# Lesson Plan Template (Direct Instruction)

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| Teacher: Chelsea Simpson | Subject: 5th grade math  |
| Standard:* 5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
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| Objective (Explicit): * The student will be able to solve numerical expressions using parenthesis, brackets, and braces.
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| Evidence of Mastery (Measurable): * Exceeds: Students can correctly solve all problems using parenthesis, brackets, and braces. Students can create their own problems using brackets, parenthesis, and braces and solve them. Students can explain how to solve problems using brackets, parenthesis, and braces.
* Meets: Students can correctly solve all the problems using parenthesis and brackets, but have trouble answering questions using braces.
* Approaches: Students can solve most of the problems using parenthesis and brackets, but cannot answer any questions using braces.
* Falls Far Below: Students can only answer problems using parenthesis, but are having trouble with problems using braces and brackets.
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| Sub-objectives, SWBAT (Sequenced from basic to complex):* Add parenthesis to equations to group numbers together
* List the order of operations
* Solve problems using order of operations
* Solve problems using parenthesis and brackets
* Solve problems using parenthesis, brackets, and braces
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| Key vocabulary: Parenthesis, exponents, multiplication, division, addition, subtraction, order of operations, brackets, and braces. | Materials: Foam numbers, foam operations (addition, subtraction, multiplication, and division), laminated brackets and braces, base ten blocks, notebooks. |
| Opening (state objectives, connect to previous learning, and make relevant to real life)* Go over the objective with the students.
* Review order of operations.
* Solve 2-3 problems using order of operations.
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| Instructional Input | Teacher Will: * Now that we have gone over order of operations and we remember each step, let’s add something new to these problems.
* The first items we are going to add to our equations are brackets.
* Brackets look like this [ ]. They go around a problem that has parenthesis and a number outside of the parenthesis. For example, an equations using brackets looks like this [(4+5) – 3].
* We solve this problem by solving the numbers inside the parenthesis first and then solve the new problem inside the brackets. To solve this equation we will add 4 and 5 to get 9. Then we will subtract 3 from 9 to get the answer 6. I am going to write 2 problems on the board and you are going to solve the problems using brackets.
* Call on a student to restate the directions.
* Write two problems on the board and have the students solve the problems with their table partners.
* Walk around the classroom watching the students complete the example problem and corrects any errors the students may make.
* You may also see problems like this: [(3+6) - 4] +5. With this type of problem, we are going to do the problem inside the parenthesis first, then the problem inside the brackets, and finally add the number outside the brackets.
* Solve the problem on the board.
* I am going to write two problems on the board and you are going to solve these problems with your table partners like you did before.
* Call on a student to restate the directions.
* Walk around the classroom watching the students complete the example problem and corrects any errors the student’s may make.
* The last symbols we are going to add to these types of problems are braces. They look like this { }.
* They go around a problem that includes brackets, parenthesis, and a number outside of the parenthesis. For example, an equations using braces looks like this {[(4+5) – 3] + 2}.
* The first thing you would do is the equation in the parenthesis. Then the equation in the brackets, and finally, the equation in the braces. For this problem, we would add 4 and 5 to get 9. Then we would subtract 3 from 9. Finally, we would add 6 and 2.
* I am going to write 2 problems on the board using braces. I want you to solve each problem with your table partners.
* Call on a student to repeat the directions.
* Walk around the classroom watching the students complete the example problems and correct any errors the students may make.
* You all did a wonderful job solving each type of equation using parenthesis, brackets, and braces. Are there any questions about using brackets, braces, or parenthesis?
 | Student Will: * Take out notebooks to take notes.
* Write down each example of equations using brackets.
* When/if the teacher calls on them, restate the directions.
* Solve 2 example problems with their table partners.
* Write down example of equations using brackets in a different way.
* When/if the teacher calls on them, restate the directions.
* Solve 2 example problems with their table partners.
* Write down each example of equations using braces.
* When/if the teacher calls on them, restate the directions.
* Solve 2 example problems with their table partners.
* Ask any questions they may have about using parenthesis, brackets, and braces.
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| Co-Teaching Strategy/Differentiation* Change the numbers in the problems to fit student’s understanding of equations.
* Have the students work individually on the example problems and then talk with their table partners about their answers and explain why that is the answer.
* Follow student’s 504
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| Guided Practice | Teacher Will: * I am now going to pass out a worksheet with 10 problems using parenthesis, brackets, and braces. I want each of you to use the foam numbers and symbols on your desk to represent each problem. Then, I want you to solve the problem on the worksheet using the foam items on your table. Are there any questions about what is expected?
* Call on a student to repeat the directions.
 | Student Will: * Look over the 10 problem worksheet.
* Listen to the directions given by the teacher.
* Ask any questions they may have about what is expected of them.
* When/if the teacher calls on them, repeat the directions.
* Solve each equation on the worksheet by setting up the problem using the foam numbers and symbols, write down each step on the worksheet, and solve the problem using the rules for parenthesis, brackets, and braces.
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| Co-Teaching Strategy/Differentiation* All students repeat the directions.
* “3 before me” to encourage accountability for their own learning.
* Follow student’s 504
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| Independent Practice | Teacher Will: * For homework, I want you to solve each equation on this new worksheet using the rules for parenthesis, brackets, and braces. I want all work done on a separate sheet of paper.
* Are there any questions about your homework?
* Ask student to repeat the directions in unison.
* Go ahead and get started if you are done with the 10 problem worksheet. If you are not finished, finish that worksheet first, make sure your name is on it, and it gets turned in.
 | Student Will: * Look over the homework worksheet on parenthesis, brackets, and braces.
* Ask any questions about the worksheet that they may have.
* Repeat the homework directions in unison.
* Finish the 10 problem worksheet, make sure their names are on the worksheet, and turn it in.
* Work on homework until the end of the period, and finish the rest for homework.
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| Co-Teaching Strategy/Differentiation* Follow student’s 504
* Have student repeat the directions to a partner.
* Have students solve the problems using base ten blocks.
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| Closing/Student Reflection/Real-life connections:* I want everyone to take out a piece of paper and rip it in half. I want each of you to write 3 problems on this sheet of paper. One problem has to have parenthesis, one problem has to have brackets and parenthesis, and the last problem has to include parenthesis, brackets, and braces. Then I want you to solve your own problems.
* Call on a student to repeat the directions out loud.
* Once everyone has turned in their paper, the teacher will make them turn to a partner and tell them one place they might see this type of problem in the real-world.
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Name: \_\_\_\_\_\_\_(Guided Practice Worksheet)\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Solve each problem.

1. 17 + (72 ÷ 8)

2. 16 - (1 × 12)

3. [(5 x 50) - 10)] + (4 x 3)

4. [3 x (100 ÷ 25)] + 7

5. [32 ÷ 4] + [27 ÷ 3]

6. (3 + 2) × (6 - 4)

7. 24 – [6 ÷ 2]

8. [(10 - 3) + 12] - 2

9. {[(4+6) x 6] ÷ 12}

10. (18÷2) x {[(9 x 9 - 1) ÷ 2]-[5 x 20 - (7 x 9 - 2)]}

Name: \_\_\_\_\_\_\_(Homework Worksheet)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Solve each problem.

1. (5 x 20) + (6÷2)

2. [10+7] – (4+6)

3. {6 x [7-5]} + 3

4. {25 – 6 + (8 x 4)}

5. {2 x [3 x (8-4)]} ÷ 3