

Placement Test Level (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.

Level 6 Placement Test

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.
$$\begin{array}{r} 285,230 \\ + 199,967 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 19,002 \\ + 7,139 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 800,045 \\ - 697,999 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 10,000 \\ - 2,999 \\ \hline \end{array}$$

Point 2: Multiplication and Division

5.
$$\begin{array}{r} 412,678 \\ \times 3,312 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 812 \\ \times 88 \\ \hline \end{array}$$

7.
$$27 \overline{) 56,781}$$

8.
$$115 \overline{) 230,542}$$

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.

14.
$$\begin{array}{r} \frac{1}{2} \\ + \frac{1}{4} \\ \hline \end{array}$$

15.
$$\begin{array}{r} 6\frac{3}{5} \\ - 2\frac{1}{5} \\ \hline \end{array}$$

16.
$$\begin{array}{r} 7\frac{6}{14} \\ - 5\frac{2}{7} \\ \hline \end{array}$$

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

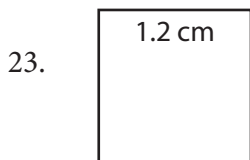
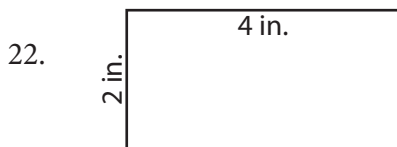
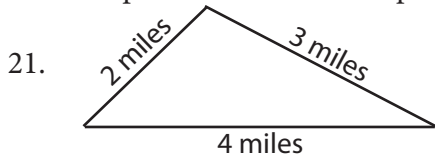
19. $\frac{1}{4}$: 22% and 0.22 25% and 0.25 14% and 0.14

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.



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

25. Explain the difference between the perimeter and the area of a shape.

Level 6 Placement Solutions

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

$$1. \begin{array}{r} 111 \\ 285,230 \\ + 199,967 \\ \hline 485,197 \end{array}$$

$$2. \begin{array}{r} 1 \quad 1 \\ 19,002 \\ + 7,139 \\ \hline 26,141 \end{array}$$

$$3. \begin{array}{r} 799,913 \\ 800,045 \\ - 697,999 \\ \hline 102,046 \end{array}$$

$$4. \begin{array}{r} 9 \quad 991 \\ 10,000 \\ - 2,999 \\ \hline 7,001 \end{array}$$

Point 2: Multiplication and Division

$$5. \begin{array}{r} 412,678 \\ \times \quad 3,312 \\ \hline 825356 \\ 4126780 \\ 123803400 \\ +1238034000 \\ \hline 1,366,789,536 \end{array}$$

$$6. \begin{array}{r} 812 \\ \times \quad 88 \\ \hline 6496 \\ + 64960 \\ \hline 71,456 \end{array}$$

$$7. \begin{array}{r} 2,103 \\ 27 \overline{) 56,781} \\ \underline{-54} \\ 27 \\ \underline{-27} \\ 081 \\ \underline{-81} \\ 0 \end{array}$$

$$8. \begin{array}{r} 2,004 \text{ R.82} \\ 115 \overline{) 230,542} \\ \underline{-230} \\ 0 \cancel{4} 2 \\ \underline{-460} \\ 82 \end{array}$$

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

$$\begin{array}{r} 635 \\ 4 \overline{) 2,540} \end{array}$$

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

$$\begin{array}{r} 14 \\ 45 \overline{) 635} \\ \underline{-45} \\ 185 \\ \underline{-180} \\ 5 \end{array}$$

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.

14.
$$\begin{array}{r} \frac{1}{2} \\ + \frac{1}{4} \\ \hline \frac{3}{4} \end{array} \quad \begin{array}{r} \frac{2}{4} \\ + \frac{1}{4} \\ \hline \frac{3}{4} \end{array}$$

15.
$$\begin{array}{r} 6\frac{3}{5} \\ - 2\frac{1}{5} \\ \hline 4\frac{2}{5} \end{array}$$

16.
$$\begin{array}{r} 7\frac{6}{14} \\ - 5\frac{2}{7} \\ \hline 2\frac{2}{14} \end{array} \quad \begin{array}{r} 7\frac{6}{14} \\ - 5\frac{4}{14} \\ \hline 2\frac{2}{14} \end{array}$$

Point 6:

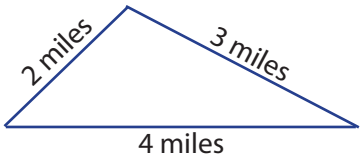
Circle the decimal or percent that matches the fraction. Explain and show your teacher as you solve each problem.

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.  **$2 + 3 + 4 = 9$ miles**

22.  **$4 + 2 + 4 + 2 = 12$ inches**

23.  **$1.2 + 1.2 + 1.2 + 1.2 = 4.8$ cm**

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

$2 \times 4 = 8$ 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.