Math Diagnosis and Intervention System 2.0

Sample Lessons Grade 1 and 4

**Booklet B:** Basic Facts, Grades K–3
**Booklet H:** Fractions, Decimals, and Percents, Grades 4–6

Also Available in Spanish

enVisionMATH®
Common Core
Sample Lessons Grade 1 and 4
Also available in Spanish

Math Diagnosis and Intervention System 2.0

Intervention Lessons help you target the individual needs of each student in your math classroom. All lessons are two pages and include instructional activities, practice, and teacher notes.

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1 Assessment

Entry-level assessment MDIS Lessons and Diagnostic Tests are included to ensure all your students’ needs are met. As an example, for a student entering Grade 4, assess prerequisite knowledge of Grade 3 content by using the Grade 3 Diagnostic Test, Form A. Or give the Grade 4 Diagnostic Test, Form A, as a pretest on Grade 4 content.

Summative evaluation Use Form B of a Diagnostic Test to check performance after providing instruction or intervention.

2 Diagnosis

Analysis of test results On the Class Record Form, mark test items missed and record scores. If performance is unacceptable, give the Diagnostic Test for the previous grade to determine the student’s proficiency level.

Placement Use test results, along with other performance indicators, to make placement decisions. For example, decide whether the student should use the Grade 3 text, the Grade 2 text, or transitional materials such as those found in the Math Diagnosis and Intervention System.
3 Intervention

During school Use grade-specific Intervention Lessons for intervention on prerequisite skills at the start of the year, topic, or lesson. Or use for intervention on content taught during the year.

In after-school, Saturday-school, or summer-school (intersession) programs Use as a resource for individualized prescriptions.

4 Monitoring

Recording progress On the Individual Record Form, mark test items missed and intervention material assigned.

Informing parents Use at parent conferences. Involve parents in monitoring intervention assignments.
Using = and ≠

1. \(2 + 2 = 4\)  
   - True  
   - False

2. \(9 = 5 + 3\)  
   - True  
   - False

3. \(10 - 7 = 4\)  
   - True  
   - False

4. \(1 + 4 = 3 + 2\)  
   - True  
   - False

5. \(8 - 1 = 3 + 3\)  
   - True  
   - False

6. \(1 + 2 = 5 - 2\)  
   - True  
   - False

7. \(3 + 4 \bigcirc 2 + 5\)  
   - True  
   - False

8. \(6 - 2 \bigcirc 8 - 5\)  
   - True  
   - False

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1. Ask: What does it mean if I say something is true? Have students share their ideas. Say: True means something is right, or correct, or real. The word false is used to describe something that is not true. It would be true to say that the sky is blue. It would be false to say that dogs have 6 legs. Ask volunteers to share their own examples.

2. Write = on the board. Say: We use an equal sign to show that what is on one side of an equation is the same amount as, or equal to, what is on the other side. Direct attention to Problem 1 and have students circle whether it is true or false. Repeat for Problems 2 through 6.

3. Direct attention to Problem 7. Ask: Is \(3 + 4\) equal to \(2 + 5\)? How do you know? Yes; both sides are equal to 7. Have students write an equal sign between the two expressions.

4. Write ≠ on the board. Say: We use a not-equal sign, or an equal sign with a slash through it, to show that what is on one side of an equation is not equal to what is on the other side. Ask: Is \(6 - 2\) equal to \(8 - 5\)? How do you know? No; the left side is equal to 4 but the right side is equal to 3. Have students write a not-equal sign between the two expressions.
Using = and ≠ (continued)

Circle the word to show whether the equation is true or false.

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<tbody>
<tr>
<td>9.</td>
<td>(6 + 1 = 5)</td>
<td>True</td>
</tr>
<tr>
<td>10.</td>
<td>(8 - 2 = 6)</td>
<td>True</td>
</tr>
<tr>
<td>11.</td>
<td>(10 = 7 + 3)</td>
<td>True</td>
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<td>12.</td>
<td>(2 + 7 = 1 + 4)</td>
<td>True</td>
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<tr>
<td>13.</td>
<td>(5 - 1 = 3 + 1)</td>
<td>True</td>
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Write = or ≠ for each.

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<td>14.</td>
<td>(4 + 2)</td>
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<td>15.</td>
<td>(8 - 2)</td>
<td>(6 + 2)</td>
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<td>16.</td>
<td>(3 + 4)</td>
<td>(8 + 1)</td>
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<tr>
<td>17.</td>
<td>(7 - 2)</td>
<td>(4 + 1)</td>
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Using = and ≠

1. 2 + 2 = 4   True  False
2. 9 = 5 + 3   True  False
3. 10 − 7 = 4  True  False
4. 1 + 4 = 3 + 2 True  False
5. 8 − 1 = 3 + 3 True  False
6. 1 + 2 = 5 − 2 True  False
7. 3 + 4 ≠ 2 + 5 True  False
8. 6 − 2 ≠ 8 − 5 True  False

1. Ask: What does it mean if I say something is true? Have students share their ideas. Say: True means something is right, or correct, or real. The word false is used to describe something that is not true. It would be true to say that the sky is blue. It would be false to say that dogs have 4 legs. Ask students to share their own examples.

2. Write “=” on the board. Say: We use an equal sign to show that what is on one side of an equation is the same amount as, or equal to, what is on the other side. Direct attention to Problem 1 and have students circle whether it is true or false. Repeat for Problems 2 through 8.

3. Direct attention to Problem 7. Ask: Is 6 + 2 equal to 8 − 5? How do you know? Yes, both sides are equal to 3. Have students write an equal sign between the two expressions.

4. Write “=” on the board. Say: We use an equal sign, or an equal sign with a slash through it, to show that one side of an equation is not equal to the other side. Ask: Is 6 − 2 equal to 8 − 5? Yes How do you know? Both sides equal 7. Have students write “≠” in pairs. Give each pair an index card and have them write “=” or “≠” for each.

11. 10 = 7 + 3 True  False
12. 2 + 7 = 1 + 4 True  False
13. 5 − 1 = 3 + 1 True  False
14. 4 + 2 = 5 + 1 True  False
15. 8 − 2 ≠ 6 + 2 True  False
16. 3 + 4 ≠ 8 + 1 True  False
17. 7 − 2 ≠ 4 + 1 True  False

1. Conceptual Development
Use with Exercises 1–8.

In this lesson, you will decide whether a number sentence is true or false and you will learn a new symbol that shows that two amounts are not equal.

As a class, discuss the meanings of true and false. Write “=” on the board. We use an equal sign to show that one side of an equation is the same amount as, or equal to, the other side. Is 2 + 2 equal to 4? Yes So this is true. Have students do Exercises 1–6.

Is 3 + 4 equal to 2 + 5? Yes How do you know? Both sides equal 7. Have students write “=” on the board. This is a not-equal sign. We use it to show that one side of an equation is not equal to the other side. Is 6 − 2 equal to 8 − 5? No How do you know? Both sides equal 4 but the right side is equal to 3. Have students write “≠”.

2. Practice
Use with Exercises 9–17.

Remind students that a number sentence is true only if the numbers on both sides of the equal sign show the same amount.

Error Intervention For Exercises 14–17, if students have trouble choosing the correct symbol, tell them that they can think of ≠ as meaning the number sentence is false.

If You Have More Time Have students work in pairs. Give each pair an index card and have them write “=” on one side and “≠” on the other. One partner says a number sentence and the other partner flips the index card to the correct symbol.

3. Assessment
In this lesson, students used the symbols = and ≠ to complete number sentences. Use the Quick Check problem to assess students’ understanding.

Quick Check
Which symbol, = or ≠, should you use to complete this sentence? 5 + 3  ○  4 − 1.
Adding Fractions with Like Denominators

**Materials** crayons or markers

Nur wove $\frac{2}{5}$ of a rug in February and $\frac{1}{5}$ of it in March.

Find what part of the rug she has finished in all by answering 1 to 4.

1. Color $\frac{2}{5}$ of the rectangle on the right.

2. Color $\frac{1}{5}$ more of the rectangle on the right.

3. How much of the rectangle did you color in all? __________

   This is the sum of $\frac{2}{5}$ and $\frac{1}{5}$. So, $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$.

4. What part of her rug has Nur finished in all? ______

Jamal wove $\frac{2}{6}$ of a rug in February and $\frac{2}{6}$ in March.

Find what part of the rug he has finished in all by answering 5 to 11.

5. Color $\frac{2}{6}$ of the rectangle on the right.

6. Color $\frac{2}{6}$ more of the rectangle on the right.

7. How much of the rectangle did you color in all? ______

8. What is $\frac{2}{6} + \frac{2}{6}$? ______

9. Color the second rectangle to find a fraction that is equivalent to $\frac{4}{6}$.

   $\frac{4}{6} = \frac{\square}{\square}$

10. So, $\frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \square$.

11. What part of his rug has Jamal finished in all? ______
Name ____________________________________________

Adding Fractions with Like Denominators (continued)

12. **Reasoning** Explain how to add $\frac{1}{9} + \frac{4}{9}$.

Add.

13. $\frac{1}{3} + \frac{1}{3} = \underline{\hspace{1cm}}$

14. $\frac{1}{5} + \frac{3}{5} = \underline{\hspace{1cm}}$

15. $\frac{1}{4} + \frac{2}{4} = \underline{\hspace{1cm}}$

16. $\frac{2}{6} + \frac{3}{6} = \underline{\hspace{1cm}}$

17. $\frac{2}{8} + \frac{5}{8} = \underline{\hspace{1cm}}$

18. $\frac{3}{10} + \frac{2}{10} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

19. Calvin bought a gallon of yogurt. He ate $\frac{1}{6}$ gallon the first day, and $\frac{2}{6}$ gallon the second day. What fraction of the yogurt did he eat? ______

20. Three fifths of Mr. James’ class are wearing blue jeans and white shirts. One fifth of the class are wearing blue jeans and red shirts. One fifth of the class are wearing brown pants and white shirts. What fraction of Mr. James’ class are wearing white shirts? ______

21. **Reasoning** What fraction would you add to $\frac{1}{3}$ to get $\frac{3}{3}$? ______
Name ____________________________

Adding Fractions with Like Denominators

Materials Crayons or markers

Nur wove 2/3 of a rug in February and 1/2 of it in March.
Find what part of the rug she has finished in all by answering 1 to 4.
1. Color 2/3 of the rectangle on the right.
2. Color 1/2 more of the rectangle on the right.
3. How much of the rectangle did you color in all? __________
   This is the sum of 2/3 and 1/2. So, 2/3 + 1/2 = __________
4. What part of her rug has Nur finished in all? __________

Jamal wove 3/4 of a rug in February and 2/3 in March.
Find what part of the rug he has finished in all by answering 5 to 11.
5. Color 3/4 of the rectangle on the right.
6. Color 2/3 more of the rectangle on the right.
7. How much of the rectangle did you color in all? __________
8. What is 3/4 + 2/3? __________
9. Color the second rectangle to find a fraction that is equivalent to 3/4. __________
10. So, 3/4 + 2/3 = __________
11. What part of his rug has Jamal finished in all? __________

1. Conceptual Development
   Use with Exercises 1–11.
   In this lesson you will learn to add fractions with like denominators.
   Revisit the term denominator as needed. Have students read the text above Exercise 1 and color the parts of the rectangle as directed. Have them look at the rectangle to complete Exercises 3–4. What part of the rug has Nur finished? __________
   Have students read the text above Exercise 5 and color the rectangle as directed. Have them complete Exercises 7–11 as directed. What do you notice about adding fractions with like denominators? We have to add together only the numerators.

2. Practice
   Use with Exercises 12–21.
   Remind students that the denominators represent the total parts of a whole and do not change when adding.
   Error Intervention: If students have difficulty adding the fractions and mistakenly add the denominators together, remind them that in the first exercise they colored 2 parts of the rectangle, then they colored 1 more part of the rectangle, and finally they added these parts together. The denominator did not change. Tell students that any fractions they add together will have the same denominator and that this number won’t change as they find the sum.
   If You Have More Time: Have students add 1/2 + 2/3 either by shading figures on paper to help them visualize the sum or without using a visual.

3. Assessment
   In this lesson students learned to add fractions with like denominators. Use the Quick Check problem to assess students’ understanding.

Quick Check
   Solve: 3/10 + 4/10. __________
   Solve: 4/9 + 2/9. __________
Grades K–3
Booklet A  Numbers, Place Value, Money, and Patterns
Booklet B  Basic Facts
Booklet C  Computation with Whole Numbers
Booklet D  Measurement, Geometry, Data Analysis, and Probability
Booklet E  Problem Solving
Diagnostic Tests
Teacher’s Guide

Grades 4–6
Booklet F  Numeration, Patterns, and Relationships
Booklet G  Operations with Whole Numbers
Booklet H  Fractions, Decimals, Ratios, and Percents
Booklet I  Measurement, Geometry, Data Analysis, and Probability
Booklet J  Problem Solving
Diagnostic Tests
Teacher’s Guide