End-of-the-Year Test Grade 4
International Version

This test is quite long, so I don't recommend that you have your child/student do it in one sitting. Break it into parts and administer them over several days. Use your judgement.

This test works as a diagnostic test. So, you may even skip those areas and concepts that you already know for sure your student has mastered.

The test does not cover every single concept that is covered in the *Math Mammoth Grade 4 Complete Curriculum*, but all of the major concepts and ideas are tested here. This test is evaluating the student’s ability in the following content areas:

- addition and subtraction
- early algebraic thinking
- the order of operations
- graphs
- large numbers and place value
- rounding and estimating
- multi-digit multiplication
- word problems
- some basic conversions between measuring units
- measuring length
- time calculations
- long division
- the concept of remainder
- factors
- area and perimeter
- measuring and drawing angles
- classifying triangles according to their angles
- adding and subtracting fractions and mixed numbers (like fractional parts)
- equivalent fractions
- comparing fractions
- multiplying fractions by whole numbers
- the concept of a decimal (tenths/hundredths)
- comparing decimals

In order to continue with *Math Mammoth Grade 5 Complete Curriculum*, I recommend that the student gain a **minimum score of 80%** on this test, and that the teacher or parent revise with him any content areas in which the student is weak. Students scoring between 70% and 80% may also go on to grade 5, depending on the types of errors (careless errors or not remembering something, versus the lack of understanding). The most important content areas to master are multi-digit multiplication, long division, place value and word problems. Again, use your judgement.
A calculator is not allowed. My suggestion for grading is below. The total is 185 points. A score of 148 points is 80%.

<table>
<thead>
<tr>
<th>Question</th>
<th>Max. points</th>
<th>Student score</th>
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<td><strong>TOTAL</strong></td>
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</table>
1. Subtract. Check by adding.

\[
5200 - 2677 - 543 \quad \text{Add to check:}
\]

2. a. Round the prices to the nearest dollar. Use the rounded prices to estimate the total cost.

   Crackers $2.25; cheese $8.90; jam $4.75; butter $9.30.

b. Now, use the exact prices (not rounded prices). Mrs. Grayson bought the items listed above and paid with $50. How much was her change?
3. Estimate the cost of buying five notebooks for $2.85 each and two pencil cases for $3.25 each.

4. Calculate in the right order.

\[
\begin{align*}
\text{a. } 3 \times (4 + 6) &= ____

\text{b. } 3 \times 3 + 8 \div 4 &= ____

\text{c. } 20 \times 3 + 80 \div 1 &= ____

100 - 4 \times 4 &= ____

(7 - 3) \times 3 + 2 &= ____

15 + 2 \times (8 - 6) &= ____
\end{align*}
\]

5. Circle the number sentence that fits the problem. Then solve for \(x\).

\[
\begin{align*}
\text{a. Alicia had } &$35. \text{ Then she earned some money } (x). \text{ Now she has } $92. \\
&$35 + x = $92 \quad \text{OR} \quad $35 + $92 = x

&x = ________

\text{b. Mike baked cookies and gave 24 of them to a friend and now he has 37 cookies left.}

&37 - 24 = x \quad \text{OR} \quad x - 24 = 37

&x = ________
\end{align*}
\]

6. a. Continue this pattern for four more numbers:

\[
2000 \quad 1750 \quad 1500 \quad 1250
\]

b. Write a list of six numbers that follows this pattern: Start at 200, and add 300 each time.

7. These are the quiz scores for several students. 2 5 8 7 6 6 7 10 4 7 7 8 6 8 5 9 8 6 6 5 7 9

Make a frequency table and a bar graph.

<table>
<thead>
<tr>
<th>Quiz score</th>
<th>Frequency</th>
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</tbody>
</table>
8. Write an addition or a subtraction with an unknown (x or ?). Solve it. The bar model can help.

A doll used to cost $27.95 but now the price is $21.45. How much is the discount?

______________________________
______________________________

Large Numbers and Place Value

9. Subtract from whole thousands.

a. 2 000 − 1 = ______

b. 5 000 − 20 = ______

c. 6 000 − 300 = ______

10. Write the numbers in normal form.

a. 800 thousand 50

b. 25 thousand 4 hundred 7

11. Find the missing numbers.

a. 30 550 = 50 + __________ + 500

b. 809 100 = 800 000 + 100 + ________

c. 725 608 = 20 000 + 700 000 + 8 + __________ + 5 000

12. Compare, writing <, > or = between the numbers.

a. 54 500 < 55 400

b. 108 882 < 108 828

c. 71 600 > 61 700

13. Write the numbers in order from the smallest to the greatest:

217 200 227 712 27 200 227 200

14. Round the numbers as the dashed line indicates (to the underlined digit).

a. 43\underline{6} 102 ≈

b. 89\underline{7} 56 ≈

c. 27 5\underline{2} 9 ≈

15. Round to the nearest ten thousand.

a. 426 889 ≈

b. 495 304 ≈

c. 7 345 ≈
16. Calculate. Line up all the digits carefully.

a. \(476\,708 + 24\,392 + 563\) 

b. \(405\,112 - 81\,424\)

17. Multiply, and find the missing factors.

a. \(70 \times 3 = \underline{\hspace{2cm}}\) 
b. \(6 \times 800 = \underline{\hspace{2cm}}\) 
c. \(40 \times 80 = \underline{\hspace{2cm}}\) 
d. \(\underline{\hspace{2cm}} \times 3 = 360\) 
e. \(50 \times \underline{\hspace{2cm}} = 4\,000\) 
f. \(\underline{\hspace{2cm}} \times 300 = 21\,000\)

18. Tom earns $20 per hour.

a. How much will he earn in an 8-hour workday? _______________________________________

b. How much will he earn in a 40-hour workweek? ______________________________________

c. How many days will he need to work in order to earn at least $600? ______________________

19. Multiply. Estimate the answer on the line.

a. \(5 \times 196\) 

\(\approx \underline{\hspace{2cm}}\)

b. \(35 \times 38\) 

\(\approx \underline{\hspace{2cm}}\)

c. \(7 \times 3\,188\) 

\(\approx \underline{\hspace{2cm}}\)

d. \(89 \times 22\) 

\(\approx \underline{\hspace{2cm}}\)
20. Write the area of the whole rectangle as a SUM of the areas of the smaller rectangles. Lastly, add to find the total area.

\[
\text{Area} = 8 \times 127 \\
= \_\_ \times \_\_ + \_\_ \times \_\_ + \_\_ \times \_\_.
\]

21. Solve the problems. Write a number sentence or several for each problem.

a. Work out the change, if Susan buys 26 books for $14 each, and pays with $400.

b. How many minutes are there in a day (24 hours)?

c. One side of a square is 375 cm. What is its perimeter?

d. Schoolbags costing $277 are discounted by $58. Aunt Patricia buys eight for presents. What is the total cost?
Time and Measuring

22. Measure the lines in centimetres and millimetres.

a. _____ cm _____ mm

b. _____ cm _____ mm

23. How much time passes from 10:54 a.m. to 5:06 p.m.?

24. Lyle kept track of how long it took him to do his homework:

<table>
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<tr>
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<th>Monday</th>
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<th>Wednesday</th>
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<th>Sunday</th>
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<tbody>
<tr>
<td></td>
<td>1 h 45 min</td>
<td>50 min</td>
<td>1 h 15 min</td>
<td>2 h 15 min</td>
<td>55 min</td>
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</table>

How much time did he spend with homework in total?

______________________________

25. A teacher started her workday at 7:00 am, and stopped it at 3:35 pm. But in between, she had a 45-minute lunch break, and another break of 20 minutes. How many hours/minutes did she actually work?
26. Convert between the different measuring units.

<table>
<thead>
<tr>
<th>a.</th>
<th>b.</th>
<th>c.</th>
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<tbody>
<tr>
<td>2 kg = __________ g</td>
<td>5 L 200 ml = __________ ml</td>
<td>8 cm 2 mm = __________ mm</td>
</tr>
<tr>
<td>11 kg 600 g = __________ g</td>
<td>3 m = __________ cm</td>
<td>10 km = __________ m</td>
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</table>

27. George jogs daily on a track through the woods that is 3 km 800 m long. What is the total distance he runs in four days?

28. Bonnie drank 350 ml of a 2-litre bottle of water. How much is left?

29. The long sides of a rectangle measure 5 m 20 cm, and the short sides are 3 m 4 cm. What is the perimeter? ______ m ______ cm

---

**Division and Factors**

30. Divide. Check each problem by multiplying.

| a. 567 ÷ 9 | Check: |
| b. 8 564 ÷ 4 | Check: |
31. Solve.

\[ a. \ 47 \div 5 = \_ \_ \_ \_ \_ \_ \text{R} \_ \_ \_ \_ \_ \_ \_ \ \]  
\[ b. \ 25 \div 3 = \_ \_ \_ \_ \_ \_ \text{R} \_ \_ \_ \_ \_ \_ \_ \]  
\[ c. \ 57 \div 9 = \_ \_ \_ \_ \_ \_ \text{R} \_ \_ \_ \_ \_ \_ \_ \]  

32. Solve.

a. Amanda put 48 photographs into an online photo album. On each page she could fit nine photos.

How many photographs were on the last page?

How many pages were full?

b. If you buy a 15-metre roll of chain-link fence that costs $255, and then you sell 3 metres of it to your neighbour, how much should your neighbour pay?

33. Solve.

a. Mitch had saved $264. He spent \( \frac{3}{8} \) of it to buy a book. How much did the book cost?

b. Mary packed 117 muffins into bags of six. How many bags does Mary need for them?
34. Mark with an X if the number is divisible by the given numbers.

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35. Fill in.

a. Is 5 a factor of 60?
   _____, because ____ × ____ = ________.

b. Is 7 a divisor of 43?
   _____, because ____ ÷ ____ = ___________.

c. Is 96 divisible by 4?
   _____, because ________________________.

d. Is 34 a multiple of 7?
   _____, because ________________________.

36. List three prime numbers.

37. Find all the factors of the given numbers.

a. 56
   factors: ________________________

b. 78
   factors: ________________________

Geometry

38. Measure this angle.
39. Draw below an angle of 65°.

40. Draw below any obtuse triangle, and measure its angles.

41. Write an addition sentence about the angle measures. Use an unknown \(x\) for one angle measure.

Then solve it.
42. Sketch here any rectangle. Then draw one diagonal line in it (a line from corner to corner). What kind of triangles are formed?

43. Draw two line segments that are perpendicular to each other.

44. Draw as many different symmetry lines as you can into this shape.

45. This picture shows the floor of a room with a carpet on the floor. The room itself measures 9 metres by 4 metres. The carpet is 2 metres by 3 metres. Find the area of floor outside the carpet (not including the carpet).
46. Write an addition to match the picture:

47. Emma did 1/4 of a puzzle, and Mum did another fourth of it. How much of the puzzle is still left to do?

48. Add and subtract. Give your final answer as a whole number or as a mixed number if possible.

\[
\begin{array}{ccc}
a. \dfrac{4}{5} + \dfrac{3}{5} &=& b. 1 \dfrac{1}{6} - \dfrac{2}{6} &=& c. 3 \dfrac{6}{8} + 2 \dfrac{2}{8} &=& \\
\end{array}
\]

49. Split the existing pieces. Fill in the missing parts.

\[
\begin{array}{c}
a. Each piece is split into 2 new ones. \\
\dfrac{4}{5} &=& \\
b. Each piece is split into ____ new ones. \\
\dfrac{6}{9} &=& \\
\end{array}
\]

50. Write the equivalent fractions.

\[
\begin{array}{cccc}
a. \dfrac{2}{3} &=& \dfrac{9}{15} & b. \dfrac{3}{5} &=& \dfrac{9}{12} & c. \dfrac{1}{6} &=& \dfrac{11}{12} & d. \dfrac{1}{3} &=& \dfrac{5}{12} \\
\end{array}
\]

51. Compare the fractions.

\[
\begin{array}{cccc}
a. \dfrac{2}{3} & \dfrac{3}{8} & b. \dfrac{6}{5} & \dfrac{7}{8} & c. \dfrac{11}{12} & \dfrac{11}{10} & d. \dfrac{1}{3} & \dfrac{5}{12} \\
\end{array}
\]

52. Write these fractions in order, from the smallest to the greatest: \(\dfrac{5}{4}, \dfrac{7}{10}, \dfrac{65}{100}\)
53. Fill in.

\[
\begin{align*}
\text{a. } \frac{3}{8} &= 3 \times \frac{\quad}{\quad} \\
\text{b. } 4 \times \frac{2}{5} &= \\
\text{c. } 7 \times \frac{2}{12} &= 
\end{align*}
\]

54. Mark on the number line the following decimals: 0.55 0.08 0.27 0.80

![Number line with marked decimals](image)

55. Write the fractions and mixed numbers as decimals.

\[
\begin{align*}
\text{a. } \frac{3}{10} &= \\
\text{b. } 3 \frac{9}{10} &= \\
\text{c. } \frac{9}{100} &= \\
\text{d. } 7 \frac{45}{100} &= 
\end{align*}
\]

56. Write the decimals as fractions or mixed numbers.

\[
\begin{align*}
\text{a. } 0.6 &= \\
\text{b. } 6.7 &= \\
\text{c. } 0.21 &= \\
\text{d. } 5.05 &= 
\end{align*}
\]

57. Compare.

\[
\begin{align*}
\text{a. } 0.17 &\quad 0.2 \\
\text{b. } 1.6 &\quad 1.56 \\
\text{c. } 13.09 &\quad 13.9 \\
\text{d. } 9.80 &\quad 9.8 
\end{align*}
\]

58. Add and subtract.

\[
\begin{align*}
\text{a. } 7.81 + 5.2 &= \\
\text{b. } 6.1 - 2.36 &= 
\end{align*}
\]