Grade Level	Content Area	Course Title *(For 9-12 Samples Only)*	Unit Title
5th grade	Mathematics		Evaluating Expressions

Length of Unit	Time of Year Taught	Expected Prior Knowledge
5 days 60 minutes per day	2nd quarter	Write and interpret numerical expressions: 5.O A.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*

Unit Description: Students will write and interpret numerical expressions using parenthesis. The unit begins with direct instruction and a lesson on the basics of PEMDAS. Students will have a chance to review facts, write expressions, and evaluate expressions. Students will work in groups to play a matching game.

Standards: See instructions on page 15.	Write and interpret numerical expressions. 5-1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
Summative Assessment *In addition to the description, include a copy of the summative assessment in the application package.*	Student will demonstrate mastery of evaluating expressions with parenthesis by completing a 10 question quiz.
Scoring for Summative Assessment *In addition to the description, include a copy of the answer key and scoring rubric (if applicable) for the summative assessment in the application package.*	The assessment is a 10 question quiz where questions 1-6 are worth one point each and question 7 is worth three points. 7 out of 10 will demonstrate mastery which is a 70%.
Materials/Resources Needed *Include all items for the entire unit.*	Matching game cards, math journal, white boards, poster paper and craft materials, worksheets, assessment

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5

Instruction and Timeline	Objective: Students will demonstrate an understanding the basics of PEMDAS. Anticipatory set: Students will complete simple math facts in their math journal: 24+12, 16+30, and 48+8. Review as a class. Input/Modeling: Teacher will explain PEMDAS. Teacher will give examples of expressions with parenthesis for example: (1+2)-1=2. Students will take notes. Check for Understanding: That is PEMDAS? What does the P stand for? Guided Practice: Students will work with a partner create posters of PEMDAS to be displayed around the room. Independent Practice: Students will create posters. Closure: What does PEMDAS stand for?	Objective: Students will evaluate expressions using parenthesis. Anticipatory set: Students will complete simple math facts in math journal: 6x8, 7x1, 12x4. Review as a class. Input/Modeling: Teacher will give examples of problems with parenthesis and model solving the problems. Check for understanding: What is the first step? What is the second step? Guided Practice: Teacher will put five problems on the board for students to practice and then review them. Independent Practice: students will work on worksheet. Closure: What would happen if you did the multiplying before the parenthesis?	Objective: Students will write expressions using parenthesis. Anticipatory set: Students will work on a simple expression with parenthesis in math journal. Input/Modeling: Teacher will review worksheet with students. Guided Practice: Teacher will review more problems. Independent Practice: Students will write three of their own expressions using parenthesis and include answers. Check for Understanding: The teacher will check for understanding by having students hold up the white board. Closure: What does the P stand for in PEMDAS? What is PEMDAS?	Objective: Students will evaluate expressions using parenthesis in groups using a matching game. Anticipatory Set: Students will work on a simple expression with parenthesis in math journal. Instructional Input: Give students a problem to work on as practice. Review as a class. Input/Modeling: Teacher will review any questions students may have from the anticipatory set. Explain the matching game. Students will match expressions with answers. Check for Understanding: Explain the rules for the matching game. Guided Practice: Students will be paired up and will play the matching game with a partner to practice evaluating expressions. Independent Practice:	Objective: Student will demonstrate mastery of evaluating expressions with parenthesis. Anticipatory Set: Give students a problem to work on as practice. Review as a class. Input/Modeling: Teacher will distribute assessment. Assessment: Students will complete assessment. Closure: Collect assessment.

				Students participate in the game with a partner. Closure: Review some of the answers from the game.	

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Student Activities	Students will complete simple math facts: 24+12, 16+30, and 48+8. Students will take notes. Students will work with a partner create posters of PEMDAS to be displayed around the room. Students will discuss what PEMDAS means.	Students will complete simple math facts: 6x8, 7x1, 12x4. Students will discuss: What is the first step? What is the second step? Students will practice will problems then review them with the class. Students will work on worksheet. Students will discuss: What would happen if you did the multiplying before the parenthesis?	Students will work on a simple expression with parenthesis. Students will practice problems. Students will solve expressions on their whiteboards. Students will hold up the white board. Students will write three of their own expressions using parenthesis and include answers. Students will discuss: What does the P stand for in PEMDAS? What is PEMDAS?	Students will work on a simple expression with parenthesis. Students will practice evaluating expressions with parenthesis. Students will explain the rules for the matching game. Students will be paired up and will play the matching game with a partner to practice evaluating expressions. Students will review some of the answers from the game.	Students will work on a problem. Students will complete assessment.

Matching Game

54	22	24	100
(3+6) x (12-9)	24+12 x 6-1	20 x (30-25)	9+3 x 5
10	180	95	27
48+ 8 / 4+4	(24+12) x (6-1)	16 +30/5	(75 +25) /10

Key:
9+3 x 5=24, 24+12 x 6-1=180, 48+ 8 / 4+4=54, 24+12 x 6-1=95, (3+6) x (12-9)=27, 20 x (30-25)=100, (75 +25) /10=10, 16 +30/5=2

Name:_____
Date:_____

ORDER OF OPERATIONS WORKSHEET

Please solve the following equations according to the proper order of operations.

1) (55-5) + (3 + 4) =

2) 6 x 6 – 24 ÷ 4 =

3) 17 + 5 x 20 =

4) 6 – 3 + 7 x 4 =

5) 5 x 5 - 6 ÷ 2 =

6) (2+4) ÷ (7-4) =

7) (50 ÷ 2) ÷ 5 =

8) 8 x 4 ÷ 2 =

9) 3 + 5 x 6 =

10) 5 + (8 x 2) ÷ (14 ÷ 7) =

Worksheet ANSWER KEY

1) 57
2) 30
3) 117
4) 31
5) 22
6) 2
7) 5
8) 16
9) 33
10) 13

Name:_____
Date: _____

Evaluating Expressions Quiz

1.) $7 \times (3+4)=$

2.) $(14-3) + (2-1)=$

3.) $(14-3) + (2-1) =$

4.) $9 \times (7+1-2) =$

5.) What is the first step in this expression? $(15 \div 3) + 4$

6.) $6 \times (3+1) =$

7.) Write 3 expressions with parenthesis and give the answer (3 pts).

Evaluating Expressions Quiz

Answer key

1.) $7 \times (3+4) = 49$

2.) $(14-3) + (2-1) = 12$

3.) $(5-2) - (2-1) = 2$

4.) $9 \times (7+1) = 72$

5.) What is the first step in this expression? $(15 \div 3) + 4$

$15 \div 3$

6.) $6 \times (3+1) = 24$

7.) Write 3 expressions with parenthesis and give the answer (3 pts).

Various answers:

Example: $(1+1)-2 = 0$

Score: _____/10

Each correct answer is worth 1 point. Questions 1-6 are worth one point each and question 7 is worth three points. 7 out of 10 points is the minimum needed for mastery.

Number correct:	Percent:	
0-4	0% -49%	Falls Far Below
5-6	50%-69%	Approaches
7-10	70%-100%	Meets Mastery Level