Lesson Plan Title: Distributive Property
Teacher's Name: Juliette Spitaels   **Subject/Course:** Math/Algebra 1
Unit: Functions and Expressions   **Grade Level:** 9th

Overview of and Motivation for Lesson:
The distributive property is a way of rewriting expressions in new ways. It can be especially useful in problems that contain variables, but can also make mental computation of problems easier. Combining like terms simplifies expressions so they're easier to understand and interpret.

Stage 1-Desired Results

Standard(s):
- A-SSE 1.a. interpret parts of an expression, such as *terms*, factors, and coefficients
- A-SSE 1.b. interpret complicated expressions by viewing one or more part as a single entity
- A-SSE 2. Use the structure of an expression to identify ways to rewrite it.

Aim/Essential Question:
- How can mathematical ideas be represented?
- Why is it helpful to have several different representations of the same relation?

Understanding(s):
Students will understand that . . .
- Distributive property is a way to rewrite equations
- expressions can be simplified by combining like terms
- expressions are a way to represent mathematical ideas

Content Objectives:	**Language Objectives:**
Students will be able to . . . - Apply the distributive property to expressions with numbers and variables - be able to identify like terms - simplify an expression by combining like terms	ELD Level 4 or 5 *Students will be able to . . . in English* - Correctly use the vocabulary "like terms" and "distribute" while explaining their solutions in writing or verbally.

Key Vocabulary
- like terms
- distribute
- distributive property
- coefficient

Stage 2-Assessment Evidence

Performance Task or Key Evidence
- Students will be able to use distributive property to evaluate a word problem and simplify an expression

Key Criteria to measure Performance Task or Key Evidence
- Students can correctly show their steps for utilizing the distributive property. They can interpret how a word problem will be translated into an equation (using parentheses) and be able to show their steps for distributing and combining like terms.

Stage 3- Learning Plan

Learning Activities:
Do Now/Bell Ringer/Opener: Students will evaluate a problem using the traditional order of operations, doing parentheses first.
$9(3+7+4)$

Learning Activity 1:
Students will watch a BrainPop video that explains what the distributive property is, how to apply it to a problem, and some of the advantages of it.

Learning Activity 2:
Students will participate in a lecture with "do-it-yourself" problems along the way. It will cover distributive property with numbers, distributive property with variables, and combining like terms.
By the end of lecture they should be able to: distribute and simplify the expression $2(4x+10+3x)-6$

Application:
Worksheet: Students will complete a worksheet with practice problems for applying the distributive property and combining like terms. This will be completed individually.
Screencastify: Students will make a short video explaining their solution to a distributive property problem. As they solve they will explain their steps for distributing the coefficient and combining like terms.

Summary/Closing
Exit ticket: two simplifying expressions and distributive property problems:
Simplify: $7(4+8x-2)+(3x+1)$
Word problem: A buffet charges \$32 per diner, no matter their age. If a party with 12 adults and 15 children go there for dinner, write and evaluate an expression to describe the situation.

Multiple Intelligences Addressed:

☐ Linguistic	☐ Logical-Mathematical	☐ Musical	☐ Bodily-kinesthetic
☐ Spatial	☐ Interpersonal	☐ Intrapersonal	☐ Naturalistic

Student Grouping

☐ Whole Class ☐ Small Group ☐ Pairs ☐ **I**ndividual

Instructional Delivery Methods

☐ Teacher Modeling/Demonstration ☐ Lecture ☐ Discussion
☐ Cooperative Learning ☐ Centers ☐ Problem Solving
☐ Independent Projects

Accommodations

Repeat directions as needed and clarify instruction to help students understand their goals

Homework/Extension Activities:

ALEKS: Students will complete 20 minutes of content practice on ALEKS.

Materials and Equipment Needed:

- Computer and internet connection

Adapted from Grant Wiggins and Jay McTighe-*Understanding by Design*