***Say It a Simpler Way***

Collect Like Terms

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| --- | --- |
|  |  |
| **Step 1 2x + 4 + 3x + 6** | **Step 2 Rearrange to make more sense****2x + 3x + 4 + 6** |
| **Step 3 Write it in a simpler way****5x + 10** |

Notice that “4 + 6” is just a more complicated way to say “10.”

Also, 2x + 3x is the same as simply saying 5x.

This is called “collecting like terms” because 2x and 3x are alike. They can be collected into a group.

 **Using Algebra Tiles**

 **1)** Use Algebra tiles to represent 4x + 3 + 7x + 1

 **2)** Write the simpler version. (Refer to Step 3 from the example diagram.)

  **3)** Use Algebra tiles to represent 9 + 5x + 2x + 3 **4)** Write the simpler version.

 **5)** Use Algebra tiles to represent 2x + 2x + 2x **6)** Write the simpler version.

 **7)** Use Algebra tiles to represent 7x + 4 **8)** Write the simpler version.

 **Practice — Expressions without Tiles**

Write the simplest version of each expression.

**9)** 10y + 2 + 2 + 5y **10)** 3 + 4g + 4 + 5g - 3 - 6g

**11)** 25 + 35k + 12 **12)** 73 + 24r - 10r

**13)** $\frac{3}{7}w+ \frac{2}{7}w$ **14)** 36 + 5q

**15)** 3n + 3n + 3n + 3n + 3n + 3n **16)** 700s + 575s

**17)** 4p + 10 + 9 + 8 **18)** 16u + 18u + 7

 **Try it Backward**

 **19)** Write a longer expression that could be simplified to 11q + 19.

 **20)** Write another longer expression that could be simplified to 11q + 19. (Of course, this answer should be different from your answer to the previous question.) If you are working with a group on this study guide, decide which person in your group has the most creative answer.

 **21)** Check your answers to all questions so far.

 **Notes**

Choose the two questions from this study guide that were most difficult for you. Copy them into your notes.

 **Challenge**

 **22)** 5w + 4

How many different possible expressions exist that could be simplified to 5w + 4? Limit yourself to adding terms—no subtraction, multiplication, roots, etc. (If you didn’t have this limit, then the answers would be infinite!)

 **Answers**

**2)** 11x + 4

**4)** 7x + 12

**6)** 6x

**8)** 7x + 4 (It was already fully simplified)

**9)** 15y + 4 **10)** 3g + 4

**11)** 35k + 37 **12)** 73 + 14r

**13)** $\frac{5}{7}w $ **14)** 36 + 5q (It was already fully simplified)

**15)** 18n **16)** 1275s

**17)** 4p + 27 **18)** 34u + 7

**19)** Example: 5q + 6q + 10 + 9 **20)** Example: 9q + 2q + 18 + 1