

# Introduction

“This math doesn’t make any sense. I’ll never use it again anyway!” Have you ever heard this? But math does make sense. And it is a useful tool that nearly everyone uses in one way or another every day.

CLE math is built on the thesis that most children can learn, understand, and master mathematics concepts. It seeks to relate math to everyday life and to make it practical. Mathematics should help students achieve the ultimate goal—serving and bringing glory to God.

CLE Sunrise math introduces concepts in incremental steps. This allows students to master each increment of a skill before advancing to the next step. Thus he does not face entire lessons or chapters on a single concept, but meets several simple concepts simultaneously. Each increment easily becomes a part of his “big picture,” not only because it is small, but also because it fits with what he has already learned.

The only way a student will retain what he has learned is by consistent, systematic review. CLE math uses continuous review. Instead of having a grand review at the end of the year, much of each day’s work is review. This way, you teach for *mastery*, not only for *exposure*. Students will be able to retain important concepts for the whole year.

## Course Materials

Here is what’s needed to teach this course. Items in italics come from CLE.

### Teacher:

- *Teacher’s Guide*
- *Flash Cards* (see “Flash-Card System” in this introduction)
- A container of manipulatives such as blocks, craft sticks, and toothpicks
- A teaching clock, beginning with Lesson 43 (See “Teaching Clock” on page viii of this introduction.)

### For each student:

- *LightUnits* (10 workbooks numbered 101 through 110)

- *My Counting Book*, beginning with Lesson 48 (see “*My Counting Book*” on page viii of this introduction)
- *1-200 Counting Chart* (see “Counting Chart” on page viii of this introduction)
- Dry-erase marker to use with the counting chart
- Container with manipulatives, beginning with Lesson 10 (see “Manipulatives” on page viii of this introduction)
- *Student Clock* (Available from CLE)

**To order additional items, use the CLE Order Forms Booklet or call 1-800-776-0478.**

## Teaching a Lesson

Lessons vary, but here is a typical teaching sequence for a lesson.

### Step 1: Prepare.

- Preview the lesson. Read the lesson objectives. Then read the text in the “new” boxes, making sure you understand the concepts. Although the notes explain some items in detail, customize your presentation to suit your method. Imagine how your students would best respond, and plan accordingly. Write notes in the margins.
- Prepare materials, using the *Class Preparation* list.

### Step 2: Teach the Lesson.

- Meet with students and follow the notes under the “Meet With Students” heading. Counting routines and oral reviews are the main features of this section.
- Ask students to open their *LightUnits* and follow your directions, using the notes under “Begin *LightUnit* Activities.” This section focuses on the title bar, new fact(s), the story problem, new concepts for the day, and number dictation.

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Step 3: Drill flash cards (see below).

Step 4: Administer the speed drill (see page vii).

Step 5: Assign the “I Can Do This” section.

- This section of the lesson is a collection of review activities that students should be able to complete independently. Make sure students understand the directions before assigning.

## Fact Learning

One of the greatest challenges for the young mathematician is memorizing facts. That should be no surprise when we consider that the average first grader needs to learn over 200 math facts.

Because of time constraints, teachers sometimes skimp on fact learning. Don’t do it. A solid foundation in fact learning helps students rise to the higher levels of math. Consider the fifth grader who hasn’t fully mastered his facts—how will he handle fractions, geometry, and pre-algebra?

One hindrance to fact learning is substituting computers for brains. Do not neglect math facts even in an age of calculators.

The goal in fact learning is automatic recall. Eventually, the answers should pop out as fast as the facts are given. This takes years of practice, so math facts must be constantly reviewed in the first several years of school. For this, you must have a thorough, efficient system.

Sunrise Math 100 uses four methods to introduce and drill the basic addition and subtraction facts:

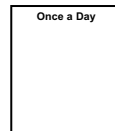
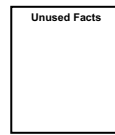
1. Teacher introduction of each fact
2. Workbook practice
3. Daily flash-card practice
4. Speed drill practice

## Flash-Card System

The Sunrise Math 100 flash-card system helps you control when and how often each card is flashed. Cards are grouped in the storage box with divider tabs, and each day certain groups are flashed to the students.

Cards begin in the *Unused Facts* category and end being flashed one day a week. Following is a description of each step and directions on how to

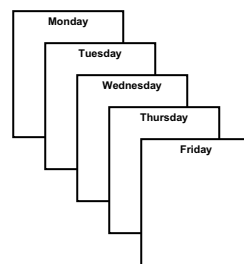
move the cards from one division to another:



**Unused Facts** are the facts that are kept stored until you introduce them. You will begin the year with all the flash cards in front of the *Unused Facts* divider card.

**New Facts** are the most recently introduced cards that need review several times a day. Anytime you introduce a new fact, the teacher’s guide directs you to take its flash card from *Unused Facts* and place it here.

**Once a Day** facts should be more familiar to the students and need to be reviewed only once a day. The teacher’s notes direct you to gather a group of cards from *New Facts* and move them here once a week. The tabs on the back of the flash cards help you locate the correct cards.



**Monday, Tuesday, Wednesday, Thursday, Friday.** These are facts the students can “pop out” answers to with little hesitation, and need to be reviewed only once a week. Each week the teacher’s notes direct you to place a group of cards into one of these categories.

Don’t hesitate to move a fact back into a previous division if students become “rusty” with that fact. Facts must be continually reviewed if you want to maintain mastery.

A stimulating flash-card drill is a good way to begin class, or it could be used in the middle of class for a refreshing change. You may want to include a drill before or after a break, or at other times during the day. You may want to put the facts for the day or difficult facts on the board and require students to recite a fact before leaving their seat. In a homeschool, the father may want to drill the students each evening or morning. This is an enjoyable way to involve Dad and keep him informed of the student’s progress.

Have students stand during flash-card drills for

a relaxing variation. When flashing down or across the rows, teach them to pay attention even when it is not their turn. Keep them on their toes by calling on students out of order.

Don't let students guess at the answers. It is better to establish a pattern of correct answer recall. Students should learn that " $2+2=4$ ," not " $2+2=3$ , no, 7, no, 5, no. . . ." If students don't answer quickly, supply the answer and review the fact.

Accuracy is more important than speed. If students learn the facts accurately in the early grades, they will find it easy to build speed in subsequent grades.

The key to mastering math facts is consistent, systematic review. Students do not master the facts in one day or one week or one month. That is why it pays to be diligent each day to begin memorizing the new facts and to review the previous facts.

Spacing drills out enhances students' learning of facts. Several three-minute drills throughout the day are better than one 15-minute drill.

Don't overdo flash-card drills. Try to make them stimulating and enjoyable. Use games and variation to drill the facts.

### Speed Drills

Regular use of speed drills helps your students rivet the math facts into their minds, thus helping you reach your goal of automatic recall.

Speed drills do not affect the LightUnit grade. Each lesson, beginning with Lesson 19, has a speed drill. Students have one minute to complete the drill.

Encourage speed and accuracy. Each student should compete against himself—not other students.

The teacher's notes recommend administering the speed drill during math class, but you may want to do them at other convenient times.

Generally there are more facts than the average student can answer in a minute. Don't put students under undue pressure to complete every fact. You may want to give some students a minute and a half or even two minutes.

The speed drills continually have new facts added to them. The day before a fact first appears on a speed drill, it is listed beside the galloping horse at the end of the LightUnit lesson. This allows students to prepare with extra practice if

they haven't mastered the fact yet.

If a student is struggling, you may want to send the new facts home with him for parents' help.

Do not allow students to jump around on the drill to answer all the easy facts first.

Students may not always get more facts correct today than they did yesterday. Don't let students get discouraged if their scores are slightly lower some days.

If a student shows weakness in certain facts, give concentrated practice on those facts.

Follow these steps to administer speed drills:

1. Have students turn to the speed drill in the back of the LightUnit. Make sure students know which drill they are to do.
2. Explain or say the following: "When I say, *Ready, begin*, do as many of the facts as you can in one minute. Start at the top and work from left to right. If you come to a fact that you do not know, skip that fact. You can come back to it later if you have time. When I say *Stop*, lay your pencil down."
- Time the students for one minute. Observe to see that the students are completing the drill properly.
3. At the end of one minute, say, *Stop and put your pencils away*.
4. Check the problems as a class. Have students circle correctly answered facts. Teach them to follow from one problem to the next with their finger as you say the fact and the answer from left to right, proceeding down the page. Use terms such as *left* and *right*, *first line*, *second line*, etc. After checking, instruct them to count the circled facts and write the number correct in the box at the top of the drill. Collect the speed drills and check them for accuracy. Check the speed drills as soon as possible.
5. Students should correct and complete the remainder of the drill, either right away or later. Doing this will give them the full benefit of the drill.

## Counting Chart

Counting charts are used throughout the year in a variety of applications. Each student should have a small laminated 1-100 counting chart with a 101-200 counting chart on the back, available from CLE.

For large classes of students, you may also want to purchase a 1-100 wall poster chart from a local teacher supply store, or make one yourself.

Each student should have a dry-erase marker for writing on the chart. A bullet-tip works best.

## Manipulatives

Manipulatives are hands-on teaching tools. Some students seem to naturally see and understand concepts in their minds, while others find it very difficult. Use manipulatives to help these students visualize and understand the concepts you are teaching.

Build a manipulative kit for you and for each student. These may simply be a collection of everyday objects such as blocks, toothpicks, craft sticks, Legos, and crayons.

Store each set of manipulatives in a container such as a closable storage bag or plastic bowl.

Managing manipulatives can be difficult. First and most important is to teach the students prompt obedience and orderliness. Train your students to listen and follow along carefully as you proceed with an activity. Don't allow them to do things in their own way and their own time. To reinforce prompt obedience, do some follow-the-leader drills. For example, have all the students raise their hands at the same time, hold up a pencil with their left hands, sit, tap their toes, touch their ears, etc.

## Money Cup

Beginning with Lesson 6, students begin counting real money. The teacher's notes direct you to place a certain number of coins in a container for students to count. Use a mug, jar, plastic container, etc., for your Money Cup. You may want to write *Money Cup* on the outside and decorate it. We recommend that you have at least one Money Cup for every three students.

For preparing the student Money Cups, keep a reserve of coins on hand, perhaps using an individual container for each type of coin.

## Teaching Clock

Beginning with Lesson 43, you will need a teaching clock. If you are teaching a large group of students, use a clock large enough for all to see. A clock with gears that synchronize the hands is preferable. A simple kitchen clock with minute markings works well. Order CLE's student clock for teaching small groups of students and for individual student practice.

## My Counting Book

Beginning with Lesson 48, students write a series of ten numbers daily (except on quiz and test days). The teacher's notes guide you in assigning the written practice, as well as leading a series of oral counting. After completing each page of 100 numbers, students may do the fun activity on the facing page as a reward.

Although this number writing may seem mundane, it plays a crucial role in helping students understand our number system and in visualizing large numbers like 200 and 1,000.

## Quizzes and Tests

Sunrise Math tests concepts only after they have been reviewed for five days or more. The tests are cumulative. LightUnit 101 has only a final LightUnit test. The other LightUnits have two quizzes and a test.

**LightUnit Grade.** To obtain a final LightUnit grade, average the two quiz grades and any other optional grades. Add this average to the LightUnit Test grade and divide by two. This average will be the final grade for the LightUnit.

Example: Quiz 1 – 96%

Quiz 2 – 98%

Average – 97%

Test score – 93%

Average – 95%

LightUnit score is 95.

**Scores Below 80.** If a student scores 75-79% on a LightUnit Test, he may review the concepts he is weak in. Verify that he knows the material by quizzing him or giving a remedial assignment.

If a student scores 70-74%, have him restudy for the test and take the Alternate LightUnit Test located in Appendix C.

If a student scores 70% or below, have him do a thorough review of the LightUnit before taking the Alternate LightUnit Test or have him redo the entire LightUnit and then take the Alternate LightUnit Test. For both scenarios, if the student scores between 75-100% on the Alternate LightUnit Test, record the score for the LightUnit as 80%.

If all controls are followed but the student consistently fails to achieve 80%, consider underlying causes. What is the student's natural ability? Can he be expected to achieve 80% or above? These students may need to be evaluated by a trained person or to have one-on-one assistance.

### Just For Fun

Just For Fun activities are just that. They are found at the end of some lessons. The students may do them if time permits. You could use them for spare-time activities later in the day. After the first several LightUnits, students should be able to do them independently.

### My Calendar Book

This is a weather/calendar book for learning calendar skills such as days of the week, months, etc. It also leads students in daily observations of clouds, wind, precipitation, temperature, and other weather patterns. Students practise data skills by building several graphs. *My Calendar Book* may be used in first and second grade.

*My Calendar Book* may be used independently of Sunrise Math 100, and is a great way to apply math concepts in a practical way. See the CLE catalog for ordering information.

### Symbols Used in the Teacher's Guide



Counting exercises



Introducing a new concept



Introducing a new fact



Dictation exercises



Story problem. In earlier LightUnits you will read the problem to the students. Story problems are not in the student books until LightUnit 107.

★ Optional Story problem. Enrichment problems that extend the story problem that the student answers in the LightUnit. Students do not need to write the answers to these problems.



Money Cup

### Symbols Used in the LightUnits



Introducing the new fact



Story problem



End of lesson



$$1 - 1 = 0$$

$$2 - 2 = 0$$



## ***Introduction***

Tells students what new fact(s) will be on the speed drill for the next lesson.



Money Cup



Dictation



Calls attention to what students will do in a given set of problems.

# Daily Schedule, First Semester

	Day	LTR	BI	MA
Week 1	1	<b>101:1</b>	<b>101:1</b>	<b>101:1</b>
	2	2		2
	3	3	1	3
	4	4		4
	5	5	2	5
Week 2	6	6		6
	7	7	3	7
	8	8		8
	9	Rev.	4	9
	10	Test		10
Week 3	11	<b>102:1</b>	5	11
	12	2		12
	13	3	6	13
	14	4		14
	15	5	7	15
Week 4	16	6		16
	17	7	8	17
	18	8		18
	19	9	9	19
	20	Rev.		Test
Week 5	21	Test	10	<b>102:21</b>
	22	<b>103:1</b>		22
	23	2	11	23
	24	3		24
	25	4	12	25
Week 6	26	5		26
	27	6	13	27
	28	7		28
	29	8	14	29
	30	9		30

	Day	LTR	LA	BI	MA
Week 7	31	Rev.		15	31
	32	Test			32
	33	<b>104:1</b>		16	33
	34	2			34
	35	3			35
Week 8	36	4		<b>102:1</b>	36
	37	5			37
	38	6		2	38
	39	7			39
	40	8		3	Test
Week 9	41	Rev.			<b>103:41</b>
	42	Test		4	42
	43	<b>105:1</b>	<b>101:1</b>		43
	44	2	2	5	44
	45	3	3		45
Week 10	46	4	4	6	43
	47	5	5		47
	48	6	6	7	48
	49	7	7		49
	50	8	8	8	50
Week 11	51	Rev.	9		51
	52	Test	10	9	52
	53	<b>106:1</b>	Rev.		53
	54	2	Test	10	54
	55	3	<b>102:1</b>		55
Week 12	56	4	2	11	56
	57	5	3		57
	58	6	4	12	58
	59	7	5		59
	60	8	6	13	Test

	Day	LTR	LA	BI	MA
Week 13	61	Rev.	7		<b>104:61</b>
	62	Test	8	14	62
	63	<b>107:1</b>	9		63
	64	2	10	15	64
	65	3	Rev.		65
Week 14	66	4	Test	16	66
	67	5	<b>103:1</b>		67
	68	6	2		68
	69	7	3	<b>103:1</b>	69
	70	8	4		70
Week 15	71	9	5	2	71
	72	Rev.	6		72
	73	Test	7	3	73
	74	<b>108:1</b>	8		74
	75	2	9	4	75
Week 16	76	3	10		76
	77	4	Rev.	5	77
	78	5	Test		78
	79	6	<b>104:1</b>	6	79
	80	7	2		Test
Week 17	81	8	3	7	<b>105:81</b>
	82	9	4		82
	83	10	5	8	83
	84	Rev.	6		84
	85	Test	7	9	85
Week 18	86	<b>109:1</b>	8		86
	87	2	9	10	87
	88	3	10		88
	89	4	Rev.	11	89
	90	5	Test		90

## Daily Schedule, Second Semester

	Day	LTR	LA	RTL	BI	MA
Week 19	91	6	<b>105:1</b>		12	91
	92	7	2			92
	93	8	3		13	93
	94	9	4			94
	95	10	5		14	Test
Week 20	96	Rev.	6			<b>106:96</b>
	97	Test	7		15	97
	98	<b>110:1</b>	8			98
	99	2	9		16	99
	100	3	10			100
Week 21	101	4	Rev.			101
	102	5	Test		<b>104:1</b>	102
	103	6	<b>106:1</b>			103
	104	7	2		2	104
	105	8	3			105
Week 22	106	9	4		3	106
	107	Rev.	5			107
	108	Test	6		4	108
	109		7	<b>101:1</b>		109
	110		8	2	5	Test
Week 23	111		9	3		<b>107:111</b>
	112		10	4	6	112
	113		Rev.	5		113
	114		Test	6	7	114
	115		<b>107:1</b>	7		115
Week 24	116		2	8	8	116
	117		3	9		117
	118		4	10	9	118
	119		5	11		119
	120		6	12	10	120

	Day	LA	RTL	BI	MA
Week 25	121	7	<b>102:1</b>		121
	122	8	2	11	122
	123	9	3		123
	124	10	4	12	124
	125	Rev.	5		Test
Week 26	126	Test	6	13	<b>108:126</b>
	127	<b>108:1</b>	7		127
	128	2	8	14	128
	129	3	9		129
	130	4	10	15	130
Week 27	131	5	11		131
	132	6	12	16	132
	133	7	<b>103:1</b>		133
	134	8	2		134
	135	9	3	<b>105:1</b>	135
Week 28	136	10	4		136
	137	Rev.	5	2	137
	138	Test	6		138
	139	<b>109:1</b>	7	3	139
	140	2	8		Test
Week 29	141	3	9	4	<b>109:141</b>
	142	4	10		142
	143	5	11	5	143
	144	6	12		144
	145	7	<b>104:1</b>	6	145
Week 30	146	8	2		146
	147	9	3	7	147
	148	10	4		148
	149	Rev.	5	8	149
	150	Test	6		150

	Day	LA	RTL	BI	MA
Week 31	151	<b>110:1</b>	7	9	151
	152	2	8		152
	153	3	9	10	153
	154	4	10		154
	155	5	11	11	Test
Week 32	156	6	12		<b>110:156</b>
	157	7	<b>105:1</b>	12	157
	158	8	2		158
	159	9	3	13	159
	160	10	4		160
Week 33	161	Rev.	5	14	161
	162	Test	6		162
	163		7	15	163
	164		8		164
	165		9		165
Week 34	166		10		166
	167		11		167
	168		12		168
	169				169
	170				Test
Week 35	171				171
	172				172
	173				173
	174				174
	175				175
Week 36	176				176
	177				177
	178				178
	179				179
	180				180

**Note:** All new concepts introduced in Math LightUnit 110 are reintroduced in grade two. If your schedule makes it difficult to complete all ten LightUnits, omitting 110 is an option.