NCEA Math Lesson Plan

Grade: 6 **Subject:** Mathematics

Domain:
Mathematical Expressions

Standard Number(s) and Description:
6.EE.2.A: Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 – y.

Vocabulary to be Highlighted:

Mathematical Practices (#):
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
6. Attend to precision.

Essential Questions:
When do we use algebraic and numeric expressions?
How do we translate verbal ideas into the language of mathematics?
How do we translate mathematical ideas into English?
What words or phrases in a verbal expression translate to each mathematical operation?

Materials/Tools (include technology):
Language of mathematics: Table of Key Words
Bible Numerology: Bible Numbers
Cards for matching game (see below)
Kahoot teacher account (free: https://create.kahoot.it)

Connections to Other Math Domains:

Connections to Other Subject Areas:

Catholic Identity Component:
Connect numbers used with significant numbers in the Catholic faith.

Resources (attachments):

Activities/Timeline:
Step 1
Activate prior learning by asking students to identify words they already know associated with the operations of addition, subtraction, multiplication, and division. In groups, students will sort math vocabulary (introducing new words and phrases for operations). Refer to the Table of Key Words under Materials. Print a table for each group and cut into individual words/phrases. Distribute one set of word cards to each group. Students will sort the word cards according to operations. Use whole class discussion to reason and construct arguments for classifications.

Step 2
Give the students written phrases containing math vocabulary and biblical numbers, i.e. "A number, *k*, is increased by the number of Apostles." The students should translate the phrases into algebraic expressions, i.e. $k + 12$.

Example Questions:
The sum of *q* and the number of Fruits of the Holy Spirit ($q + 12$)
The difference of a number *t* and the number of days in Lent ($t - 40$)
The product of the days in the creation story and a number *p* ($7p$)
The number of disciples sent out equally shared by *x* cities ($72 \div x$)
The number of the day man was created less than a number *h* ($h - 6$)
A number of loaves of bread *b* shared equally by the Apostles ($b \div 12$)
A number *n* more than the number of tribes of Israel ($12 + n$)
The quotient of a number *n* and the biblical number associated with the Triduum ($n \div 3$)
The ratio of a number *q* and the number of days Jonah spent in the belly of a fish ($q / 3$)
The number of Corporal Works of Mercy decreased by a number *m* ($7 - m$)
The number of days from Easter to Pentecost split into *p* parts ($50 \div p$)
The total of a number *f* and the number of Beatitudes ($f + 8$)
The number of Fruits of the Holy Spirit tripled and then raised by a number *w* ($3 \times 12 + w$)
Two-thirds of a number *t* increased by the number of times Jesus taught Peter to forgive ($2/3t + 490$)
A number *f* combined with three-fourths of the number of books in the New Testament ($f + 3/4 \times 27$)

Step 3
Given an algebraic expression, the student will provide a written phrase containing math vocabulary and a biblical number, i.e. given $g - 7$, the student may answer "A number, *g*, is decreased by the number of sacraments." Remind students to use a variety of words in their examples.

Example Questions:
$a + 8$
$10 - b$
$12c$
$d \div 5$

Step 4
Play the matching game. Cut out the cards (below) and distribute to the students, one card per student. Students will then walk around the room looking for the matching card. For further enrichment, create cards that have more than one matching answer, i.e. "$3 + a$" could match with "three more than *a*," "three added to *a*," or "the sum of 3 + a."

Formative Assessment (what to look for, how/when to look):
Assess student understanding by playing a game of Kahoot. Kahoot is an online quiz site where a formative assessment for this activity has been created. Create a free Kahoot account at https://create.kahoot.it. Copy and paste the link below into your browser and login. Duplicate this quiz and now it is yours with a pin # for your students' use.
https://create.kahoot.it/#quiz/e39a8039-e5d2-4cee-98fe-fb05f386adeb

Summative Assessment:

Sample Cards for Matching Game

h + 56	The sum of h and 56
23 – 19	19 less than 23
9 + t	t more than 9
34w	34 times w
24 ÷ 3	24 divided by 3
23 x 19	23 times 19
t - 9	t minus 9
34 ÷ w	The quotient of 34 and w
3 x 24	3 groups of 24
621 + s	The sum of 621 and s