Math Mammoth Placement Test, Grades 1-3

This test is is meant to help you gauge whether your student(s) would generally speaking place in Math Mammoth grade 1, 2, or 3. It covers only the most important math topics (the four operations and some geometry and fractions) while omitting some of the lesser topics (measurement, time, money, and most of geometry).

The student is supposed to do all the questions they are able to, and just leave the rest blank. In other words, the student does not have to finish the test, but should do however much they can, in each section. The test is measuring the student's abilities in several grade levels all at once. If they are able to do nearly all the questions, they will not place to Math Mammoth grades 1-3, but to Grade 4 or above.

Note 1: If the child cannot read, the teacher can read the questions.

Note 2: Problems #1, #2, and #3 are done orally and timed. Let the student see the problems. Read each problem aloud, and wait a maximum of 5 seconds for an answer. Mark the problem as right or wrong according to the student's (oral) answer. Mark it wrong if there is no answer. Then you can move on to the next problem.

You do not have to mention to the student that the problems are timed or that he/she will have 5 seconds per answer, because the idea here is not to create extra pressure by the fact it is timed, but simply to check if the student has the facts memorized (quick recall). You can say for example (vary as needed):

"*I will ask you some math questions. Try to answer them as quickly as possible. In each question, I will only wait a little while for you to answer, and if you don't say anything, I will move on to the next problem. So just try your best to answer the questions as quickly as you can, and not to worry*."

Grading

Fill in the student's scores on the following pages. Calculate the totals for each grade level separately.
If the student gets **85% or more** for the questions from a particular grade, they can be placed to the *next* grade in Math Mammoth.

- If the student gets at least 12 out of 14 from the Kindergarten topics, they can be placed to MM Grade 1.
- If the student gets at least 47 out of 55 from the 1st grade topics (not including geometry), they can be placed to MM Grade 2.
- If the student gets at least 47 out of 55 from the 2nd grade topics (not including geometry), they can be placed to MM Grade 3.
- If the student gets at least 61 out of 62 from the 3rd grade topics (not including geometry or fractions), or 76 points out of 89.5 (including geometry and fractions), they can be placed to MM Grade 4 (or above). For placing a student into MM grade 4, I recommend you do take geometry and fractions into account, or at least geometry.

If the student gets **60-84%** correct, consider filling in the gaps and then placing them to the next grade.

If the student gets **less than 60%**, it may be advisable to place them to that grade level. But use your judgment and consider if some of the errors were due to nervousness or carelessness rather than not understanding the concept or skill.

Kindergarten topics

Question	Max. points	Student score
Basic Concepts		
4	1	
5	3	
6	1	
7	1	
8	2	
Adding and Subtracting with Mental Math		
21	6	
Add all the above to get the student's score for Kindergarten.		
K subtotal		/14

Grade 1 topics

Question	Max. points	Student score
Math Facts		
1 abcd	12 points	
2 abcd	12 points	
Basic Concepts		
9	4	
10	2	
Place Value		
15a	1	
16a	1	
17a	1	
18ab	2	
20ab	2	
Adding and Subtracting with Mental Math		
22	6	
23	6	
Word Problems		
30ab	4	
31	2	
Add all the above points to get the student's score for the major topics of 1st grade.		
Grade 1 subtotal (no geometry)		/55
Geometry (optional)		
44a	1	
45a	1	
subtotal with geometry		/57

Grade 2 topics

Question	Max. points	Student score
Math Facts		
1 efgh	12 points	
2 efgh	12 points	
Place Value		
15b	1	
16b	1	
17bc	2	
18c	1	
19a	1	
20cdef	4	
Adding and Subtracting with Mental Math		
24	6	
Adding and Subtracting in Columns		
26abc	3	
27	2	
29a	2	
Word Problems		
32	2	
33	2	
34	2	
35	2	
Add all the above points to get the student's score for the major topics of 2nd grade.		
Grade 2 subtotal (no geometry or fractions)		/55
Geometry (optional)		
44b	1	
Fractions (optional)		
48	2	
49ab	2	
subtotal with geometry & fractions		/60

Grade 3 topics

Question	Max. points	Student score
Math Facts		
3	16 points	
Basic Concepts		
11	1	
12	1	
13	1	
14	4	
Place Value		
15c	1	
16cd	2	
17d	1	
18d	1	
19b	1	
20gh	1	
Adding and Subtracting with Mental Math		
25	6	
Adding and Subtracting in Columns		
26d	1	
28	2	
29b	2	
Word Problems		
36	3	
37a	1	
37b	1	
38	3	
Multiplication and Division		
39	2	
40	6	
41	3	
42	6	
43	6	
Add all the points so far to get the student's score for the major topics of 3rd grade.		
Grade 3 subtotal (no geometry or fractions)		/72

Question	Max. points	Student score
Geometry (optional)		
45bc	2	
46	2	
47	2	
Fractions (optional)		
49c	1	
50	3	
51	2	
52	3	
53	2.5	
Grade 3 subtotal with geometry & fractions		/89.5

Math Mammoth Placement Test

Math Facts

In problems 1, 2 and 3, your teacher will read you some math questions. Try to answer them as quickly as possible. In each question, your teacher will only wait a little while for you to answer, and if you don't say anything, your teacher will move on to the next problem. So, just try your best to answer and not worry about it! (Worrying will make your brain freeze up and you will remember less than usual.)

1. Add.

a.	**b.**	**c.**	**d.**
4 + 4 = _____	7 + 3 = _____	6 + 2 = _____	5 + 5 = _____
1 + 6 = _____	5 + 4 = _____	4 + 6 = _____	2 + 8 = _____
2 + 7 = _____	1 + 7 = _____	2 + 5 = _____	5 + 3 = _____
e.	**f.**	**g.**	**h.**
6 + 7 = _____	8 + 7 = _____	5 + 7 = _____	9 + 5 = _____
9 + 9 = _____	7 + 4 = _____	8 + 8 = _____	8 + 6 = _____
5 + 6 = _____	3 + 9 = _____	4 + 8 = _____	8 + 9 = _____

2. Subtract.

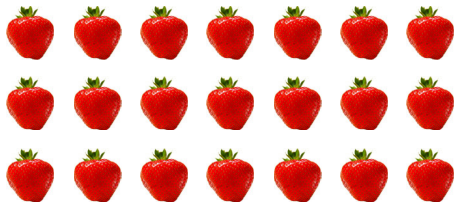
a.	**b.**	**c.**	**d.**
8 – 3 = _____	7 – 4 = _____	7 – 3 = _____	10 – 3 = _____
10 – 6 = _____	9 – 6 = _____	4 – 3 = _____	5 – 4 = _____
8 – 7 = _____	6 – 3 = _____	10 – 7 = _____	9 – 7 = _____
e.	**f.**	**g.**	**h.**
12 – 3 = _____	11 – 3 = _____	16 – 8 = _____	13 – 4 = _____
15 – 7 = _____	12 – 8 = _____	12 – 4 = _____	15 – 6 = _____
13 – 6 = _____	14 – 6 = _____	16 – 7 = _____	12 – 6 = _____

3. Multiply.

a.	b.	c.	d.
$2 \times 7 =$ _____	$7 \times 4 =$ _____	$3 \times 3 =$ _____	$7 \times 8 =$ _____
$8 \times 3 =$ _____	$5 \times 8 =$ _____	$4 \times 4 =$ _____	$6 \times 5 =$ _____
$5 \times 5 =$ _____	$3 \times 9 =$ _____	$7 \times 7 =$ _____	$8 \times 6 =$ _____
$9 \times 4 =$ _____	$5 \times 7 =$ _____	$4 \times 8 =$ _____	$6 \times 9 =$ _____

Basic Concepts

4. Make a group of nineteen strawberries.



5. Write the number that is 1 more.

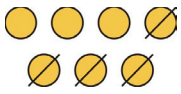
a. 7 _____	**b.** 9 _____	**c.** 16 _____

6. Write the number 17 as a sum of 10 and some other number. You can draw dots to help you.

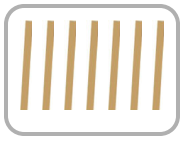
17 = _____ + _____

7. Write a subtraction sentence to match the picture.

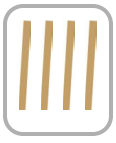
_____ – _____ = _____



8. Draw another group of sticks so that you will get 10 in total. Write an addition.

a. 

_____ + _____ = _____

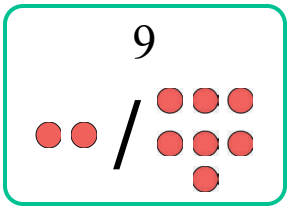
b. 

_____ + _____ = _____

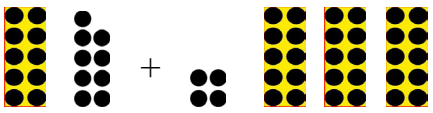
9. Write a fact family to match the picture.

_____ + _____ = _____ _____ + _____ = _____

_____ – _____ = _____ _____ – _____ = _____



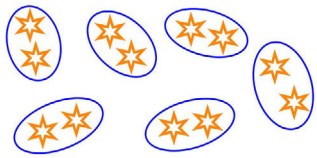
10. Write an addition to match the picture.



_____ + _____ = _____

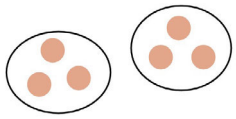
11. Write a multiplication sentence for the picture.

_____ × _____ = _____



12. Write a division sentence for the picture.

_____ ÷ _____ = _____

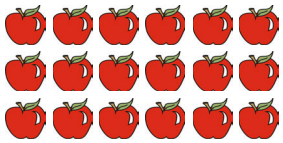


13. Write a <u>multiplication</u> from the addition, and solve.

5 + 5 + 5

_____ × _____ = _____

14. Write two multiplications and two divisions for the same picture.



____ × ____ = _____ _____ ÷ ____ = ____

____ × ____ = _____ _____ ÷ ____ = ____

Place Value

15. Write the number that has...

a. 7 ones and 3 tens	**b.** 6 tens 2 hundreds 7 ones	**c.** 4 tens 7 thousands

16. These numbers are written as sums. Write them in the normal way.

a. 5 + 80 =	**b.** 90 + 200 + 4 =
c. 300 + 7,000 =	**d.** 2 + 40 + 8,000 =

17. Fill in the missing part.

a. 95 = 5 + _____	**b.** 825 = 5 + _____ + 800
c. 6 + _____ = 206	**d.** 700 + 20 + _____ + 9 = 2,729

18. Compare the numbers. Write < or > in the box.

a. 48 ☐ 84 **b.** 70 ☐ 17 **c.** 519 ☐ 155 **d.** 5,156 ☐ 5,516

19. Write the numbers in order from the smallest to the greatest.

a. 417 714 447	**b.** 8,009 9,098 8,909 990

20. Add and subtract. Do not use column addition or subtraction.

a. 68 + 10 = _____	**b.** 90 – 30 = _____	**c.** 150 – 30 = _____
d. 560 + 40 = _____	**e.** 520 – 200 = _____	**f.** 362 + 30 = _____
g. 5,400 + 300 = _____	**h.** 2,950 – 10 = _____	

Adding and Subtracting with Mental Math

21. Add and subtract.

a. 4 + 1 = _____ 2 + 2 = _____	**b.** 0 + 5 = _____ 5 – 1 = _____	**c.** 3 – 2 = _____ 4 – 3 = _____

22. Fill in the missing numbers.

a. 2 + _____ = 7	**b.** 8 = _____ + 1	**c.** _____ = 3 + 6
d. 6 – _____ = 4	**e.** 5 = _____ – 2	**f.** _____ – 3 = 4

23. Add and subtract in your head. Do not use column addition or subtraction.

a. 84 + 4 = _____ 6 + 53 = _____	**b.** 55 – 3 = _____ 50 – 2 = _____	**c.** 100 – 4 = _____ 52 + 40 = _____

24. Add and subtract in your head. Do not use column addition or subtraction.

a. 59 + 8 = _____ 45 + 9 = _____	**b.** 54 – 23 = _____ 99 + 50 = _____	**c.** 52 – 37 = _____ 59 + 89 = _____

25. Add and subtract in your head. Do not use column addition or subtraction.

a. 100 – 67 = _____ 651 – 8 = _____	**b.** 540 + 80 = _____ 335 + 9 = _____	**c.** 240 + 70 = _____ 400 – 22 = _____

Adding and Subtracting in Columns

26. Add and subtract.

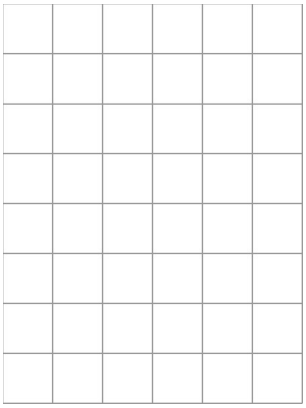
a.
$$\begin{array}{r} 35 \\ 36 \\ +\ 12 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 61 \\ -\ 37 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 970 \\ -\ 248 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 1238 \\ 4017 \\ +\ 2993 \\ \hline \end{array}$$

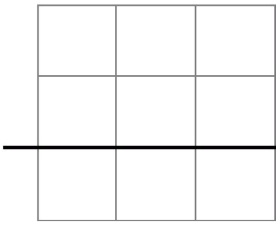
27. Add $438 + 17 + 293$ in the grid.



28. Subtract. Then check your answer by adding.

$$\begin{array}{r} 703 \\ -\ 546 \\ \hline \end{array}$$

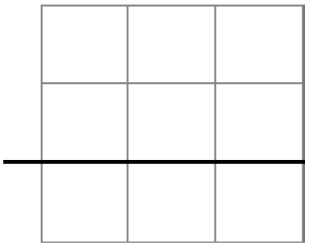
Check:



29. Solve for the unknown number.

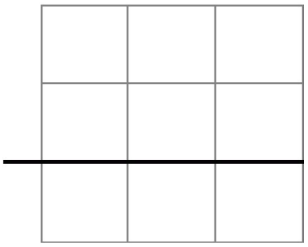
a. $38 + \triangle = 72$

$\triangle$ is _____



b. $x - 339 = 485$

x is _____



Word Problems

30. Robert has 12 toy cars and Luis has 7.

    a. How many cars do the boys have together?

    b. How many more cars does Robert have than Luis?

31. Andy drew eight stars. Then he drew three more stars and yet later, five more stars. How many stars did Andy draw?

32. Mary picked 5 apples and Bill picked 9. The children shared all of their apples evenly. How many did each child get?

33. Ed had saved $16. Then grandma gave him $10. Now how much more does he need in order to buy a toolset for $32?

34. Mr. Anderson has 450 chickens in his farm. Of them, 126 are old and the rest are young. How many chickens are young?

35. The distance from Mark's home to his grandma's house is 218 miles. How many miles long is a round trip?

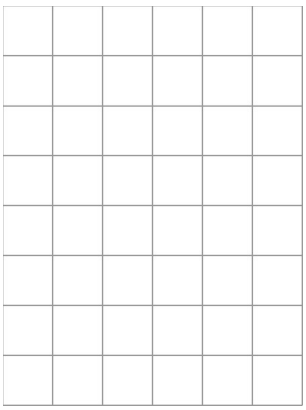
36. A family is driving 300 miles from their hometown to Grandma's place. 10 miles before the half-way point they stopped to have lunch. How many miles do they still have to go?

37. Eric earns $78 each week. He wants to purchase a phone for $459.

a. Round these numbers to the nearest ten.

b. Use the rounded numbers, and estimate in how many weeks he could buy the phone.

38. Jason wants to buy a $545 camera and a $52 camera bag. Right now, he has saved $310. Your task is to find out how much more money he needs.



Multiplication and Division

39. Write a calculation (NOT just the answer) to solve how many legs these animals have in total.

a. seven horses _____

b. eight horses and six ducks _____

40. Fill in the missing numbers.

a. $50 \div$ _____ $= 5$	**b.** $6 \times$ _____ $= 48$	**c.** $64 \div$ _____ $= 8$
d. $5 = 45 \div$ _____	**e.** $20 = 4 \times$ _____	**f.** _____ $\div 5 = 8$

41. Solve.

a. $3 \times 25 =$ _____	**b.** $80 \times 3 =$ _____	**c.** $6 \times 50 =$ _____

42. Solve. Write an equation (a calculation) for each problem.

a. Pat wants to have three rolls for each of her 12 guests. How many rolls does she need?

Equation: _____ She needs _____ rolls.

b. Each table in a restaurant seats four people. How many tables do you need to reserve for a party of 32 people?

Equation: _____ You need _____ tables.

c. A cafeteria menu had spaghetti with meatballs for $8 and bean soup for $6. How much would it cost to buy three plates of spaghetti with meatballs and three bowls of bean soup?

Equation: _____ It would cost $_____.

43. Solve. Write an equation (a calculation) for each problem.

a. Anna is bagging hair clips she made. She will put four hair clips in each bag. She has 28 hair clips to bag. How many bags will she need?

_____

She will need _____ bags.

b. Camila, Leo, and Daniel decided to buy a gift that cost $16 and flowers that cost $14 for Mom. The children shared the total cost equally. How much did each child pay?

_____

Each child paid $_____.

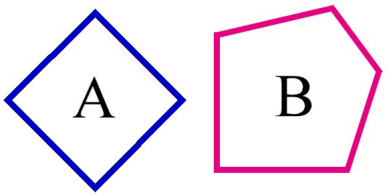
c. Each minibus holds ten passengers. There are six full minibuses, and one with one empty seat. How many passengers are there in total?

_____

There are _____ passengers.

Geometry (*This section is optional.)*

44. Identify the shapes.



Shape A: _____

Shape B: _____

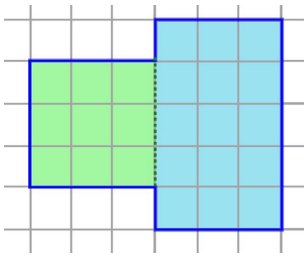
45. Draw (freehand, sketching) a figure as indicated.
(Your figure does not have to be accurate but just a sketch.)

a. A triangle that doesn't have any equal sides.

b. A quadrilateral that has four right angles,
and not all its sides are equal.

c. A rhombus that doesn't have any right angles.

46. Find the perimeter and area of this shape.



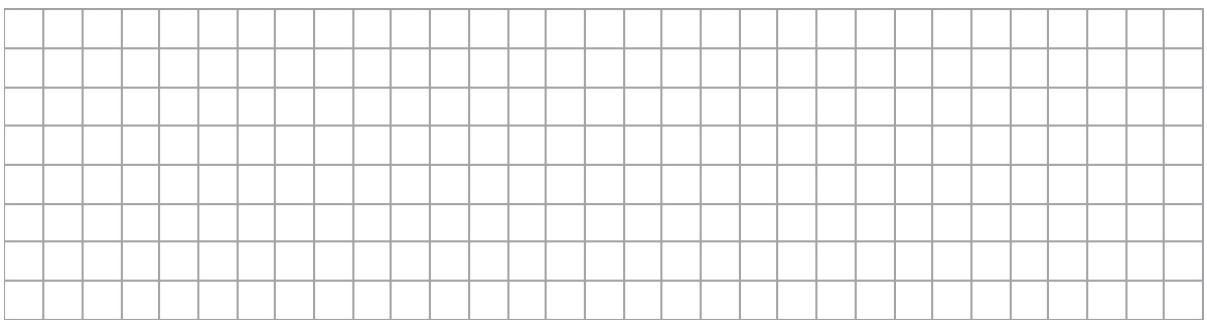
Perimeter: _____

Area : _____

47. Draw in the grid below:

a. a rectangle with an area of 15 square units;

b. a rectangle with a perimeter of 10 units.

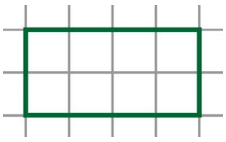


Fractions *(This section is optional.)*

48. Divide these shapes. Then color as you are asked to.

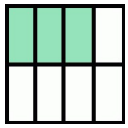
a. 

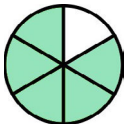
Divide the shape into thirds.
Color $\frac{2}{3}$.

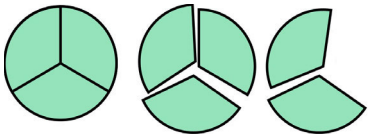
b. 

Divide the shape into halves.
Color $\frac{2}{2}$.

49. Write the fraction.

a.  ____

b.  ____

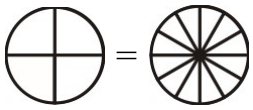
c.  ____

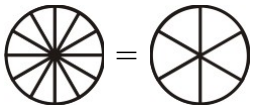
50. Mark these fractions on the number line: $\frac{5}{3}$, $\frac{9}{3}$, $\frac{11}{3}$.

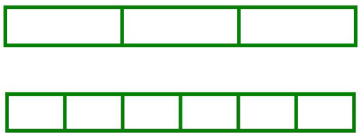
51. Circle the fractions that are equal to some whole number.

$\frac{6}{4}$ $\frac{8}{8}$ $\frac{2}{8}$ $\frac{13}{3}$ $\frac{24}{4}$ $\frac{20}{6}$

52. Write an equivalent fraction. You can color pieces in the illustration.

a.  $\frac{3}{4} = \frac{\quad}{\quad}$

b.  $\frac{10}{12} = \frac{\quad}{\quad}$

c. $\frac{2}{3} = \frac{\quad}{\quad}$ 

53. Compare the fractions, and write >, <, or = in the box.

a. $\frac{2}{8} \square \frac{2}{3}$ **b.** $\frac{5}{10} \square \frac{7}{10}$ **c.** $\frac{6}{3} \square 2$ **d.** $\frac{1}{6} \square \frac{1}{8}$ **e.** $\frac{3}{6} \square \frac{1}{2}$