MATH LESSONS FOR A LIVING EDUCATION

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.

Level 1 Placement Test

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)

Level 2 Placement Test

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.

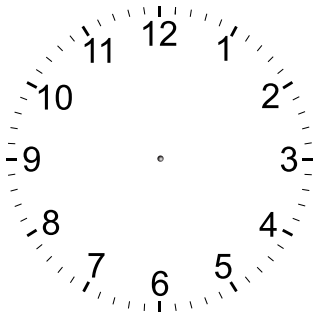
☐ In the number 236, what does 6 stand for?
a) six groups of ten
b) six groups of one
c) six groups of one hundred

☐ 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

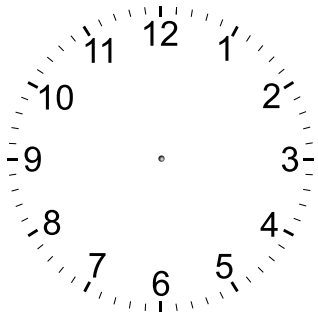
☐ In the number 236, what does 2 stand for?
a) two groups of ten
b) two groups of one
c) two groups of one hundred

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.



3:00



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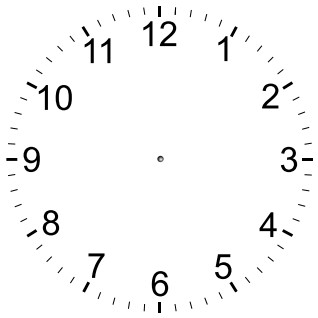
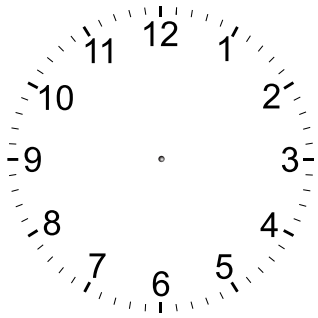


11:00



7:00

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.)

2 + 8 =	4 + 2 =	4 + 5 =
3 + 2 =	9 + 1 =	4 + 4 =
6 + 3 =	2 + 3 =	8 + 2 =

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.)

10 - 2 =	8 - 3 =	6 - 2 =
9 - 7 =	10 - 5 =	9 - 5 =
10 - 8 =	7 - 4 =	6 - 5 =

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 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.

Level 3 Placement Test

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.

	Thousands	Hundreds	Tens	Ones
6,011				
792				
4,009				
8,178				
2,060				

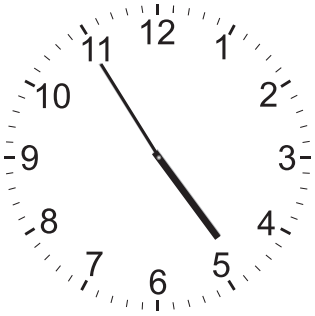
Point 2: Look at the numbers in the chart above. Color each even number, green. Color each odd number, blue.

Point 3: What numbers do odd numbers end in? _____

What numbers do even numbers end in? _____

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.



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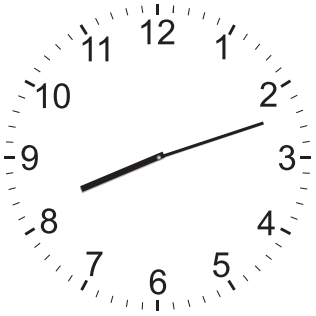

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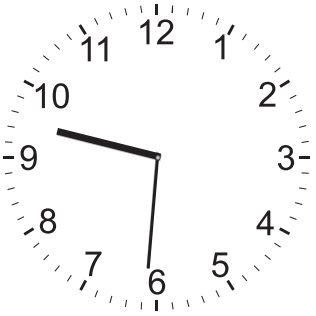

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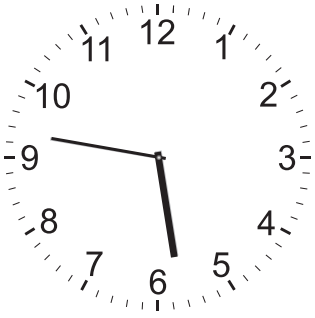

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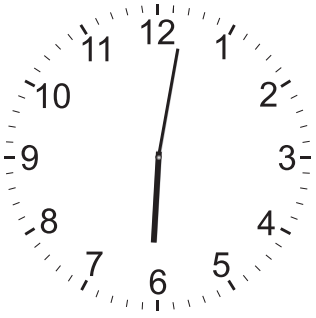


_____

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

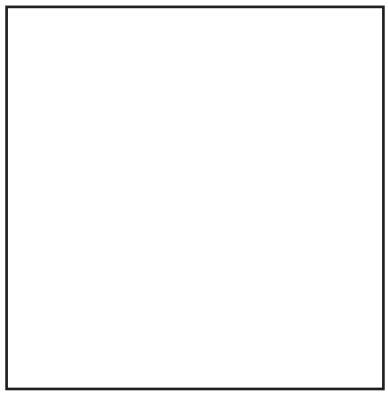
_____

_____

_____

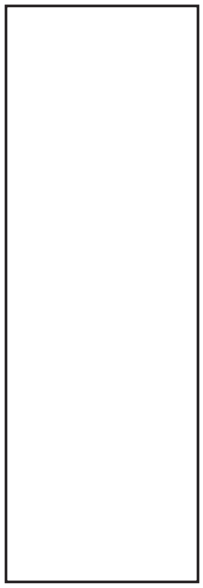
_____

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.

$$\begin{array}{r} 28 \\ 12 \\ 32 \\ +\ 50 \\ \hline \end{array} \qquad \begin{array}{r} 41 \\ 99 \\ 38 \\ +\ 61 \\ \hline \end{array} \qquad \begin{array}{r} 344 \\ -\ 217 \\ \hline \end{array} \qquad \begin{array}{r} 872 \\ -\ 653 \\ \hline \end{array} \qquad \begin{array}{r} 498 \\ -\ 269 \\ \hline \end{array}$$

Point 5: Measure these lines. Write the length.

☆ _____

☆ _____

☆ _____

Level 4 Placement Test

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.

4,561	3,290	823,197	329,528	56,291
5,198	+ 9,229	+ 29,510	- 32,999	- 13,897
+ 3,210				

Point 2: Round these numbers to the nearest 10.

23

891

466

138

Round these numbers to the nearest 100.

189

2,345

982

312

Round these numbers to the nearest 1,000.

3,780

12,428

9,621

13,289

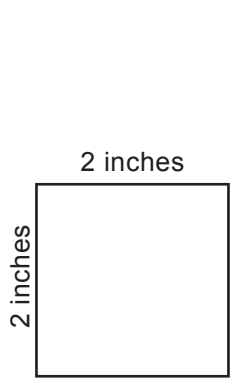
Point 3: Complete this multiplication chart.

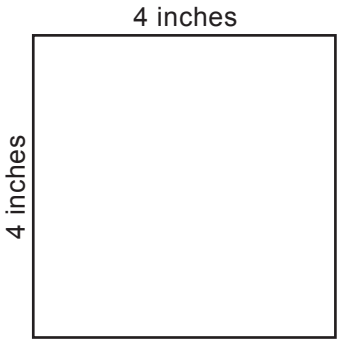
x	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

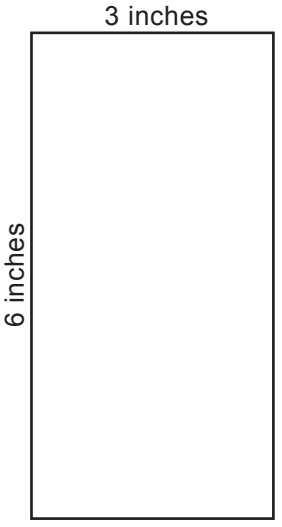
Point 4: Narrate to your teacher the relationship between multiplication and division. Use manipulatives to demonstrate your understanding.
(Note to the teacher: this point is a make or break. If your student does not understand multiplication and division well enough to confidently and clearly narrate 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.

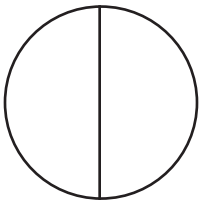




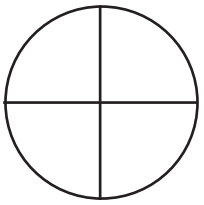


_____ _____ _____

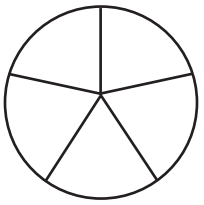
Point 2: Correctly divide and color each circle to show the fraction written under each one.



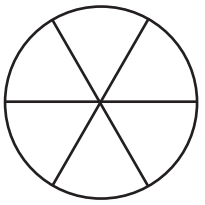
$\frac{1}{2}$



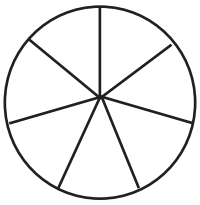
$\frac{3}{4}$



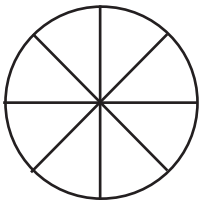
$\frac{2}{5}$



$\frac{5}{6}$



$\frac{4}{7}$



$\frac{3}{8}$

$\frac{1}{3}$

Point 3: Solve these word problems.

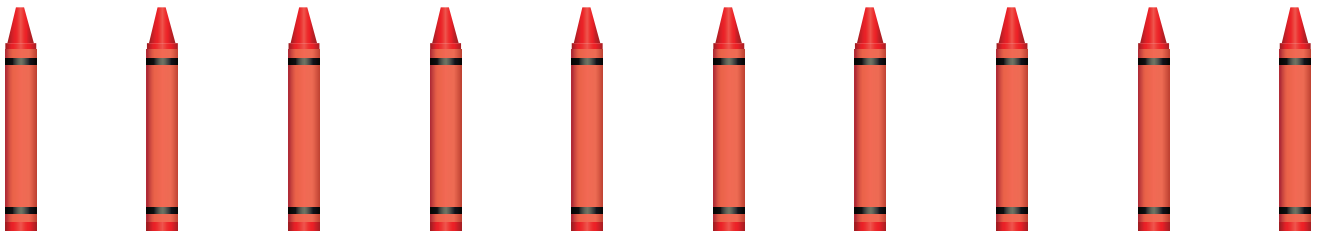
There were 32 tulips at the flower stand. If 4 ladies bought an equal number of the tulips, how many tulips did they each buy?

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. $\frac{1}{6}$ of 18 = 6 x ____ = 18

Circle groups of 5. $\frac{1}{2}$ of 10 = 2 x ___ = 10



Circle groups of 4. $\frac{1}{3}$ of 12 = 3 x _____ = 12

Point 5: Write the Roman Numeral for each number.

1 _____

5 _____

10 _____

50 _____

100 _____

1,000 _____

Level 5 Placement Test

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.

$$\begin{array}{r} 289{,}591 \\ 429{,}398 \\ +\ 129{,}510 \\ \hline \end{array} \qquad \begin{array}{r} 87{,}109{,}792 \\ +\ 1{,}349{,}029 \\ \hline \end{array} \qquad \begin{array}{r} 890{,}573 \\ +\ 449{,}977 \\ \hline \end{array}$$

$$\begin{array}{r} 23{,}369{,}219 \\ -\ 57{,}259 \\ \hline \end{array} \qquad \begin{array}{r} 566{,}773 \\ -\ 233{,}783 \\ \hline \end{array}$$

Point 2: Multiply

$$\begin{array}{r} 45 \\ \times\ 33 \\ \hline \end{array} \qquad \begin{array}{r} 85 \\ \times\ 41 \\ \hline \end{array} \qquad \begin{array}{r} 93 \\ \times\ 55 \\ \hline \end{array} \qquad \begin{array}{r} 72 \\ \times\ 29 \\ \hline \end{array} \qquad \begin{array}{r} 25 \\ \times\ 12 \\ \hline \end{array}$$

Divide.

$$4\overline{)9} \qquad 3\overline{)8} \qquad 5\overline{)6}$$

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

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

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. $27\overline{)5{,}681}$

8. $115\overline{)23{,}542}$

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. $\frac{1}{2} + \frac{1}{4}$

15. $6\frac{3}{5} - 2\frac{1}{5}$

16. $7\frac{6}{14} - 5\frac{2}{7}$

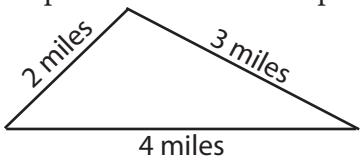
Point 6:
Circle the decimal or percent that matches the fraction. Explain and show your teacher as you solve each problem.

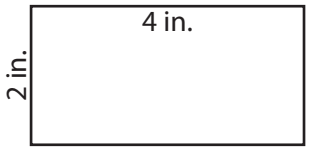
17. $\frac{1}{2}$:	40% and 0.4	20% and 0.2	50% and 0.5
18. $\frac{3}{4}$:	34% and 3.4	43% and 4.3	75% and 0.75
19. $\frac{1}{4}$:	22% and 0.22	25% and 0.25	14% and 0.14
20. $\frac{1}{5}$:	15% and 0.15	20% and 0.2	51% and 0.51

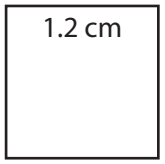
Section Four: (The student should make no more than 2 mistakes on each of these points.)

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.

Level 1 Placement Solutions

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)

Level 2 Placement Solutions

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.

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.

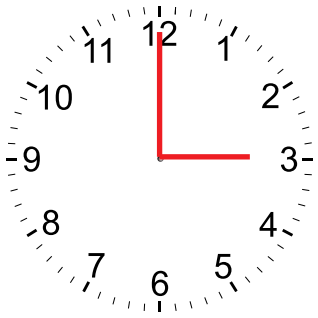
☐ In the number 236, what does 6 stand for? (b)
a) six groups of ten
b) six groups of one
c) six groups of one hundred

☐ 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

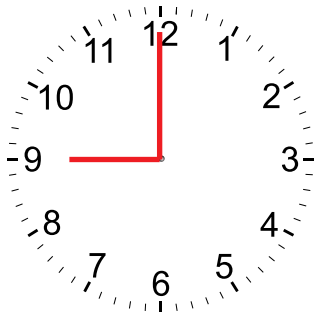
☐ In the number 236, what does 2 stand for? (c)
a) two groups of ten
b) two groups of one
c) two groups of one hundred

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

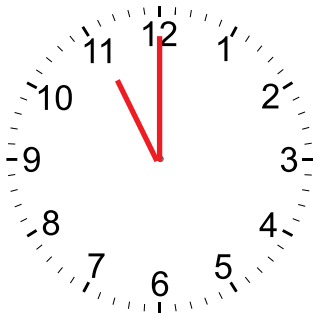
Point 1: Teacher have your student draw hands on these clocks to show the correct time.



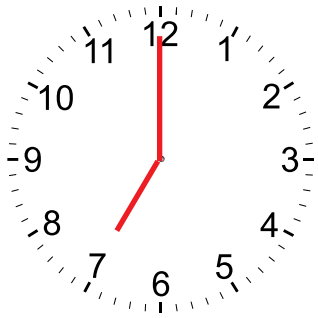
3:00



9:00



11:00



7:00

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.)

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

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.)

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

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 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.

Level 3 Placement Solutions

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.

	Thousands	Hundreds	Tens	Ones
6,011	6	0	1	1
792		7	9	2
4,009	4	0	0	9
8,178	8	1	7	8
2,060	2	0	6	0

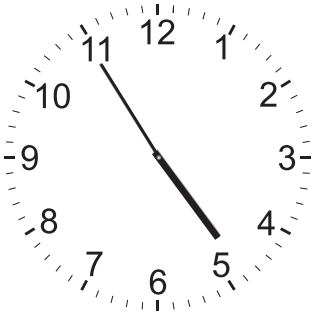
Point 2: Look at the numbers in the chart above. Color each even number, green. Color each odd number, blue.

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

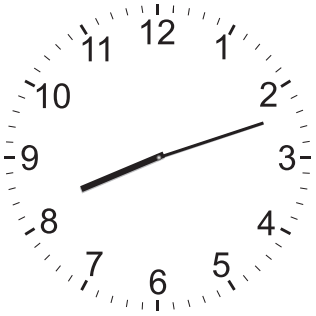
What numbers do even numbers end in? 2, 4, 6, 8, 0

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

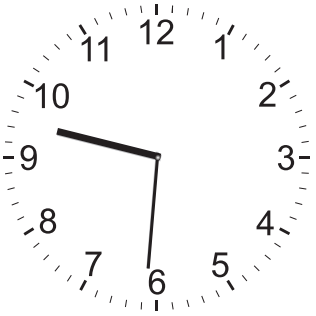
Point 1: Write the correct time shown on each clock.



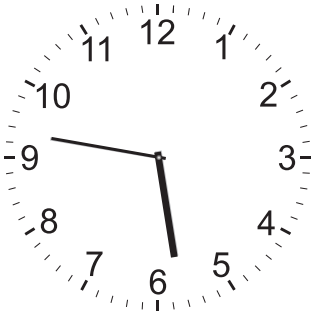
4:55



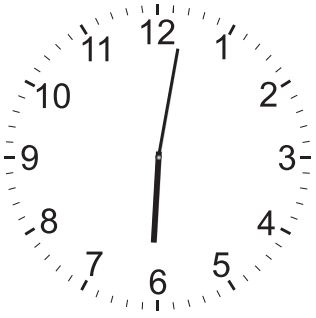
8:12



9:31



5:47



6:02

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

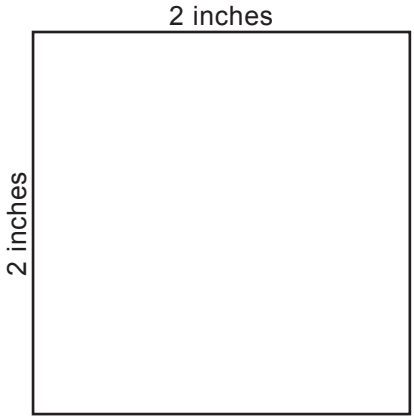
$4.20

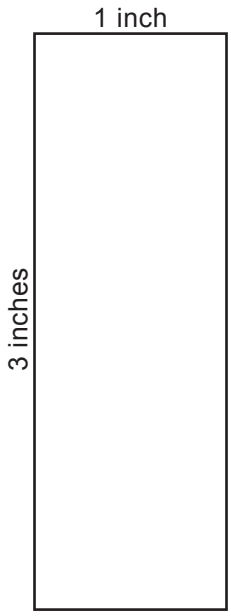
$10.03

$12.65

$101.99

Point 3: Find the perimeter of each shape.





2 + 2 + 2 + 2 = 8 inches

3 + 1 + 3 + 1 = 8 inches

Point 4: Add and subtract.

$$\begin{array}{r} {\scriptstyle 1} \\ 28 \\ 12 \\ 32 \\ +\ 50 \\ \hline 122 \end{array} \qquad \begin{array}{r} {\scriptstyle 1} \\ 41 \\ 99 \\ 38 \\ +\ 61 \\ \hline 239 \end{array} \qquad \begin{array}{r} {\scriptstyle 3\,1} \\ 3\cancel{4}4 \\ -\ 217 \\ \hline 127 \end{array} \qquad \begin{array}{r} {\scriptstyle 6\,1} \\ 8\cancel{7}2 \\ -\ 653 \\ \hline 219 \end{array} \qquad \begin{array}{r} {\scriptstyle 8\,1} \\ 49\cancel{8} \\ -\ 269 \\ \hline 229 \end{array}$$

Point 5: Measure these lines. Write the length.

☆ _____ 3 inches

☆ _____ 2 inches

☆ _____ 5 inches

Level 4 Placement Solutions

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.

1	1	1 1	2 8 14 11	5 11 18
4,561	3,290	823,197	329,528	56,291
5,198	+ 9,229	+ 29,510	- 32,999	- 13,897
+ 3,210	12,519	852,707	296,529	42,394
12,969				

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

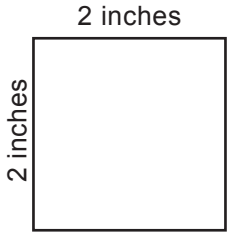
Point 3: Complete this multiplication chart.

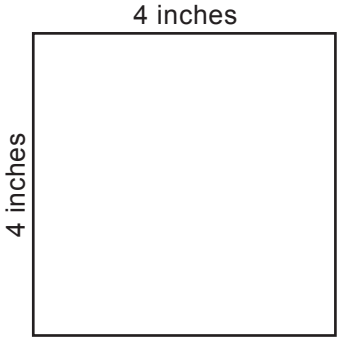
x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

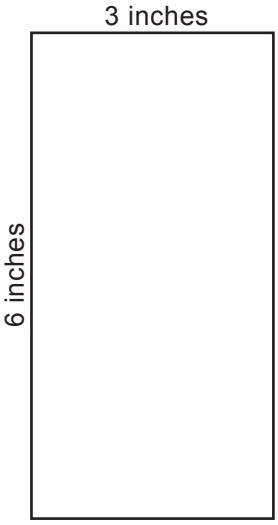
Point 4: Narrate to your teacher the relationship between multiplication and division. Use manipulatives to demonstrate your understanding.
(Note to the teacher: this point is a make or break. If your student does not understand multiplication and division well enough to confidently and clearly narrate 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.





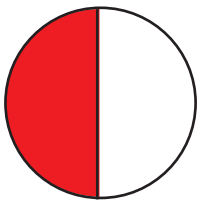


2 x 2 = 4 sq. in

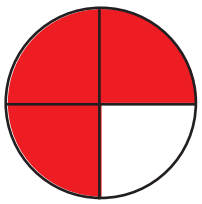
4 x 4 = 16 sq. in

6 x 3 = 18 sq. in

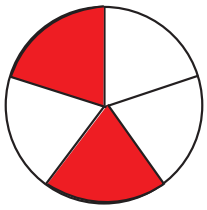
Point 2: Correctly divide and color each circle to show the fraction written under each one.



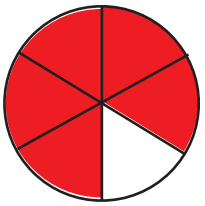
$\frac{1}{2}$



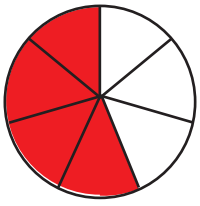
$\frac{3}{4}$



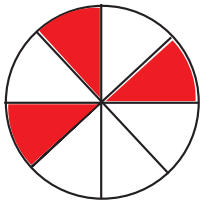
$\frac{2}{5}$



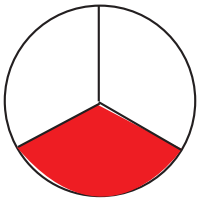
$\frac{5}{6}$



$\frac{4}{7}$



$\frac{3}{8}$



$\frac{1}{3}$

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?

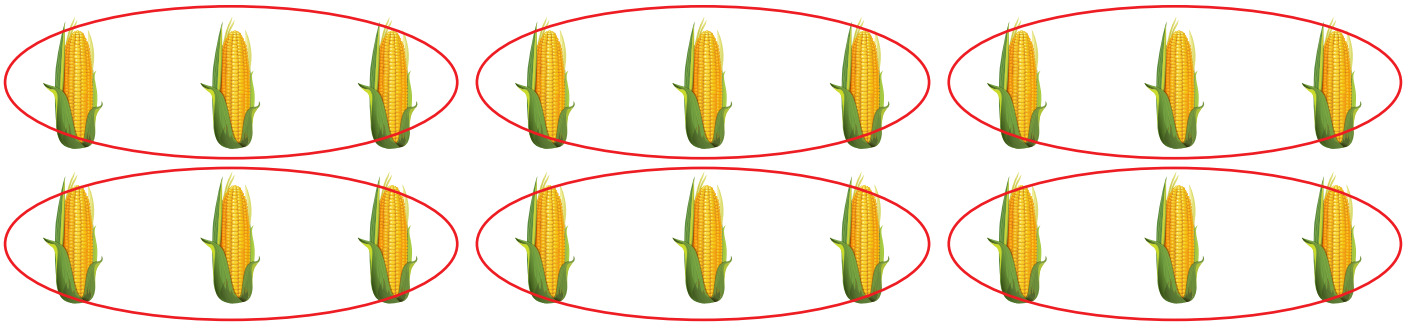
32 ÷ 4 = 8

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?

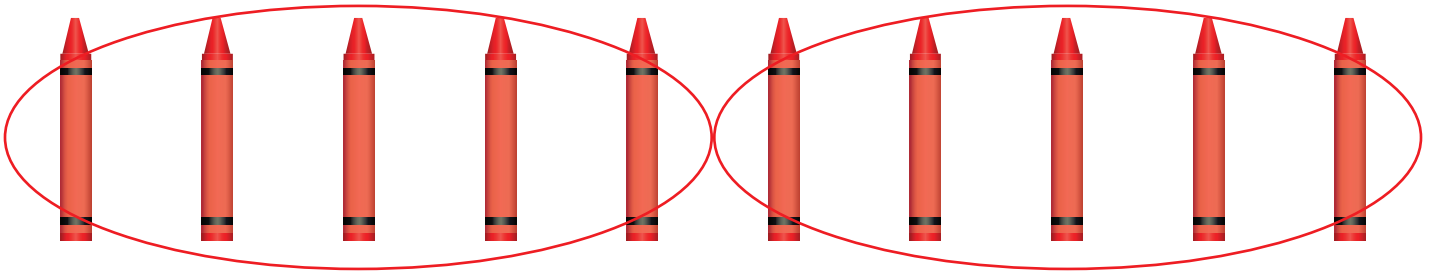
253 - 126 = 127 / 126 + 253 = 379

Point 4: Solve these problems.

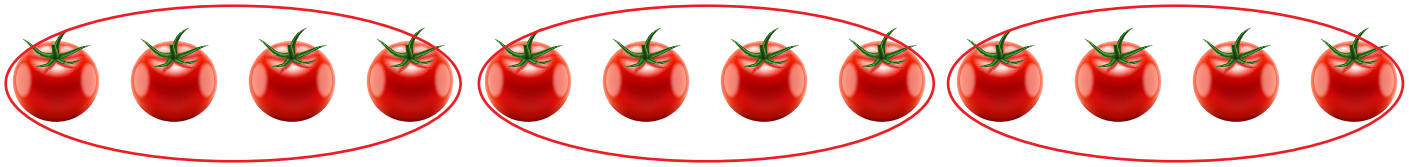
Circle groups of 3. $\frac{1}{6}$ of 18 = 3 6 x 3 = 18



Circle groups of 5. $\frac{1}{2}$ of 10 = 5 2 x 5 = 10



Circle groups of 4. $\frac{1}{3}$ of 12 = 4 3 x 4 = 12



Point 5: Write the Roman Numeral for each number.

1	I
5	V
10	X
50	L
100	C
1,000	M

Level 5 Placement Solutions

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.

```
  1 2 1 1
  289,591
  429,398
+ 129,510
  848,499

    1   11
  87,109,792
+ 1,349,029
  88,458,821

  1 1 1  11
  890,573
+ 449,977
  1,340,550

    8 11
  23,369,219
-     57,259
  23,311,960

    5 16 1
  566,773
-  233,783
  332,990
```

Point 2: Multiply

```
    1
   45
 x 33
  135
+1350
 1,485

    2
   85
 x 41
  85
+3400
 3,485

    1
   93
 x 55
  465
+4650
 5,115

    1
   72
 x 29
  648
+1440
 2,088

    1
   25
 x 12
  50
+250
 300
```

Divide.

```
    2 r.1
4 ) 9
  -8
   1

    2 r.2
3 ) 8
  -6
   2

    1 r.1
5 ) 6
  -5
   1
```

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 ÷ 2 = 994 donated to missions

994 ÷ 2 = 497 in each box / 497 - 12 = 485 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 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

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

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.
```
  111
  285,230
+ 199,967
-------
  485,197
```

2.
```
   1  1
  19,002
+  7,139
-------
  26,141
```

3.
```
  799 913 1
  800,045
- 697,999
-------
  102,046
```

4.
```
   9  99 1
  10,000
-  2,999
-------
   7,001
```

Point 2: Multiplication and Division

5.
```
    412,678
x     3,312
-----------
    825356
   4126780
  123803400
+1238034000
-----------
1,366,789,536
```

6.
```
   812
x   88
------
  6496
+64960
------
 71,456
```

7.
```
          2,103
      ------------
27 | 56,781
     -54
     ---
       27
      -27
      ---
        081
       -81
       ---
          0
```

8.
```
          2,004 R.82
      ------------
115 | 230,542
     -230
     ----
        0 5 14 2
       -460
       ----
          82
```

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

$$4\overline{)2,540} \quad 635$$

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

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

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. $\frac{1}{2} + \frac{1}{4}$ $\quad \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

15. $6\frac{3}{5} - 2\frac{1}{5} = 4\frac{2}{5}$

16. $7\frac{6}{14} - 5\frac{2}{7}$ $\quad 7\frac{6}{14} - 5\frac{4}{14} = 2\frac{2}{14}$

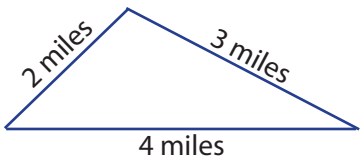
Point 6:
Circle the decimal or percent that matches the fraction. Explain and show your teacher as you solve each problem.

17. $\frac{1}{2}$:	40% and 0.4	20% and 0.2	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

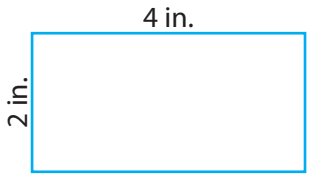
Section Four: (The student should make no more than 2 mistakes on each of these points.)

Point 7: Geometry

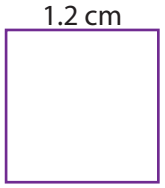
Find the perimeter of each shape.

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 x 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.