## ***Mathematics:***

**Using our Recommended Curriculum:**

The key with Maths is to do a little each day. Just 15 or 20 minutes for the Year 1 & 2 child, or 30 minutes for upper Primary level, and up to 45 minutes for older High-schoolers. To keep the interest and prevent 'Maths-burn-out', don't labour for hours-on-end over a difficult Maths concept. Just have short sessions of total focus, and then move on to a different subject. The unwise parent says… *“we will stick at this until you get it, even if it kills us both!”*

However, even if the child does not achieve success by the end of the 20- or 30-minute session, it is better to leave it and come back to it later. The child's mind is always digesting ideas. Sometimes understanding comes in the middle of a creative activity or overnight during their sleep; whereas to keep bashing away at it all morning trying to overcome frustration of parent or child only makes everyone tense and destroys the atmosphere. Maths should never become a battleground.

Option 1: 'Math-U-See' - This is our preferred option that is more aligned with a CM philosophy, and has had wonderful success. (There is an Australian edition that has been mapped to the Australian Curriculum).

Option 2: Other Australian Curriculum programs include Pearson Maths and Jacaranda Maths Quest

**Diagnosis and remediation:**

Australian Curriculum Maths is arranged in a cyclical format, so students engage with similar topics over many years, but at a more complex level. Therefore, children using Pearson or Maths Quest can normally begin at their Year level. If you are concerned, then please ask for advice on diagnosing your child’s ability level.

However - if using Math-U-See: To select an appropriate level of Maths for each child, go to the Maths Australia website (from [www.mathsaustralia.com.au](http://www.mathsaustralia.com.au/)) for a placement test.
(Click on the ‘Online Placement Tests’ at <https://mathsaustralia.com.au/placement-tests/> ).

Once your child has been diagnosed via the Math-u-See Placement Tests you may either commence at the level of Math-u-See recommended by the placement test; or firstly work on specific lessons that repair the gaps in your child's understanding. To do this, go to the placement test for the earliest level where the child showed difficulties on the placement tests (e.g. Gamma, Delta, or Epsilon, etc) and find the mathematical problems that the child had problems with. Then you go to the Mathusee.com website and select the 'worksheets' for that level and that specific problem (e.g. 'multiple digit multiplication' or 'dividing fractions' etc). If you don't feel confident to coach your child in that specific problem and you don't have access to the Math-u-See Teachers Manual or Teaching-DVD, then go to Kahn Academy online, search for the video of the relevant lesson, view the lesson with the child, and then re-attempt the question on the Math-u-See worksheet.

Now move onto the next problem area that showed up on the Math-u-See Placement Tests. After patching up all the gaps, your student should be ready to move onto the appropriate level of Math-u-See and progress by using the following method.

**Method:**

Step 1: Math-u-See usually progresses at one lesson per week. The Parent selects and watches the DVD of the appropriate lesson (e.g. Lesson 1).

Step 2: Parent reads the relevant lesson pages in the Teachers Manual (usually 2 pages).

Step 3: Either teach the child from what you have just learnt in the video and Teachers Manual, or read to the child from the Teacher's pages for that lesson.

Step 4: The child then practices the concept in the Worksheet pages for that particular lesson in the Student Text. There are usually 4 or 5 worksheets or practice pages for each lesson in the Student Text/Workbook. The student practice pages are numbered 1A, 1B, up to 1D or 1E. On the first day after the teaching session the student completes the Student pages for 1A.

Step 5: The Parent should score this first practice page and re-teach any unknown concept or watch the video together with child to find out where they went wrong. The student then does 1B on the next day, etc. if the student is getting 100% for 1A,1B, and 1C then they can skip 1D and E, going onto the next lesson number 2, (with practice worksheets 2A, 2B, 2C, 2D, & 2E,) etc.

Step 6: After about 8 lessons (8 weeks) there is usually a 'Unit Test' to complete. After completing the unit test, the parent can mark it and send it to Homeward Academy at the end of each term (4 tests per year)

**Extra ideas for Mathematics Extension or …**
**What to do if I don't have any curriculum resources yet:**

(i) Maths can be taught very well in real-life situations and with fun games and activities, and then using a gradual introduction of concepts. This relaxed approach helps children grasp the ideas well, without getting uptight and negative about maths. For younger children, try teaching maths while cooking pikelets & scones etc., and using scales, cup and spoon measurements, cutting enough for everyone (give young children measuring cups for the bath and sand pit).

Older children could practise maths through manual arts such as constructing simple wood projects that are functional or decorative; or through home-maintenance projects, or dress-making, etc.

(ii) Measuring everyone in the family - heights, weights, length of legs and arms, even the number of teeth, (including ratio of teeth to age and ratio of teeth to fillings). You may like to put it all on a graph, and compare family members now, and at different times in the future.

(iii) Using a tape measure, hunt out objects which measure 1cm, 10 cm, 1m, and mark out these measurements against body lengths (e.g. the tip of the child’s finger to the first joint is roughly 1 cm, my hand is 10 cm; your hip or shoulder might be 1m from the floor; distance between fence posts, door posts; measure the fridge & oven, washing machine & dryer, etc.) After measuring several items, the children could guess the length or width of other items and then check to see how close they are.

(iv) Age /Ability Appropriate Activities:

**K-3:** Use real things to count/add. Time to collect buttons, matchsticks, cords, pikelets, cutlery, shoes, hats, etc.

Use games such as Dominoes, Uno, Number Boggle, Snakes & Ladders, Junior Scrabble. Count by 1's, 2's, 3's, 4's, 5’s up to 100. Also try skipping or Hop-Scotch or bouncing on a trampoline while counting.

**Grade 4 - 6:** Yahtzee, Rummikin, Scrabble, Monopoly, Squatter, Poleconomy or any board game. Read Number signs. Just as we naturally teach our babies to speak by using the English language at home, so too, we need to make number language a natural part of our communication (e.g. instead of using "little" or "some", say how little "only 1cm long", “the desk is approximately 1 metre wide”, or "there are 5 grapes"). Learn to use terms - ‘half’, ‘quarter’, etc. and practise counting by 2's, 3's, 4's, 5's, 6’s, 7’s, 10's, to prepare for sequencing of larger numbers, times-tables and fractions work.

**Grade 7 - 12:** Through running a home-business (even a simple venture such as baking Anzac biscuits; doing paid house cleaning jobs; or mowing/gardening; for friends and others whom you have vetted) children can learn many applied maths skills, e.g. keeping track of orders or service-hours, handling and recording money, developing a cash flow and then budgeting & allocating some of the profits to be re-invested in the business, some to be given away, some to be saved and some to be spent on carefully thought-out priorities or goals.

(v) Some families even use the household budget as a 'family learning activity', as though they were running a family business. The children have input towards prioritising the household budget, and have a share in the profits after finding ways of saving money for the family (e.g. by halving their shower time thus decreasing the hot-water bill; switching off lights thus decreasing the electricity bill; being more careful about water usage thus decreasing the 'excess water bill'; and thinking of ways to bring some more money into the household such as holding a 'garage sale' or selling off old toys or unused items in the newspaper, local 'trading post' or second hand shop.)