. See pages 150–153 for EMMathon400 optional templates.

### EMMathon Visual Delivery Resources – Free download

<https://shop.acer.edu.au/math-mastery-series>

### EMMathon to BugFree

EMMathons provide students with the opportunity to demonstrate they are BugFree; they affirm fluency and further enhance self-efficacy. Following the first EMMathon students should complete EMMathon 1 Task, myEMMdata page 58, and then, go to page 60 and convert their own EMMathon 1 scores to BugFree levels. Conversions should be performed after each EMMathon.

### Sessions Required to Complete the Math Mastery Series

	Number of sessions to complete MMS			
	EMM	JEMM+	JEMM	TOTAL
Teacher delivered scripted lessons	160	120	80	360
Student Self-evaluations	8	6	4	18
Marathons	40	30	20	90
EMM/JEMM+/JEMMathon tasks	8	6	4	18
Round tasks	24	18	12	54
Challenges	4	4	4	12
<b>TOTAL number of sessions required</b>	<b>244</b>	<b>184</b>	<b>124</b>	<b>552</b>