Placement Tests (1–6) – Introduction

*Math Lessons for a Living Education* teaches math in a unique way—these placement tests will guide you in determining the best level in which to place your student.

Each placement test contains the skills and concepts your student must know and understand **in order to enter that level**. These are the prerequisite skills your child must understand in order to begin each level the test is for.

As your student works through these tests, make sure they understand:

- **How** each process is performed
- **Why** each process works

As your student completes each problem, ask them to **show or tell** you what they are doing and why they are doing it. Future success in mathematics relies upon your student understanding both the why and how of math.

**Example placement scenarios**

If your student can . . .

- Easily pass the test for Level 3 and understands both why and how they utilize those mathematical concepts, but struggles in the Level 4 test, your student is ready to begin level 3.
- If your student can pass the test for Level 5—but cannot show or tell you how concepts work (they know how to “fill in the blanks”), your student should begin level 4 in order to fill in learning gaps and create a true understanding of the concepts.
- If your student can pass the test for Level 4, but has one or two learning gaps (they are still a little shaky on a topic or two), you may evaluate the topics covered in both Level 3 & 4 and use your discretion in placing them. We would recommend working through level 3 at an accelerated pace; however, you may choose to place your student in level 4 and fill in learning gaps together.
This is a checklist to assess your student’s readiness to begin *Math Lessons for a Living Education Level 1*. If your student can accomplish all the activities in this test, they are prepared to begin Level 1.

☐ know left from right

☐ draw a straight line

☐ trace a looping line

☐ write name, holding pencil correctly

☐ use scissors correctly to cut lines at the bottom of this page

☐ know colors (blue, red, yellow, orange, purple, green, brown, black, white)

☐ follow directions successfully (i.e. play Mother May I, giving 2-step instructions)
This placement test assesses your student’s readiness to begin *Math Lessons for a Living Education Level 2*. Please discuss any missed problems with the student in order to understand the reason he or she missed them. Instructions for grading are at the beginning of each section. **If your student completes this test and understands the concepts, they are prepared to begin *Math Lessons for a Living Education Level 2*.**

**Part one:** (The student should make no more than 2 mistakes on each of these sections.)

**Section 1:** Teacher instruct your student to write the numbers 0-100 on the following lines.
Part 2: Teacher, instruct your student to underline every number on the previous page that is in the ones place with a red crayon/pencil, every number in the tens place with a green crayon/pencil, every number in the hundreds place with a blue crayon/pencil.

Orally, have your student answer these questions.

☐ In the number 236, what does 6 stand for?
  a) six groups of ten
  b) six groups of one
  c) six groups of one hundred

☐ In the number 236, what does 3 stand for?
  a) three groups of ten
  b) three groups of one
  c) three groups of one hundred

☐ In the number 236, what does 2 stand for?
  a) two groups of ten
  b) two groups of one
  c) two groups of one hundred

Section two: (The student should make no more than 1 mistake on each of these points.)

Point 1: Teacher have your student draw hands on these clocks to show the correct time.
Point 2: Teacher have your student answer these. They should do these from memory; watch them carefully and take note of the ones they have to think or count to answer. (This is about seeing if your student understands the concept of addition - if they can answer from memory, this is a plus, but not absolutely necessary.)

\[
\begin{align*}
2 + 8 &= \\
3 + 2 &= \\
6 + 3 &= \\
4 + 2 &= \\
9 + 1 &= \\
2 + 3 &= \\
4 + 5 &= \\
4 + 4 &= \\
8 + 2 &= 
\end{align*}
\]

Point 3: Teacher have your student answer these quickly. They should do these from memory; watch them carefully and take note of the ones they have to think or count to answer. (This is about seeing if your student understands the concept of subtraction - if they can answer from memory, this is a plus, but not absolutely necessary.)

\[
\begin{align*}
10 - 2 &= \\
9 - 7 &= \\
10 - 8 &= \\
8 - 3 &= \\
10 - 5 &= \\
7 - 4 &= \\
6 - 2 &= \\
9 - 5 &= \\
6 - 5 &= 
\end{align*}
\]

Section three: (The student should make no more than 1 mistake on each of this point.)
Teacher, have your student narrate to you the relationship between addition and subtraction. Do not help or coach your student at all. It is extremely important that they understand the relationship between these two operations. If your student has done well on the other parts of this placement test, but does not understand this concept of relationship, please take a few minutes to use manipulatives to show them with the hands-on/visual/auditory approach. If they are not understanding this concept easily and are not able to narrate back to you as they show you with the manipulatives, they are not ready for Book 2.
This placement test assesses your student’s readiness to begin *Math Lessons for a Living Education Level 3*. Please discuss any missed problems with the student in order to understand the reason that he or she missed them. Instructions for grading are at the beginning of each section. **If your student completes this test and understands the concepts, they are prepared to begin *Math Lessons for a Living Education Level 3*.**

**Section one:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Fill in the chart correctly.

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<tr>
<th>Thousands</th>
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**Point 2:** Look at the numbers in the chart above. Color each even number, green. Color each odd number, blue.

**Point 3:** What numbers do odd numbers end in? _______________________________________

What numbers do even numbers end in? _______________________________________

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Section two: (The student should make no more than 2 mistakes on each of these points.)

Point 1: Write the correct time shown on each clock.

Point 2: Count the money and write the correct amount.
Point 3: Find the perimeter of each shape.

- a square with 2 inch sides
- a rectangle with 1 inch width and 3 inch length

---

Point 4: Add and subtract.

\[
\begin{array}{cccccc}
28 & 41 & 34 & 87 & 49 \\
12 & 99 & -21 & -65 & -26 \\
32 & 38 \\
+50 & +61 \\
\end{array}
\]

Point 5: Measure these lines. Write the length.

☆ __________________________

☆ __________________________

☆ __________________________

☆ __________________________
This placement test assesses your student’s readiness to begin Math Lessons for a Living Education Level 4. Please discuss any missed problems with the student in order to understand the reason that he or she missed them. Instructions for grading are at the beginning of each section. If your student completes this test and understands the concepts, they are prepared to begin Math Lessons for a Living Education Level 4.

Section one: (The student should make no more than 2 mistakes on each of these points.)

Point 1: Add and Subtract.

\[
\begin{align*}
4,561 &+ 3,290 &+ 823,197 &+ 329,528 &+ 56,291 \\
5,198 &+ 9,229 &+ 29,510 &- 32,999 &- 13,897 \\
+ 3,210
\end{align*}
\]

Point 2: Round these numbers to the nearest 10. Round these numbers to the nearest 100.

\[
\begin{align*}
23 &
\quad & 189 \\
891 &
\quad & 2,345 \\
466 &
\quad & 982 \\
138 &
\quad & 312 \\
\end{align*}
\]

Round these numbers to the nearest 1,000.

\[
\begin{align*}
3,780 &
\quad & 1,890 \\
12,428 &
\quad & 12,000 \\
9,621 &
\quad & 10,000 \\
13,289 &
\quad & 13,000 \\
\end{align*}
\]
**Point 3:** Complete this multiplication chart.

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**Point 4:** Narrate to your teacher the relationship between multiplication and division. Use manipulatives to demonstrate your understanding.

(Note to the teacher: this point is a make or break. If your student does not understand multiplication and division well enough to confidently and clearly narrate to you the relationship between multiplication and division, seriously consider placing them in the previous book in this series.)
Section two: (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Find the area. Write the equations for each one.

- 2 inches x 2 inches = 4 square inches
- 4 inches x 4 inches = 16 square inches
- 3 inches x 6 inches = 18 square inches

**Point 2:** Correctly divide and color each circle to show the fraction written under each one.

- \(\frac{1}{2}\)
- \(\frac{3}{4}\)
- \(\frac{2}{5}\)
- \(\frac{5}{6}\)
- \(\frac{4}{7}\)
- \(\frac{3}{8}\)
- \(\frac{1}{3}\)

**Point 3:** Solve these word problems.

There were 32 tulips at the flower stand. If 4 ladies bought an equal number of the tulips, how many tulips did they each buy?

4 tulips per lady
The family drove 126 miles before lunch. After lunch, they drove 253. How many more miles did they drive in the afternoon than in the morning? How many miles did they drive in the morning and the afternoon together?

**Point 4:** Solve these problems.

Circle groups of 3.  
\[
\frac{1}{6} \text{ of } 18 = 6 \times ____ = 18
\]

Circle groups of 5.  
\[
\frac{1}{2} \text{ of } 10 = 2 \times ____ = 10
\]

Circle groups of 4.  
\[
\frac{1}{3} \text{ of } 12 = 3 \times ____ = 12
\]

**Point 5:** Write the Roman Numeral for each number.

1 ____
5 ____
10 ____
50 ____
100 ____
1,000 ____
This placement test assesses your student’s readiness to begin *Math Lessons for a Living Education Level 5*. Please discuss any missed problems with the student in order to understand the reason that he or she missed them. Instructions for grading are at the beginning of each section. **If your student completes this test and understands the concepts, they are prepared to begin *Math Lessons for a Living Education Level 5*.**

**Section one:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Add and Subtract.

\[
\begin{align*}
289,591 & \quad 87,109,792 & \quad 890,573 \\
429,398 & + 1,349,029 & + 449,977 \\
+ 129,510 & & \\
\hline
23,369,219 & & 566,773 \\
- 57,259 & - 233,783 & \\
\end{align*}
\]

**Point 2:** Multiply

\[
\begin{align*}
45 & \quad 85 & \quad 93 & \quad 72 & \quad 25 \\
\times 33 & \quad \times 41 & \quad \times 55 & \quad \times 29 & \quad \times 12 \\
\end{align*}
\]

**Divide.**

\[
\begin{align*}
4 \overline{9} & \quad 3 \overline{8} & \quad 5 \overline{6} \\
\end{align*}
\]
Point 3: Word Problems

The toy shop had 2,872 boomerangs in stock for the Christmas sale. After the sale, there were 1,988 boomerangs still in stock. The store decided to place half of the boomerangs on the clearance shelves, and donate the other half to a missions organization. How many boomerangs were donated to the missions organization? When the boomerangs were delivered to the missions organization, they were equally packaged in two large boxes. How many were in each box? When the workers at the organization opened one of the boxes, they found that a dozen boomerangs had been damaged in the shipment. How many boomerangs were undamaged in that box?

Point 4: Add and subtract these fractions.

\[
\frac{3}{7} + \frac{2}{7} = \quad 2\frac{2}{5} + 1\frac{1}{5} = \quad 3\frac{5}{9} + 2\frac{1}{9} = \\
\frac{3}{11} + \frac{6}{11} = \quad 6\frac{2}{3} - 4\frac{1}{3} = \quad \frac{5}{12} - \frac{4}{12} = \\
\frac{8}{13} - \frac{5}{13} = \quad 11\frac{9}{10} - 8\frac{3}{10} =
\]

Section two: (The student should make no more than 2 mistakes on each of these points.)

Point 1: Multiply top and bottom of each these fractions by 3 to find equivalent fractions.

\[
\frac{2}{5} = ____ \quad \frac{1}{3} = ____ \quad \frac{5}{8} = ____ \quad \frac{4}{7} = ____
\]

Point 2: Find equivalent fractions by dividing each fraction by 4.

\[
\frac{4}{12} = ____ \quad \frac{32}{40} = ____ \quad \frac{20}{28} = ____ \\
\frac{40}{48} = ____ \quad \frac{12}{36} = ____ \quad \frac{16}{24} = ____
\]
### Point 3: Multiply

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This placement test assesses your student's readiness to begin *Math Lessons for a Living Education Level 6*. Please discuss any missed problems with the student in order to understand the reason that he or she missed them. Instructions for grading are at the beginning of each section. **If your student completes this test and understands the concepts, they are prepared to begin *Math Lessons for a Living Education Level 6***.

**Section One:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Addition and Subtraction

1. \[
\begin{array}{c}
285,230 \\
+ 199,967 \\
\end{array}
\]

2. \[
\begin{array}{c}
19,002 \\
+ 7,139 \\
\end{array}
\]

3. \[
\begin{array}{c}
800,045 \\
- 697,999 \\
\end{array}
\]

4. \[
\begin{array}{c}
10,000 \\
- 2,999 \\
\end{array}
\]

**Point 2:** Multiplication and Division

5. \[
\begin{array}{c}
412,678 \\
\times 3,312 \\
\end{array}
\]

6. \[
\begin{array}{c}
812 \\
\times 88 \\
\end{array}
\]

7. \[2 \ 7 \ 5 \ 6 \ 7 \ 8 \ 1\]

8. \[1 \ 1 \ 5 \ 2 \ 3 \ 0 \ 5 \ 4 \ 2\]
Section Two: (The student should make no more than 2 mistakes on each of these points.)

Point 3: Story problem. Explain and show your teacher every step of this story problem.

9. A road trip is 2,540 miles long. One quarter of those miles were through mountainous terrain. Explain to your teacher how you would go about finding the number of miles that are through mountainous terrain. Write that number here:

If you drove those miles through mountainous terrain at an average speed of 45 miles per hour, how many hours would it take you to drive through the mountainous terrain (explain and write your answer here).

Point 4: Place Value

Circle the digits.

10. In the ten's place: 317,002 299 512 899,982

11. In the ten-thousand's place: 23,009,167 56,451 173,900

12. In the million's place: 431,229,501 99,223,147 10,000,332

13. a. Now tell your teacher what each of the circled digits stand for.
   b. Read the numbers to your teacher.

Section Three: (The student should make no more than 2 mistakes on each of these points.)

Point 5: Fractions and Mixed Numbers (Watch those denominators!) Explain and show.

\[
\begin{align*}
\frac{1}{2} & + \frac{1}{4} \\
6\ \frac{3}{5} & - 2\ \frac{1}{5} \\
7\ \frac{6}{14} & - 5\ \frac{2}{7}
\end{align*}
\]

14. 15. 16.
Point 6:
Circle the decimal or percent that matches the fraction. Explain and show your teacher as you solve each problem.

17. \( \frac{1}{2} \): 40% and 0.4 20% and 0.2 50% and 0.5
18. \( \frac{3}{4} \): 34% and 3.4 43% and 4.3 75% and 0.75
19. \( \frac{1}{4} \): 22% and 0.22 25% and 0.25 14% and 0.14
20. \( \frac{1}{5} \): 15% and 0.15 20% and 0.2 51% and 0.51

Section Four: (The student should make no more than 2 mistakes on each of these points.)

Point 7: Geometry

Find the perimeter of each shape.

21.

22.

23.

24. Find the area of the rectangle in problem 22.

25. Explain the difference between the perimeter and the area of a shape.
Math Lessons for a Living Education teaches math in a unique way—these placement tests will guide you in determining the best level in which to place your student.

Each readiness evaluation is testing the mathematical skills and concepts your student must know and understand in order to enter that level. You can think of these as the prerequisite skills and concepts your child must understand in order to begin the level the test is for.

As your student works through these tests, make sure they understand:

• How each process is performed
• Why each process works

As your student completes each problem, ask them to SHOW or TELL you what they are doing and why they are doing it. Future success in mathematics relies upon your student understanding both the why and how of math.

Example placement scenarios

If your student can . . .

• Easily pass the test for Level 3 and understands both why and how they utilize those mathematical concepts, but struggles in the Level 4 test, your student is ready to begin level 3.

• If your student can pass the test for Level 5—but cannot show or tell you how concepts work (they know how to “fill in the blanks”), your student should begin level 4 in order to fill in learning gaps and create a true understanding of the concepts.

• If your student can pass the test for Level 4, but has one or two learning gaps (they are still a little shaky on a topic or two), you may evaluate the topics covered in both Level 3 & 4 and use your discretion in placing them. We would recommend working through level 3 at an accelerated pace to fill in learning gaps; however, you may choose to place your student in level 4 and fill in learning gaps together.
Ensure your student can accomplish each task on this list. **If your student can accomplish all the activities in this test, they are prepared to begin Level 1.**

- [ ] know left from right
- [ ] draw a straight line
- [ ] trace a looping line
- [ ] write name, holding pencil correctly
- [ ] use scissors correctly to cut lines at the bottom of this page
- [ ] know colors (blue, red, yellow, orange, purple, green, brown, black, white)
- [ ] follow directions successfully (i.e. play Mother May I, giving 2-step instructions)
Instructions for grading are found at the beginning of each section. **If your student understands all the concepts on the Level 2 Placement Test, they are ready to begin *Math Lessons for a Living Education Level 2*. Please do not place an unprepared student in this book, as it will only frustrate them and inhibit them from learning.**

**Part one:** (The student should make no more than 2 mistakes on each of these sections.)

**Section 1:** Teacher instruct your student to write the numbers 0-100 on the following lines.

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________________________________________________________________________
Part 2: Teacher, instruct your student to underline every number on the previous page that is in the ones place with a red crayon/pencil, every number in the tens place with a green crayon/pencil, every number in the hundreds place with a blue crayon/pencil.

Orally, have your student answer these questions.

☐ In the number 236, what does 6 stand for?  (b)
  a) six groups of ten
  b) six groups of one
  c) six groups of one hundred

☐ In the number 236, what does 3 stand for?  (a)
  a) three groups of ten
  b) three groups of one
  c) three groups of one hundred

☐ In the number 236, what does 2 stand for?  (c)
  a) two groups of ten
  b) two groups of one
  c) two groups of one hundred

Section two: (The student should make no more than 1 mistake on each of these points.)

Point 1: Teacher have your student draw hands on these clocks to show the correct time.
Point 2: Teacher have your student answer these. They should do these from memory; watch them carefully and take note of the ones they have to think or count to answer. (This is about seeing if your student understands the concept of addition - if they can answer from memory, this is a plus, but not absolutely necessary.)

\[
\begin{align*}
2 + 8 &= 10 \\
4 + 2 &= 6 \\
4 + 5 &= 9 \\
3 + 2 &= 5 \\
9 + 1 &= 10 \\
4 + 4 &= 8 \\
6 + 3 &= 9 \\
2 + 3 &= 5 \\
8 + 2 &= 10
\end{align*}
\]

Point 3: Teacher have your student answer these quickly. They should do these from memory; watch them carefully and take note of the ones they have to think or count to answer. (This is about seeing if your student understands the concept of subtraction - if they can answer from memory, this is a plus, but not absolutely necessary.)

\[
\begin{align*}
10 - 2 &= 8 \\
8 - 3 &= 5 \\
6 - 2 &= 4 \\
9 - 7 &= 2 \\
10 - 5 &= 5 \\
9 - 5 &= 4 \\
10 - 8 &= 2 \\
7 - 4 &= 3 \\
6 - 5 &= 1
\end{align*}
\]

Section three: (The student should make no more than 1 mistake on each of this point.)
Teacher, have your student narrate to you the relationship between addition and subtraction. Do not help or coach your student at all. It is extremely important that they understand the relationship between these two operations. If your student has done well on the other parts of this placement test, but does not understand this concept of relationship, please take a few minutes to use manipulatives to show them with the hands-on/visual/auditory approach. If they are not understanding this concept easily and are not able to narrate back to you as they show you with the manipulatives, they are not ready for Book 2.
Instructions for grading are found at the beginning of each section. **If your student understands all the concepts on the Level 3 Placement Test, they are ready to begin Math Lessons for a Living Education Level 3.** Please do not place an unprepared student in this book, as it will only frustrate them and inhibit them from learning.

**Section one:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Fill in the chart correctly.

<table>
<thead>
<tr>
<th></th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,011</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>1</td>
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<tr>
<td>792</td>
<td></td>
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<td>2</td>
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<td>4,009</td>
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<td>8,178</td>
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<tr>
<td>2,060</td>
<td>2</td>
<td>0</td>
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</tr>
</tbody>
</table>

**Point 2:** Look at the numbers in the chart above. Color each even number, green. Color each odd number, blue.

**Point 3:** What numbers do odd numbers end in? **1, 3, 5, 7, 9**

What numbers do even numbers end in? **2, 4, 6, 8, 0**
Section two: (The student should make no more than 2 mistakes on each of these points.)

Point 1: Write the correct time shown on each clock.

- 4:55
- 5:47
- 8:12
- 6:02
- 9:31

Point 2: Count the money and write the correct amount.

- $4.20
- $10.03
- $12.65
- $101.99
**Point 3:** Find the perimeter of each shape.

- **Square:** $2 + 2 + 2 + 2 = 8$ inches
- **Rectangle:** $3 + 1 + 3 + 1 = 8$ inches

**Point 4:** Add and subtract.

<p>| | | | | | |</p>
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<thead>
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<tbody>
<tr>
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<td>-21</td>
<td>-65</td>
<td>-26</td>
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<tr>
<td>32</td>
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<td>13</td>
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<td>23</td>
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<tr>
<td>+50</td>
<td>+61</td>
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<td></td>
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</tr>
<tr>
<td>122</td>
<td>239</td>
<td></td>
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</tr>
</tbody>
</table>

**Point 5:** Measure these lines. Write the length.

- $\star$ ____________ $3$ inches
- $\star$ ____________ $2$ inches
- $\star$ ____________ $5$ inches
Instructions for grading are found at the beginning of each section. If your student understands all the concepts on the Level 4 Placement Test, they are ready to begin *Math Lessons for a Living Education Level 4*. Please do not place an unprepared student in this book, as it will only frustrate them and inhibit them from learning.

**Section one:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Add and Subtract.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
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<td>3,290</td>
<td>823,197</td>
<td>329,528</td>
<td>56,291</td>
<td></td>
</tr>
<tr>
<td>5,198</td>
<td>+</td>
<td>9,229</td>
<td>+</td>
<td>29,510</td>
<td>-</td>
</tr>
<tr>
<td>+</td>
<td>3,210</td>
<td></td>
<td>852,707</td>
<td></td>
<td>296,529</td>
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<tr>
<td></td>
<td></td>
<td>12,519</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Point 2:** Round these numbers to the nearest 10.  

| 23 | 20 |
| 891 | 890 |
| 466 | 470 |
| 138 | 140 |

Round these numbers to the nearest 100.

| 189 | 200 |
| 2,345 | 2,300 |
| 982 | 1,000 |
| 312 | 300 |

Round these numbers to the nearest 1,000.

| 3,780 | 4,000 |
| 12,428 | 12,000 |
| 9,621 | 10,000 |
| 13,289 | 13,000 |
Point 3: Complete this multiplication chart.

<table>
<thead>
<tr>
<th>x</th>
<th>1</th>
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<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

Point 4: Narrate to your teacher the relationship between multiplication and division. Use manipulatives to demonstrate your understanding.
(Note to the teacher: this point is a make or break. If your student does not understand multiplication and division well enough to confidently and clearly narrate to you the relationship between multiplication and division, seriously consider placing them in the previous book in this series.)
Section two: (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Find the area. Write the equations for each one.

\[ 2 \times 2 = 4 \text{ sq. in} \]
\[ 4 \times 4 = 16 \text{ sq. in} \]
\[ 6 \times 3 = 18 \text{ sq. in} \]

**Point 2:** Correctly divide and color each circle to show the fraction written under each one.

\[
\begin{align*}
\frac{1}{2} & \quad \frac{3}{4} & \quad \frac{2}{5} & \quad \frac{5}{6} \\
\frac{4}{7} & \quad \frac{3}{8} & \quad \frac{1}{3}
\end{align*}
\]

**Point 3:** Solve these word problems.

There were 32 tulips at the flower stand. If 4 ladies bought an equal number of the tulips, how many tulips did they each buy?

\[ 32 \div 4 = 8 \]
The family drove 126 miles before lunch. After lunch, they drove 253. How many more miles did they drive in the afternoon than in the morning? How many miles did they drive in the morning and the afternoon together?

\[
253 - 126 = 127 \quad \text{or} \quad 126 + 253 = 379
\]

**Point 4:** Solve these problems.

Circle groups of 3.

\[
\frac{1}{6} \text{ of } 18 = 3 \quad \text{or} \quad 6 \times 3 = 18
\]

Circle groups of 5.

\[
\frac{1}{2} \text{ of } 10 = 5 \quad \text{or} \quad 2 \times 5 = 10
\]

Circle groups of 4.

\[
\frac{1}{3} \text{ of } 12 = 4 \quad \text{or} \quad 3 \times 4 = 12
\]

**Point 5:** Write the Roman Numeral for each number.

<table>
<thead>
<tr>
<th>Number</th>
<th>Roman Numeral</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>10</td>
<td>X</td>
</tr>
<tr>
<td>50</td>
<td>L</td>
</tr>
<tr>
<td>100</td>
<td>C</td>
</tr>
<tr>
<td>1,000</td>
<td>M</td>
</tr>
</tbody>
</table>
Instructions for grading are found at the beginning of each section. If your student understands all the concepts on the Level 5 Placement Test, they are ready to begin Math Lessons for a Living Education Level 5. Please do not place an unprepared student in this book, as it will only frustrate them and inhibit them from learning.

**Section one:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1:** Add and Subtract.

\[
\begin{align*}
289,591 & \quad 871,097,921 & \quad 890,573 \\
429,398 & + 1,349,029 & + 449,977 \\
129,510 & & 88,458,821 \\
& & 1,340,550 \\
848,499 & & \\
23,369,219 & - 57,259 & 23,311,960 \\
& & 332,990 \\
\end{align*}
\]

**Point 2:** Multiply

\[
\begin{align*}
45 \times 33 & = 1,485 \\
85 \times 41 & = 3,485 \\
93 \times 55 & = 5,115 \\
72 \times 29 & = 2,088 \\
25 \times 12 & = 300 \\
\end{align*}
\]

**Divide.**

\[
\begin{align*}
4 \div 9 & = 2 \text{ r.1} \\
3 \div 8 & = 2 \text{ r.2} \\
5 \div 6 & = 1 \text{ r.1} \\
\end{align*}
\]
**Point 3: Word Problems**

The toy shop had 2,872 boomerangs in stock for the Christmas sale. After the sale, there were 1,988 boomerangs still in stock. The store decided to place half of the boomerangs on the clearance shelves, and donate the other half to a missions organization. How many boomerangs were donated to the missions organization? When the boomerangs were delivered to the missions organization, they were equally packaged in two large boxes. How many were in each box? When the workers at the organization opened one of the boxes, they found that a dozen boomerangs had been damaged in the shipment. How many boomerangs were undamaged in that box?

\[ 1,988 \div 2 = 994 \text{ donated to missions} \]
\[ 994 \div 2 = 497 \text{ in each box} / 497 - 12 = 485 \text{ undamaged} \]

**Point 4: Add and subtract these fractions.**

\[ \frac{3}{7} + \frac{2}{7} = \frac{5}{7} \quad 2\frac{2}{5} + 1\frac{1}{5} = 3\frac{3}{5} \quad 3\frac{5}{9} + 2\frac{1}{9} = 5\frac{6}{9} \]

\[ \frac{3}{11} + \frac{6}{11} = \frac{9}{11} \quad 6\frac{2}{3} - 4\frac{1}{3} = 2\frac{1}{3} \quad \frac{5}{12} - \frac{4}{12} = \frac{1}{12} \]

\[ \frac{8}{13} - \frac{5}{13} = \frac{3}{13} \quad 11\frac{9}{10} - 8\frac{3}{10} = 3\frac{6}{10} \]

**Section two: (The student should make no more than 2 mistakes on each of these points.)**

**Point 1:** Multiply top and bottom of each of these fractions by 3 to find equivalent fractions.

\[ \frac{2}{5} = \frac{6}{15} \quad \frac{1}{3} = \frac{3}{9} \quad \frac{5}{8} = \frac{15}{24} \quad \frac{4}{7} = \frac{12}{21} \]

**Point 2:** Find equivalent fractions by dividing each fraction by 4.

\[ \frac{4}{12} = \frac{1}{3} \quad \frac{32}{40} = \frac{8}{10} \quad \frac{20}{28} = \frac{5}{7} \]

\[ \frac{40}{48} = \frac{10}{12} \quad \frac{12}{36} = \frac{3}{9} \quad \frac{16}{24} = \frac{4}{6} \]
**Point 3: Multiply**

<table>
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<td>108</td>
<td>120</td>
<td>132</td>
<td>144</td>
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</tbody>
</table>
Instructions for grading are found at the beginning of each section. If your student understands all the concepts on the Level 6 Placement Test, they are ready to begin *Math Lessons for a Living Education Level 6*. Please do not place an unprepared student in this book, as it will only frustrate them and inhibit them from learning.

**Section One:** (The student should make no more than 2 mistakes on each of these points.)

**Point 1: Addition and Subtraction**

1. \[
\begin{array}{c}
285,230 \\
+ 199,967 \\
\hline
485,197
\end{array}
\]

2. \[
\begin{array}{c}
19,002 \\
+ 7,139 \\
\hline
26,141
\end{array}
\]

3. \[
\begin{array}{c}
800,045 \\
- 697,999 \\
\hline
102,046
\end{array}
\]

4. \[
\begin{array}{c}
8,999 \\
- 2,999 \\
\hline
6,000
\end{array}
\]

**Point 2: Multiplication and Division**

5. \[
\begin{array}{c}
412,678 \\
\times 3,312 \\
\hline
1,366,789,536
\end{array}
\]

6. \[
\begin{array}{c}
812 \\
\times 88 \\
\hline
71,456
\end{array}
\]

7. \[
\begin{array}{c}
2,103 \\
5,678,1 \\
\hline
0
\end{array}
\]

8. \[
\begin{array}{c}
2,004 \\
115,230,542 \\
\hline
82
\end{array}
\]

9. \[
\begin{array}{c}
2,004 \\
115,230,542 \\
\hline
82
\end{array}
\]

10. \[
\begin{array}{c}
2,004 \\
115,230,542 \\
\hline
82
\end{array}
\]

11. \[
\begin{array}{c}
2,004 \\
115,230,542 \\
\hline
82
\end{array}
\]

12. \[
\begin{array}{c}
2,004 \\
115,230,542 \\
\hline
82
\end{array}
\]
Section Two: (The student should make no more than 2 mistakes on each of these points.)

Point 3: Story problem. Explain and show your teacher every step of this story problem.

9. A road trip is 2,540 miles long. One quarter of those miles were through mountainous terrain. Explain to your teacher how you would go about finding the number of miles that are through mountainous terrain. Write that number here: 635

\[
\begin{array}{c}
4 \quad 2,540 \\
6 \quad 5 \quad 4 \quad 0 \\
\hline
- 4 \quad 5 \\
- 1 \quad 8 \quad 5 \\
\hline
- 1 \quad 8 \quad 0 \\
- 5
\end{array}
\]

If you drove those miles through mountainous terrain at an average speed of 45 miles per hour, how many hours would it take you to drive through the mountainous terrain (explain and write your answer here). 14

Point 4: Place Value

Circle the digits.

10. In the ten's place: 317,002 299 512 899,982

11. In the ten-thousand's place: 23,009,167 66,451 173,900

12. In the million's place: 431,229,501 99,223,147 1,000,332

13. a. Now tell your teacher what each of the circled digits stand for.
   b. Read the numbers to your teacher.

Section Three: (The student should make no more than 2 mistakes on each of these points.)

Point 5: Fractions and Mixed Numbers (Watch those denominators!) Explain and show.

14. \[\frac{1}{2} + \frac{2}{4} + \frac{3}{5} = \frac{6}{5}\]

15. \[4 \frac{2}{5} - 2 \frac{1}{5} = 2 \frac{2}{5}\]

16. \[\frac{7}{14} - \frac{5}{7} = \frac{2}{14}\]
Point 6:
Circle the decimal or percent that matches the fraction. Explain and show your teacher as you solve each problem.

17. \(\frac{1}{2}\):  
   - 40% and 0.4
   - 20% and 0.2
   - \(\text{50\% and 0.5}\)

18. \(\frac{3}{4}\):  
   - 34% and 3.4
   - 43% and 4.3
   - \(75\% \text{ and 0.75}\)

19. \(\frac{1}{4}\):  
   - 22% and 0.22
   - \(25\% \text{ and 0.25}\)
   - 14% and 0.14

20. \(\frac{1}{5}\):  
   - 15% and 0.15
   - \(20\% \text{ and 0.2}\)
   - \(51\% \text{ and 0.51}\)

Section Four: (The student should make no more than 2 mistakes on each of these points.)

Point 7: Geometry

Find the perimeter of each shape.

21. \(2 \text{ miles} + 3 \text{ miles} + 4 \text{ miles} = 9 \text{ miles}\)

22. \(4 \text{ in.} + 2 \text{ in.} + 4 \text{ in.} + 2 \text{ in.} = 12 \text{ inches}\)

23. \(1.2 \text{ cm} + 1.2 \text{ cm} + 1.2 \text{ cm} + 1.2 \text{ cm} = 4.8 \text{ cm}\)

24. Find the area of the rectangle in problem 22. 
   \(2 \times 4 = 8 \text{ square inches}\)

25. Explain the difference between the perimeter and the area of a shape.  
   Area: the measurement of the inside of a shape.  
   Perimeter: the distance around (or outside of) a shape.