**🎉 Algebraic Expressions: Party Planning with Algebra**

* Topic: Algebraic Expressions
* Duration: 55 minutes
* Grade: 7
* Methodology: Direct Instruction
* Standards: Common Core State Standards for Mathematics (CCSSM) Grade 7, specifically 7.EE.A.1 and 7.EE.B.3
* Subject: Mathematics

**Objectives**

* Students will be able to identify and define terms, coefficients, and variables in algebraic expressions.
* Students will simplify algebraic expressions using algebra tiles and visual aids.
* Students will apply algebraic expressions to solve real-world problems involving budgeting and planning.

**Resources Needed**

* Interactive Whiteboard with Algebraic Expression Visualization Software: for visual demonstrations.
* Algebra Tiles: for hands-on manipulation and simplification of expressions.
* Printed Worksheets: with structured problem sets for individual practice.
* Real-World Problem Cards: for group discussions and practical application.
* Graph Paper and Colored Pencils: for visual representations and graphing activities.
* Mini Whiteboards and Markers: for individual practice and immediate feedback.
* Online Quiz Tool: for formative assessment.
* Reflection Journals: for student reflections and self-assessment.

**Lesson Plan Summary**

**Introduction (5 minutes) 🎬**

Begin with the provocative question: "How can algebra help you plan a party?" Show a short video clip of a real-world scenario involving budgeting for a party, which introduces the concept of using algebraic expressions to manage costs.

**Teacher Note:**  
Ensure the video is engaging and relatable to the students' interests.

**Present New Material (10 minutes) 📊**

Use the interactive whiteboard to introduce algebraic expressions, breaking down terms, coefficients, and variables. Demonstrate with visual aids and storytelling, explaining how each part of an expression represents a real-world quantity. Use algebra tiles to show how expressions can be simplified.

**Core Questions:**  
"What is a variable?" "How does a coefficient affect a term?" "Can you identify the terms in this expression?"

**Teacher Note:**  
Use relatable examples, such as "3x" representing the cost of 3 pizzas.

**Guided Practice (10 minutes) 👫**

Divide students into small groups and give each group a set of real-world problem cards. Each group uses algebra tiles to model and simplify the expressions on their cards. Circulate the room to provide immediate feedback and support.

**Teacher Note:**  
Encourage collaboration and ensure each student participates in the activity.

**Individual Practice (10 minutes) ✍️**

Distribute printed worksheets with a variety of structured problems. Students work independently to simplify expressions and solve problems, using mini whiteboards to show their work. Provide immediate feedback as they work.

**Core Questions:**  
"How did you simplify this expression?" "What steps did you take to solve this problem?"

**Teacher Note:**  
Monitor students' progress and offer guidance to those who are struggling.

**Assessment and Reflection (10 minutes) 📱**

Use an online quiz tool to conduct a quick formative assessment, ensuring students understand the key concepts. Follow this with a reflective journal entry where students write about how algebraic expressions can be used in their daily lives.

**Teacher Note:**  
Look for understanding of terms, coefficients, and variables in the quiz results. Encourage honest reflections in journals.

**Review and Closure (10 minutes) 🗣️**

Conduct a class discussion to review key concepts, encouraging students to share their reflections and problem-solving strategies. Emphasize the real-world applications of algebra. Conclude with a collaborative activity where students create and solve their own algebraic expressions based on a given real-world scenario.

**Core Questions:**  
"Can you think of another real-world problem that can be solved using algebra?" "How did you create your expression?"

**Teacher Note:**  
Celebrate students' creativity and problem-solving skills. Ensure every student feels valued and heard.

**Glossary**

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| **Algebraic Expression:**  A mathematical phrase that includes numbers, variables, and operation symbols (e.g., 3x + 4). |  | **Variable:**  A symbol, usually a letter, that represents an unknown number (e.g., x in 3x + 4). |  | **Coefficient:**  A number that multiplies a variable (e.g., 3 in 3x). |
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| **Term:**  A single number, a variable, or numbers and variables multiplied together (e.g., 3x, 4). |  | **Simplify:**  To combine like terms and make an expression easier to work with (e.g., 3x + 4x simplifies to 7x). |  | **Real-World Problem:**  A practical problem that can be solved using mathematical concepts (e.g., budgeting for a party). |
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| **Formative Assessment:**  A type of assessment used to monitor student learning and provide ongoing feedback (e.g., online quiz). |  |