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# User Guide

Note: You can also find the information that follows online, at <https://www.mathmammoth.com/userguides/>.

## Basic principles in using Math Mammoth Complete Curriculum

Math Mammoth is mastery-based, which means it concentrates on a few major topics at a time, in order to study them in depth. The two books (parts A and B) are like a “framework”, but you still have a lot of liberty in planning your child’s studies. You can even use it in a *spiral* manner, if you prefer. Simply have your student study in 2-3 chapters simultaneously. In sixth grade, chapters 1 and 2 should be studied before the other chapters, but you can be flexible with all the other chapters and schedule them earlier or later.

Math Mammoth is not a scripted curriculum. In other words, it is not spelling out in exact detail what the teacher is to do or say. Instead, Math Mammoth gives you, the teacher, various tools for teaching:

- **The two student worktexts** (parts A and B) contain all the lesson material and exercises. They include the explanations of the concepts (the teaching part) in blue boxes. The worktexts also contain some advice for the teacher in the “Introduction” of each chapter.

The teacher can read the teaching part of each lesson before the lesson, or read and study it together with the student in the lesson, or let the student read and study on his own. If you are a classroom teacher, you can copy the examples from the “blue teaching boxes” to the board and go through them on the board.

- There are hundreds of **videos** matched to the curriculum available at <https://www.mathmammoth.com/videos/>. There isn’t a video for every lesson, but there are dozens of videos for each grade level. You can simply have the author teach your child or student!
- Don’t automatically assign all the exercises. Use your judgement, trying to assign just enough for your student’s needs. You can use the skipped exercises later for revision. For most students, I recommend to start out by assigning about half of the available exercises. Adjust as necessary.
- For each chapter, there is a **link list to various free online games** and activities. These games can be used to supplement the maths lessons, for learning maths facts, or just for some fun. Each chapter introduction (in the student worktext) contains a link to the list corresponding to that chapter.
- The student books contain some **mixed revision lessons**, and the curriculum also provides you with additional **cumulative revision lessons**.
- There is a **chapter test** for each chapter of the curriculum, and a comprehensive end-of-year test.
- The **worksheet maker** allows you to make additional worksheets for most calculation-type topics in the curriculum. This is a single html file. You will need Internet access to be able to use it.
- You can use the free online exercises at <https://www.mathmammoth.com/practice/>. This is an expanding section of the site, so check often to see what new topics we are adding to it!
- Some grade levels have **cut-outs** to make fraction manipulatives or geometric solids.
- And of course there are answer keys to everything.

## How to get started

Have ready the first lesson from the student worktext. Go over the first teaching part (within the blue boxes) together with your child. Go through a few of the first exercises together, and then assign some problems for your child to do on their own.

Repeat this if the lesson has other blue teaching boxes. Naturally, you can also use the videos at <https://www.mathmammoth.com/videos/>

Many children can eventually study the lessons completely on their own — the curriculum becomes self-teaching. However, children definitely vary in how much they need someone to be there to actually teach them.

## Pacing the curriculum

The lessons in Math Mammoth complete curriculum are NOT intended to be done in a single teaching session or class. Sometimes you might be able to go through a whole lesson in one day, but more often, the lesson itself might span 3-5 pages and take 2-3 days or classes to complete.

Therefore, it is not possible to say exactly how many pages a student needs to do in one day. This will vary. However, it is helpful to calculate a general guideline as to how many pages per week you should cover in the student worktext in order to go through the curriculum in one school year (or whatever span of time you want to allot to it).

I need to note at this point that Math Mammoth Grade 7 is, in a sense, a hybrid course — it can work as a complete 7th grade curriculum that meets the Common Core Standards, or as a traditional pre-algebra course. The difference between the two has to do with the chapter on the Pythagorean Theorem. If your student(s) will be tested based on the Common Core Standards or your student(s) will be going on to an 8th grade curriculum that is based on the CCS, then you can safely omit the chapter on the Pythagorean Theorem. That theorem will be studied in all algebra 1 and geometry courses anyway, but it also traditionally studied in pre-algebra, so that is why I included it — for those people who wish their students to study it before an algebra 1 course.

On the other hand, if you need a pre-algebra course for your student(s), and if time does not allow, you can omit the chapter on statistics. (That chapter deals with random sampling and comparing two populations informally. High school courses deal with more sophisticated methods for comparing two populations or two samples.) You can also do a combination of your own also.

So, I provide you THREE different tables below for you to plan the pacing: one where the chapter on Pythagorean Theorem is omitted, the second where the statistics chapter is omitted, and the third is for the entire curriculum. Fill in how many school days you are planning to have. Remember to allow several days for tests and cumulative revisions.

In the table below you can check how many pages the student worktexts contain. Fill in how many school days you are planning to have. Remember to allow several days for tests and cumulative revisions.

To get a measure of “pages/day”, divide the number of pages by the number of days. This number will be between 2 and 3, assuming you do school 5 days a week, about 40 weeks a year. Then, multiply this number by 5 to get an approximate weekly page count.

Examples:

### (1) Omitting the chapter on the Pythagorean Theorem:

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202	86	10	76	2.7	13.3
7-B	223	94	10	84	2.7	13.3
Grade 7 total	425	180	20	160	2.7	13.3

The table below is for you to use.

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202					
7-B	223					
Grade 7 total	425					

**(2) Omitting the chapter on statistics:**

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202	88	10	78	2.6	13
7-B	213	92	10	82	2.6	13
Grade 7 total	415	180	20	160	2.6	13

The table below is for you to use.

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202					
7-B	213					
Grade 7 total	415					

**(3) Doing it all:**

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202	81	10	71	2.85	14.2
7-B	250	99	12	87	2.87	14.4
Grade 7 total	452	180	22	158	2.86	14.3

The table below is for you to use.

Grade level	Lesson pages	Number of school days	Days for tests and revisions	Days for the student book	Pages to study per day	Pages to study per week
7-A	202					
7-B	250					
Grade 7 total	452					

Let's say you determine that your student needs to study about 2.6 pages a day, or about 13 pages a week on average in order to finish the curriculum in a year. As the student studies each lesson, keep in mind that sometimes most of the page might be reserved for workspace to solve equations or other problems. You might be able to cover more than the average number of pages on such a day. Some other day you might assign the student only one page of word problems.

When you see large sets of similar exercises, feel free to **only assign 1/2 or 2/3 of those**. If your student masters the concept with those exercises, that is perfect! If not, you can assign the student the rest. You can also use these unassigned problems later for additional revision.

In general, students in first to second grade might spend 25-40 minutes studying maths in a day. Students in third through fourth grade might spend 30-60 minutes, students in fifth through sixth grade should spend about 45-75 minutes, and seventh graders 60-90 minutes a day. If the student finds maths enjoyable, he/she can spend more time with it! However, it is not good to drag out the lessons on a regular basis, because that can affect the student's attitude towards maths.

### Working space, the usage of additional paper and mental maths

The curriculum generally includes working space directly on the page for students to work out the problems. However, feel free to let your students to use extra paper when necessary. They can use it, not only for the “long” algorithms (where you line up numbers to add, subtract, multiply, and divide), but also to draw diagrams and pictures to help organise their thoughts. Some students won't need the additional space (and may resist the thought of extra paper), while some will benefit from it. Use your discretion.

Some exercises don't have any working space, but just an empty line for the answer (e.g.  $200 + \underline{\quad} = 1\,000$ ). Typically, I have intended that such exercises to be done using MENTAL MATHS.

However, there are some students who struggle with mental maths (often this is because of not having studied and used it in the past). As always, the teacher has the final say (not me!) as to how to approach the exercises and how to use the curriculum. We do want to prevent extreme frustration (to the point of tears). The goal is always to provide SOME challenge, but not too much, and to let students experience success enough so that they can continue enjoying learning maths.

Students struggling with mental maths will probably benefit from studying the basic principles of mental calculations from the earlier levels of Math Mammoth curriculum. To do so, look for lessons that list mental maths strategies. They are taught in the chapters about addition, subtraction, place value, multiplication, and division. My article at [https://www.mathmammoth.com/lessons/practical\\_tips\\_mental\\_math](https://www.mathmammoth.com/lessons/practical_tips_mental_math) also gives you a summary of some of those principles.

### Using tests

For each chapter, there is a **chapter test**, which can be administered right after studying the chapter. **The tests are optional**. Some families might prefer not to give tests at all. The main reason for the tests is for diagnostic purposes, and for record keeping. These tests are not aligned or matched to any standards.

In the digital version of the curriculum, the tests are provided both as PDF files and as html files. Normally, you would use the PDF files. The html files are here so you can edit them (in a word processor such as Word or LibreOffice), in case you want your student to take the test a second time. Remember to save the edited file under a different file name, or you will lose the original.

The end-of-year test is best administered as a diagnostic or assessment test, which will tell you how well the student remembers and has mastered the mathematics content of the entire grade level.

### Using cumulative revisions and the worksheet maker

The student books contain mixed revision lessons which revise concepts from earlier chapters. The curriculum also comes with additional cumulative revision lessons, which are just like the mixed revision lessons in the student books, with a mix of problems covering various topics. These are found in their own folder in the digital version, and in the Tests & Cumulative Revisions book in the print version.

The cumulative revisions are optional; use them as needed. They are named indicating which chapters of the main curriculum the problems in the revision come from. For example, “Cumulative Revision, Chapters 1 - 4” includes problems that cover topics from chapters 1-4.

Both the mixed and cumulative revisions allow you to spot areas that the student has not grasped well or has forgotten. When you find such a topic or concept, you have several options:

1. Check if the worksheet maker lets you make worksheets for that topic.
2. Check for any online games and resources in the Introduction part of the particular chapter in which this topic or concept was taught.
3. If you have the digital version, you could simply reprint the lesson from the student worktext, and have the student restudy that.
4. Perhaps you only assigned 1/2 or 2/3 of the exercise sets in the student book at first, and can now use the remaining exercises.
5. Check if our online practice area at <https://www.mathmammoth.com/practice/> has something for that topic.
6. Khan Academy has free online exercises, articles, and videos for most any maths topic imaginable.

### Concerning challenging word problems and puzzles

While this is not absolutely necessary, I heartily recommend supplementing Math Mammoth with challenging word problems and puzzles. You could do that once a month, for example, or more often if the student enjoys it.

The goal of challenging story problems and puzzles is to **develop the student’s logical and abstract thinking and mental discipline**. I recommend starting these in fourth grade, at the latest. Then, students are able to read the problems on their own and have developed mathematical knowledge in many different areas. Of course I am not discouraging students from doing such in earlier grades, either.

Math Mammoth curriculum contains lots of word problems, and they are usually multi-step problems. Several of the lessons utilise a bar model for solving problems. Even so, the problems I have created are usually tied to a specific concept or concepts. I feel students can benefit from solving problems and puzzles that require them to think “out of the box” or are just different from the ones I have written.

I recommend you use the free Math Stars problem-solving newsletters as one of the main resources for puzzles and challenging problems:

**Math Stars Problem Solving Newsletter (grades 1-8)**  
<https://www.homeschoolmath.net/teaching/math-stars.php>

I have also compiled a list of other resources for problem solving practice, which you can access at this link:

<https://l.mathmammoth.com/challengingproblems>

Another idea: you can find puzzles online by searching for “brain puzzles for kids,” “logic puzzles for kids” or “brain teasers for kids.”

### Frequently asked questions and contacting us

If you have more questions, please first check the FAQ at <https://www.mathmammoth.com/faq-lightblue>

If the FAQ does not cover your question, you can then contact us using the contact form at the Math Mammoth.com website.

*I wish you success in teaching maths!*

*Maria Miller, the author*