Using the Multiplication and Division Assessment

When do I use the assessments?
Use the assessments before, during, or after instruction. If needed, make additional questions similar to those on the assessments.

Are there standardized administration and scoring procedures?
No. Use all or part of each assessment to determine what the student knows. It may be helpful to watch the student or ask questions about the work in order to understand the student’s thinking.

Is there a time limit?
Not unless specified. Use your own judgment to determine if the student is “fluent.” The student should be able to answer the questions accurately and easily. If the student pauses frequently or changes the answer, this may indicate a less than solid understanding.

What if a student gets all the answers correct, but I can tell he wasn’t sure?
Keep practicing. These assessments are not about getting a “passing score.” The intent is to use the questions – and the way the student works on them – to give you information about his level of understanding and skill.

What if the student makes a few minor errors, but I can tell he “gets it?”
Move on. Continue to practice for accuracy, but don’t let the score on the assessment keep the student from going on to the next topic.
MD1 Assessment– Modeling Multiplication page 1 of 2

1. Draw a picture of each number sentence.
   a. \(8 \times 0 = _____\)
   b. \(9 \times 2 = _____\)

2. Circle the picture that shows \(2 \times 12 = 24\).
3. Look at the number sentence and picture. What does the number 5 tell us?

- a. the total number of stars
- b. the number of groups
- c. the number of stars in each group

5 x 2 = 10
MD2 Assessment – Modeling Division page 1 of 2

1. Draw a picture of each number sentence.
   a. 2) 10

   b. 18 ÷ 3 = ?

2. Circle the picture that shows this problem: 4) 18

   a. [Diagram]
   b. [Diagram]
   c. [Diagram]
   d. [Diagram]
3. Look at the number sentence and picture. What does the number 3 tell us?
   a. how many dots are in each group
   b. the total number of dots
   c. how many groups

3 \overline{6}
MD3 Assessment – Building Fact Fluency (0 to 10)
Student should answer at least 18 out of 20 facts correctly in 1 minute.

1 \times 2 = \quad 6 \div 3 =

3 \times 4 = \quad 5 \times 4 =

30 \div 5 = \quad 6 \times 7 =

56 \div 8 = \quad 72 \div 9 =

9 \times 8 = \quad 8 \times 1 =

3 \times 2 = \quad 0 \div 2 =

20 \div 4 = \quad 27 \div 3 =

7 \times 0 = \quad 4 \div 1 =

6 \div 6 = \quad 8 \div 4 =

48 \div 6 = \quad 24 \div 3 =
<table>
<thead>
<tr>
<th>Multiplication</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x 3 =</td>
<td>5 x 7 =</td>
</tr>
<tr>
<td>40 ÷ 10 =</td>
<td>18 ÷ 9 =</td>
</tr>
<tr>
<td>4 x 1 =</td>
<td>7 ÷ 7 =</td>
</tr>
<tr>
<td>20 ÷ 4 =</td>
<td>3 x 5 =</td>
</tr>
<tr>
<td>8 x 10 =</td>
<td>30 ÷ 6 =</td>
</tr>
<tr>
<td>0 x 8 =</td>
<td>9 x 0 =</td>
</tr>
<tr>
<td>2 x 3 =</td>
<td>10 ÷ 1 =</td>
</tr>
<tr>
<td>0 ÷ 5 =</td>
<td>5 x 5 =</td>
</tr>
<tr>
<td>6 x 2 =</td>
<td>10 x 7 =</td>
</tr>
<tr>
<td>14 ÷ 2 =</td>
<td>20 ÷ 2 =</td>
</tr>
</tbody>
</table>
Name ______________________________

**MD5 Assessment - Using Strategies to Recall Facts (0 to 10)**

*Student should answer at least 18 out of 20 facts correctly in 1 minute.*

\[
\begin{align*}
5 \times 1 &= \quad 4 \div 1 &= \\
2 \times 6 &= \quad 14 \div 7 &= \\
21 \div 3 &= \quad 6 \times 3 &= \\
32 \div 8 &= \quad 4 \times 7 &= \\
9 \times 5 &= \quad 40 \div 5 &= \\
6 \times 10 &= \quad 54 \div 9 &= \\
7 \div 7 &= \quad 7 \times 7 &= \\
16 \div 2 &= \quad 8 \times 6 &= \\
3 \times 9 &= \quad 36 \div 9 &= \\
10 \times 6 &= \quad 90 \div 9 &=
\end{align*}
\]
Name ________________________________________

**MD6 Assessment - Multiplication: 1-digit times 2- or 3-digit, no carrying**

\[
\begin{align*}
21 & \times 4 & 212 & \times 4 & 403 & \times 2 \\
102 & \times 3 & 32 & \times 3 & 43 & \times 2 \\
\end{align*}
\]
MD7 Assessment – Multiplication: 1-digit times 2- or 3-digit, with and without carrying

32 x 5
702 x 7
204 x 5

22 x 3
324 x 4
340 x 2

36 x 3
867 x 8
30 x 9
MD8 Assessment – Multiplication: 2-digit times 2- or 3-digit

\[
\begin{array}{ccc}
602 & 312 & 201 \\
\times 31 & \times 34 & \times 23 \\
\end{array}
\]

\[
\begin{array}{ccc}
431 & 506 & 32 \\
\times 85 & \times 26 & \times 22 \\
\end{array}
\]
MD9 Assessment – Division Notation and Language

Read the sentence, and write the division problem in three different ways.

Example:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Notation</th>
<th>Equation</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six divided by 3</td>
<td>$3 \overline{)6}$</td>
<td>$6 \div 3 =$</td>
<td>$\frac{6}{3}$</td>
</tr>
<tr>
<td>a. How many fives in 20?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 6 goes into 42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 105 divided by 15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 18 divided into 3 equal groups</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MD10 Assessment – Division: 1-digit divisor, no remainder

\[ 9 \overline{72} \]
\[ 6 \overline{78} \]

\[ 3 \overline{42} \]
\[ 7 \overline{56} \]

\[ 3 \overline{906} \]
\[ 8 \overline{120} \]
MD11 Assessment – Division: 1-digit divisor, with and without remainder

\[ \begin{array}{cc}
4 & 9 \\
\hline
4 & 113 \\
3 & 306 \\
7 & 98 \\
5 & 162 \\
\end{array} \]
MD12 Assessment – Division: 2-digit divisor

\[
\begin{array}{cc}
17 & \overline{139} \\
23 & \overline{368} \\
16 & \overline{348} \\
14 & \overline{207} \\
13 & \overline{199} \\
12 & \overline{506}
\end{array}
\]
MD1 ANSWERS—Modeling Multiplication page 1 of 2

3. Draw a picture of each number sentence.
   
   a. $8 \times 0 = \underline{\hspace{2cm}}$

   Look for 8 groups of 0 or 0 groups of 8.

   b. $9 \times 2 = \underline{\hspace{2cm}}$

   Look for 9 groups of 2 or 2 groups of 9.

4. Circle the picture that shows $2 \times 12 = 24$.

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![Diagram of pictures for multiplication]

- a.
- b.
- c.
- d.
MD1 ANSWERS– Modeling Multiplication page 2 of 2

3. Look at the number sentence and picture. What does the number 5 tell us?

a. the total number of stars

b. the number of groups

c. the number of stars in each group

5 x 2 = 10
1. Draw a picture of each number sentence.
   a. \(2 \div 10\)
      Look for 10 separated in 2 groups of 5 or 5 groups of 2.
   
   b. \(18 \div 3 = ?\)
      Look for 18 separated into 3 groups of 6 or 6 groups of 3.

2. Circle the picture that shows this problem: \(4 \div 8\)
   
   a. [Diagram of two groups of 8]
   
   b. [Diagram of 3 groups of 6 and 6 groups of 3]
   
   c. [Diagram of a grid]
   
   d. [Diagram of 4 equal parts]
MD2 ANSWERS – Modeling Division page 2 of 2

3. Look at the number sentence and picture. What does the number 3 tell us?
   a. how many dots are in each group
   b. the total number of dots
   c. how many groups

   $\begin{array}{ccc}
   & & \\
   \downarrow \downarrow \downarrow \\
   & & \\
   \end{array}$

   $3 \overline{6}$
MD3 ANSWERS – Building Fact Fluency (0 to 10)
Student should answer at least 18 out of 20 facts correctly in 1 minute.

1 x 2 = 2

3 x 4 = 12

30 ÷ 5 = 6

56 ÷ 8 = 7

9 x 8 = 72

3 x 2 = 6

20 ÷ 4 = 5

7 x 0 = 0

6 ÷ 6 = 1

48 ÷ 6 = 8

6 ÷ 3 = 2

5 x 4 = 20

6 x 7 = 42

72 ÷ 9 = 8

8 x 1 = 8

0 ÷ 2 = 0

27 ÷ 3 = 9

4 ÷ 1 = 4

8 ÷ 4 = 2

24 ÷ 3 = 8
### MD4 ANSWERS – Zeros, Ones, Twos, Fives, and Tens
Student should answer at least 18 out of 20 facts correctly in 1 minute.

<table>
<thead>
<tr>
<th>Multiplication</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 \times 3 = 3$</td>
<td>$5 \div 7 = 35$</td>
</tr>
<tr>
<td>$40 \div 10 = 4$</td>
<td>$18 \div 9 = 2$</td>
</tr>
<tr>
<td>$4 \times 1 = 4$</td>
<td>$7 \div 7 = 1$</td>
</tr>
<tr>
<td>$20 \div 4 = 5$</td>
<td>$3 \times 5 = 15$</td>
</tr>
<tr>
<td>$8 \times 10 = 80$</td>
<td>$30 \div 6 = 5$</td>
</tr>
<tr>
<td>$0 \times 8 = 0$</td>
<td>$9 \times 0 = 0$</td>
</tr>
<tr>
<td>$2 \times 3 = 6$</td>
<td>$10 \div 1 = 10$</td>
</tr>
<tr>
<td>$0 \div 5 = 0$</td>
<td>$5 \times 5 = 25$</td>
</tr>
<tr>
<td>$6 \times 2 = 12$</td>
<td>$10 \times 7 = 70$</td>
</tr>
<tr>
<td>$14 \div 2 = 7$</td>
<td>$20 \div 2 = 10$</td>
</tr>
</tbody>
</table>
MD5 ANSWERS - Using Strategies to Recall Facts (0 to 10)
Student should answer at least 18 out of 20 facts correctly in 1 minute.

5 \times 1 = 5
2 \times 6 = 12
21 \div 3 = 7
32 \div 8 = 4
9 \times 5 = 45
6 \times 10 = 60
7 \div 7 = 1
16 \div 2 = 8
3 \times 9 = 27
10 \times 6 = 60

4 \div 1 = 4
14 \div 7 = 2
6 \times 3 = 18
4 \times 7 = 28
40 \div 5 = 8
36 \div 9 = 4
90 \div 9 = 10
MD6 ANSWERS - Multiplication: 1-digit times 2- or 3-digit, no carrying

\[
\begin{array}{ccc}
21 & \times 4 & 212 \\
\times 4 & 848 & \times 2 \\
84 & & 806 \\
\end{array}
\]

\[
\begin{array}{ccc}
102 & \times 3 & 32 \\
\times 3 & 96 & \times 2 \\
306 & & 86 \\
\end{array}
\]

Name ______________________________
MD7 ANSWERS – Multiplication: 1-digit times 2- or 3-digit, with and without carrying

\[
\begin{align*}
32 & \times 5 \quad & 702 & \times 7 \quad & 204 & \times 5 \\
& 160 & & 4914 & & 1020 \\
\end{align*}
\]

\[
\begin{align*}
22 & \times 3 \quad & 324 & \times 4 \quad & 340 & \times 2 \\
& 66 & & 1296 & & 680 \\
\end{align*}
\]

\[
\begin{align*}
36 & \times 3 \quad & 867 & \times 8 \quad & 30 & \times 9 \\
& 108 & & 6936 & & 270 \\
\end{align*}
\]
MD8 ANSWERS – Multiplication: 2-digit times 2- or 3-digit

\[
\begin{array}{ccc}
602 & 312 & 201 \\
\times 31 & \times 34 & \times 23 \\
18662 & 10608 & 4623 \\
\end{array}
\]

\[
\begin{array}{ccc}
431 & 506 & 32 \\
\times 85 & \times 26 & \times 22 \\
36635 & 13156 & 704 \\
\end{array}
\]
MD9 ANSWERS – Division Notation and Language

Read the sentence, and write the division problem in three different ways.

Example:

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Division Notation</th>
<th>Calculation</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six divided by 3</td>
<td>$3 \overline{)6}$</td>
<td>$6 \div 3 = \ ?$</td>
<td>$\frac{6}{3}$</td>
</tr>
<tr>
<td>e. How many fives in 20?</td>
<td>$5 \overline{)20}$</td>
<td>$20 \div 5 = \ ?$</td>
<td>$\frac{20}{5}$</td>
</tr>
<tr>
<td>f. 6 goes into 42</td>
<td>$6 \overline{)42}$</td>
<td>$42 \div 6 = \ ?$</td>
<td>$\frac{42}{6}$</td>
</tr>
<tr>
<td>g. 105 divided by 15</td>
<td>$15 \overline{)105}$</td>
<td>$105 \div 15 = \ ?$</td>
<td>$\frac{105}{15}$</td>
</tr>
<tr>
<td>h. 18 divided into 3 equal groups</td>
<td>$3 \overline{)18}$</td>
<td>$18 \div 3 = \ ?$</td>
<td>$\frac{18}{3}$</td>
</tr>
</tbody>
</table>
MD10 ANSWERS – Division: 1-digit divisor, no remainder

\[
\begin{array}{ll}
8 & 13 \\
9 \overline{72} & 6 \overline{78} \\
14 & 8 \\
3 \overline{42} & 7 \overline{56} \\
302 & 15 \\
3 \overline{906} & 8 \overline{120}
\end{array}
\]
MD11 ANSWERS – Division: 1-digit divisor, with and without remainder

19 R2
4)78

12 R5
9)113

76 R2
4)306

17 R2
5)87

14
7)98

54
3)162
MD12 Assessment – Division: 2-digit divisor

8 R3
17 \( \overline{139} \)

16
23 \( \overline{368} \)

21 R12
16 \( \overline{348} \)

14 R11
14 \( \overline{207} \)

15 R4
13 \( \overline{199} \)

42 R2
12 \( \overline{506} \)