

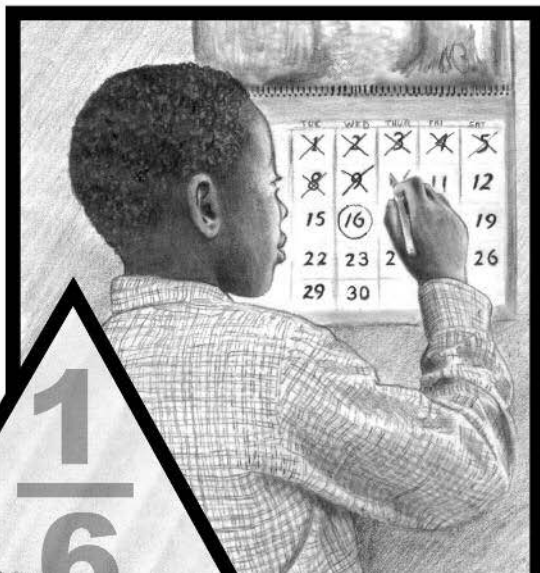
# Mathematics

## Diagnostic Tests 100-400

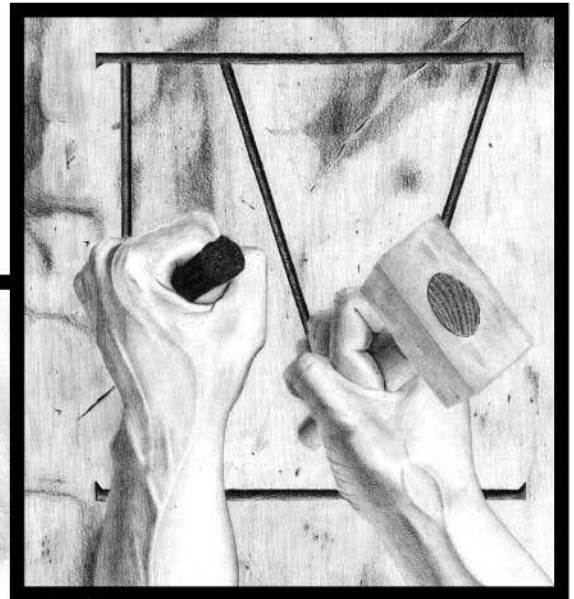
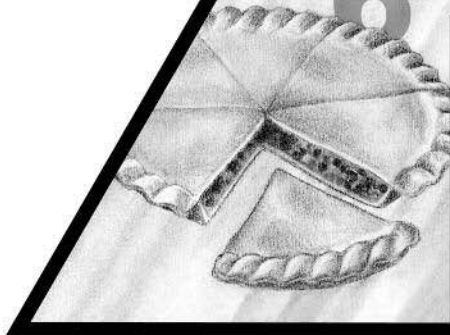


Sunrise Edition

**Teacher's  
Manual**



$\frac{1}{6}$





MATH 100-400 Diagnostic Tests Teacher's Manual

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# MATH 100-400 DIAGNOSTIC TESTS

## TEACHER'S MANUAL

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The material in this book is  
the product of the Lord's blessing  
and many individuals working together  
at Christian Light Publications.



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# Notes

## Why Diagnostic Testing?

Diagnostic tests are specifically designed to determine where a student should begin in the curriculum. Results from these tests give better direction for placement than a student's age or grade level since the course of study varies so much between schools and curricula.

## What Portion of the Booklet Should a Student Complete?

This book covers four levels—100, 200, 300, and 400. Use this chart to decide which ones to work through.

Grade Student is Entering	Work through levels
1	Testing not needed
2	100
3	100-200
4	200-300
5	300-400
6 and up	*Use test booklet 500-800

\*You will need a different booklet to test students in grades 6 and up.

## How Should the Test be Administered?

*Time.* This is not a timed test. Students may take as much time as needed. Give periodic breaks, at least five to ten minutes every hour, and more often for younger students. Ideally, testing should be spread over a two-day period. Test weariness gives unreliable test results.

*Guidance.* You may help students understand instructions; however, do not hint at solutions to problems.

*Calculators.* There are no designated calculator exercises in the test booklet. Calculators should not be used.

*Environment.* Inform students that the test is important, but avoid a tense atmosphere. Help them to feel that the best they can do is good enough. Check comfort factors such as lighting and ventilation. Keep noise and other disturbances to a minimum.

*Progress.* **For Levels 100-400 (Sunrise Math)** Since the different concepts in Sunrise Edition are learned incrementally and spread throughout the year, these levels are tested by entire level, and not by individual LightUnits. The activities in each test are grouped by concepts. The student should begin with the first concept and do as many activities as possible in each group.

## How Do I Score the Test?

Using the answers in this manual, put a mark through the number of each question the student answered incorrectly.

**For Levels 100-400 (Sunrise Math).** Determine the number of activities done correctly out of the total for each level.

## How Do I Then Determine Placement?

Use the *Diagnostic Test Summary* page found in the beginning of the student booklet.

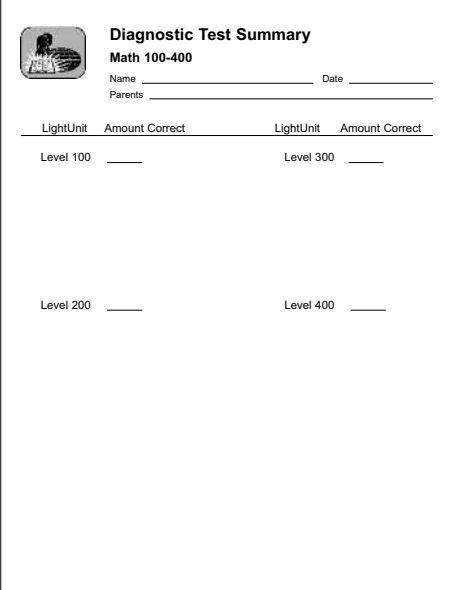
1. Fill in the **Diagnostic Test Summary** on page vi. If you are enrolled with Homeschool Plus at Christian Light Education, also fill in the second summary sheet on page viii. Tear out this perforated sheet and send it to Homeschool Plus and retain a copy for yourself. If you are not enrolled with Homeschool Plus, ignore the extra summary sheet.

2. **For Level 100 (Sunrise Math).** If the student has 40 or more correct answers, he is prepared for Level 200. If less than 40 are correct, the student is not prepared for Level 200, and should do all or most of *Sunrise Math 100* before entering Level 200. If the number correct is in the upper thirties, check the test for an unusual weakness in one or more concepts. If most errors were made in one or two groups, perhaps some remedial work could adequately prepare the child for the next level. However, exercise caution. It is better to build confidence in the child by letting him move quickly through material at an easier level, than to frustrate him with a higher level than he can efficiently manage.

**For Level 200 (Sunrise Math).** If the student has 55 or more correct answers, he is prepared for Level 300. If less than 55 are correct, the student is not prepared for Level 300. He should begin with *Sunrise Math Level 200*.

**For Level 300 (Sunrise Math).** If the student has 75 or more correct answers, he is prepared for Level 400. If less than 75 are correct, the student is not prepared for Level 400, and should begin with *Sunrise Math Level 300*.

**For Level 400 (Sunrise Math).** If the student has 64 or more correct answers, he is prepared for Level 500. If less than 64 are correct, the student is not prepared for Level 500 and should begin with *Sunrise Math Level 400*.



The form is titled "Diagnostic Test Summary" and "Math 100-400". It includes fields for "Name", "Date", "Parents", and "LightUnit". Below these fields is a table with four columns: "LightUnit", "Amount Correct", "LightUnit", and "Amount Correct". The rows are labeled "Level 100", "Level 200", "Level 300", and "Level 400". Each row has a blank line for the "Amount Correct" value.

LightUnit	Amount Correct	LightUnit	Amount Correct
Level 100	_____	Level 300	_____
Level 200	_____	Level 400	_____

If you have questions or need further assistance, feel free to contact CLE by phone (540-434-0750), FAX (540-433-8896), E-mail (homestudy@clp.org), or write us at P.O. Box 1212, Harrisonburg, VA 22803.


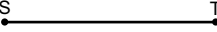
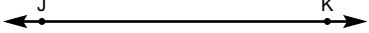
# Answers for Level 100

## *Sunrise Edition*

- |      |                                    |     |  |
|------|------------------------------------|-----|--|
| 1.   | 8:00                               | 33. | 68   |
| 2.   | 6:35                               | 34. | 572  |
| 3.   | 8:05                               | 35. | 462  |
| 4.   | 60                                 | 36. | 689  |
| 5.   | 9                                  | 37. | 261 should be written in the box on the right side of the tree |
| 6.   | 8                                  | 38. | >  |
| 7.   | 9                                  | 39. | <  |
| 8.   | 9                                  | 40. | the triangles should be colored                                |
| 9.   | 8                                  | 41. | three circles should be drawn                                  |
| 10.  | $\frac{3}{4}$                      | 42. | 8, 10, 12  |
| 11.  | $\frac{1}{2}$                      | 43. | false  |
| 12.  | $\frac{1}{3}$                      | 44. | true   |
| 13.  | $\frac{1}{4}$                      | 45. | 63   |
| 14.  | 4 butterflies should be circled    | 46. | 43   |
| 15.  | 8, 4                               | 47. | 335  |
| 16.  | 135, 137                           | 48. | 544  |
| 17.  | 70                                 | 49. | 897  |
| 18.  | odd numbers should be circled      | 50. | 4  |
| 19.  | 202                                | 51. | line should be 6 cm long, starting from the dot                |
| 20.  | 9, 1, 2                            | 52. | 12   |
| 21.  | 87                                 | 53. | box of eggs should be circled                                  |
| 22.  | 23                                 | 54. | $4 + 2 = 6$ , 6  |
| 23.  | 79                                 | 55. | $4 + 3 = 7$ , 7  |
| 24.  | 995                                | 56. | $4 + 6 = 10$ , 10  |
| 25.  | 98                                 | 57. | $9 - 3 = 6$ , 6  |
| *26. | 77¢                                | 58. | $8 - 6 = 2$ , 2  |
| *27. | 31¢                                | 59. | $9 - 4 = 5$ , 5  |
| *28. | \$3.00                             | 60. | $4 + 3 = 7$ , 7  |
| 29.  | \$7.10                             |     |  |
| 30.  | \$3.00                             |     |  |
| 31.  | four dollars and twenty-four cents |     |  |
| 32.  | 44                                 |     |  |
- \* Canadian users may substitute money-counting exercises in their own currency.

# Answers for Level 200

## Sunrise Edition

- |  |  |
|--|--|
| <p>1. 93</p> <p>2. 56</p> <p>3. \$9.17</p> <p>4. \$4.21</p> <p>5. 571</p> <p>6. 393</p> <p>7. 7</p> <p>8. 12</p> <p>9.    7-July      3-March      6-June</p> <p>      1-Jan.     8-August     11-November</p> <p>      10-Oct.    9-Sept.      4-April</p> <p>      5-May.     2-February   12-Dec.</p> <p>10. 16</p> <p>11. Tuesday</p> <p>12. 24</p> <p>13. 4:30 p.m.</p> <p>14. 7:30 a.m.</p> <p>15. 6:43</p> <p>16. sum</p> <p>17. addend</p> <p>18. difference</p> <p>19. 480</p> <p>20. 912</p> <p>21. "four-sixths"</p> <p>22. "two-thirds"</p> <p>23. "one-half"</p> <p>24. <math>1\frac{1}{2}</math>; 2; <math>2\frac{1}{2}</math></p> <p>25. a</p> <p>26. d</p> <p>27. c</p> <p>28. b</p> <p>29. The second angle should be marked.</p> | <p>30. The hexagon should be circled. </p> <p>31. </p> <p>32. </p> <p>33. MN (or NM)</p> <p>34. BCD (or CDB or CBD, etc.)</p> <p>35. B</p> <p>36. E</p> <p>37. D</p> <p>38. A</p> <p>39. C</p> <p>40. F</p> <p>41. The strawberry should be circled.</p> <p>42. 36</p> <p>43. 4</p> <p>44. 2</p> <p>45. 2</p> <p>46. 32°F    0°C</p> <p>47. 3</p> <p>48. 100</p> <p>49. 4</p> <p>50. meter</p> <p>51. 3 quarters, 0 dimes, 2 nickels, 1 penny</p> <p>52. 0 quarters, 8 dimes, 1 nickel, 1 penny<br/>(Note: Other correct answers are possible.)</p> <p>53. 12</p> <p>54. 12</p> <p>55. 30</p> <p>56. 25</p> <p>57. 0</p> <p>58. true</p> <p>59. false</p> <p>60. true</p> <p>61. 6; 9; 12; 18; 21; 24; 27; 30</p> <p>62. 8; 12; 16; 24; 28; 32; 36; 40</p> |
|--|--|



- 63. 4,003
- 64. 6,024
- 65.  $\neq$
- 66.  $=$
- 67. 213; 235; 645; 726
- 68. 70; 80
- 69. 300; 400
- 70. 65
- 71. 350
- 72. The horizontal feather should be circled.

- 73-75. 39 books
- 76-78. 16 (more) letters
- 79. || (basketballs)  
| (footballs)  
||| (softballs)

80.

basketballs							
footballs							
softballs							
	1	2	3	4	5	6	7

## Answers for Level 300

### *Sunrise Edition*

- 1.  $\frac{3}{5}$
- 2.  $\frac{6}{10}$
- 3.  $\frac{5}{10} = \frac{1}{2}$
- 4.  $\frac{4}{7}$
- 5. b
- 6. a
- 7.  $4\frac{1}{3}$
- 8. six and four-fifths
- 9.  $\frac{1}{9}$ ;  $\frac{1}{7}$ ;  $\frac{1}{6}$ ;  $\frac{1}{5}$ ;  $\frac{1}{4}$
- 10.  $<$
- 11.  $\frac{3}{3}$
- 12. 12
- 13. 43
- 14. Check that student has drawn a line  $2\frac{1}{2}$  inches long.
- 15. 5
- 16. 17
- 17. 57 millimeters
- 18. 5.7
- 19. 9
- 20. 8
- 21. 600
- 22.  $\frac{5}{10}$
- 23. 0.5
- 24.  $2\frac{9}{10}$
- 25. 2.9
- 26. 1.4
- 27. 0.4    4.0    4.3
- 28. 14,321
- 29. \$766.31
- 30. 8,585
- 31. 189
- 32. \$8.17
- 33. 8.5
- 34. 1.2

**Level 300**

- 35. 9.7
- 36. 654,123
- 37. 3,820
- 38. 50,005
- 39. 300,000
- 40. 420,604
- 41. 72,036
- 42. 802,640
- 43. 2
- 44. 5
- 45. 6
- 46. 7
- 47. 4
- 48. 8
- 49. 9; 6
- 50. 9.2
- 51. 0.4
- 52. 3,587
- 53. 173
- 54. 66
- 55. 3,515
- 56. \$3.44
- 57. 1,638
- 58. 1,672
- 59. 2.4
- 60. 
$$\begin{array}{r} \overset{5,1}{\$603.64} \\ - \overset{5,1}{43.29} \\ \hline \$560.35 \end{array}$$
- 61. 8
- 62. 80
- 63. 60
- 64. 0.3
- 65. 7; 7.3
- 66. 474
- 67. 450
- 68. 68
- 69. 
$$\begin{array}{r} \overset{4}{36} \\ \times 8 \\ \hline 288 \end{array}$$

- 70. b
- 71. a
- 72. True
- 73. 240
- 74. 5,600
- 75. 630
- 76. 5,400
- 77. 7 14 21 28 35 42 49 56 63 70
- 78. 40 (50)
- 79. (10) 20
- 80. 60 (70)
- 81. 500 (600)
- 82. 600 (700)
- 83. (400) 500
- 84. 50
- 85. 80
- 86. 30
- 87. 500
- 88. 900
- 89. 700
- 90. 650
- 91. 75
- 92-94. 13 bushels 
$$\begin{array}{r} \overset{5,1}{\cancel{00}} \\ - \overset{5,1}{47} \\ \hline 13 \end{array}$$
- 95-97. 585,186 square miles 
$$\begin{array}{r} \overset{39,1}{586,400} \\ - \overset{39,1}{1,214} \\ \hline 585,186 \end{array}$$
- 98-100. 163 students 
$$\begin{array}{r} \overset{1}{126} \\ + \overset{1}{37} \\ \hline 163 \end{array}$$
- 101-103. 60 ears of corn 
$$\begin{array}{r} \overset{2}{15} \\ \times \overset{2}{4} \\ \hline 60 \end{array}$$
- 104-106. 51 customers 
$$\begin{array}{r} \overset{1}{24} \quad \overset{5,1}{\cancel{00}} \\ + \overset{1}{36} \quad - \overset{5,1}{9} \\ \hline 60 \quad 51 \end{array}$$

# Answers for Level 400

## Sunrise Edition

1.  $<$
2.  $>$
3.  $11 - 3$   
 $8$
4.  $24 + 3$   
 $27$
5. 2.43
6. tenths, ones, hundredths
7. 4.82    4.73    4.48    4.39
8. 2
9. 6
10. 5
11. 27.54
12. 38.76
13. 9R5
14. 21
15. 81R4
16. 
$$\begin{array}{r} 81 \\ \times 8 \\ \hline 648 \\ + 4 \\ \hline 652 \end{array}$$
17.  $69\frac{3}{4}$
18. 128
19. 140
20. 140
21. 36
22. 126
23. 28
24. 2; 4; 8
25. 7
26.  $\frac{9}{6}$
27.  $\frac{17}{3}$
28.  $1\frac{3}{4}$
29.  $\frac{5}{12}$
30.  $\frac{7}{10}$
31.  $2\frac{3}{8}$
32.  $10\frac{6}{7}$
33.  $9\frac{12}{18} = 9\frac{2}{3}$
34.  $5\frac{7}{5} = 6\frac{2}{5}$
35. 8
36. 12
37.  $\frac{5}{20}$
38.  $\frac{10}{45}$
39. 4
40. 12
41.  $\overline{JK}$  or  $\overline{KJ}$
42.  $\overrightarrow{MN}$
43.  $\leftrightarrow$      $\leftrightarrow$   
RS or SR
44.  $\leftrightarrow$      $\leftrightarrow$   
RS or SR
45. 35 ft<sup>2</sup>
46. 24 ft
47. 84 in<sup>3</sup>
48.  $\overline{OQ}$  or  $\overline{QO}$
49.  $\overline{QR}$  or  $\overline{RQ}$
50.  $\triangle DEF$  Order of letters may vary.
51. 12
52. 2
53. right
54. acute
55. obtuse
56.  $2\frac{1}{4}$
57. 

feet	3	6	<b>18</b>	12	<b>9</b>	21	<b>24</b>
yards	1	<b>2</b>	6	<b>4</b>	3	<b>7</b>	8
58. 

quarts	4	8	<b>16</b>	12	<b>24</b>	32	<b>20</b>
gallons	1	<b>2</b>	4	<b>3</b>	6	<b>8</b>	5

**Level 400**

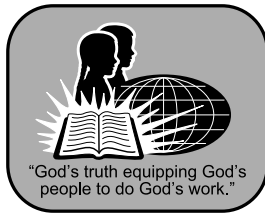
59. 

centimeters	100	<b>800</b>	700	<b>400</b>	500	<b>900</b>
meters	1	8	7	4	5	9
60. \$20.16
61. 68
62. 1,260
63. 16,952
64. 116,896
65. 24; 96; 108; 132; 36; 72; 84; 144; 60; 48
66. 44; 66; 22; 121; 77; 33; 110; 99; 55; 88
67. one hundred twenty-five million, three hundred sixteen thousand, two
68. 323,413,446
69. 406,002,040
70. 5
71. 3
72. 10:5
73. 5:4
74. \$25.00
75. \$4.00
76. \$16.00
77.  $50 - 20 = 30$
78.  $200 + 700 = 900$
79. 260
80. 320
81. 290
82. 400
83. 3,600
84. 600
85. 4,000
86.  $200 \times 600 = 120,000$
87.  $60 \times 50 = 3,000$
88. \$31.77
89. 45,767
90. 3,936
91. 
$$\begin{array}{r} \$43.26 \\ -17.06 \\ \hline \$26.20 \end{array}$$









**CLE**



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