Lesson Plan

STEP 1: Heading

Date:	Monday, December 3, 2018
Teacher(s) Name:	Meagan Wentworth
Grade Level(s):	3rd Grade
Title of Lesson:	Exploring Multiplication Squares
Content Area(s):	Math

STEP 2: Lesson Goal(s) – Stage 1

Identify what students will understand, know or be able to do.

Students will be able to recognize and understand what a multiplication square is.

STEP 3: Links to Curriculum Standards – Stage 1

Access district curriculum framework or state standards.

3.OA.1, 3.OA.7, SMP6, SMP7

Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.

STEP 4: Introduction – Essential Questions

How will you capture the students' attention and access relevant background knowledge?

On centimeter grid paper, I will have them draw an array with 3 rows of 3 x's in each row. They will also need to include a number sentence. Ask, "What do you notice about the two factors, the numbers being multiplied together?" They should say that they are both 3. Tell them, "Today we will create and explore more arrays with equal factors." This is the introduction to the lesson.

STEP 5: Teaching Presentation – Lesson Structures

Includes input, modeling and activities. Include at least one higher-level question that you will use during the lesson. Remember the structuring of a lesson: mini-lesson, mini-lecture, turn-and-talk, strategy lesson, etc.

At their seats, they will then turn to page 86 in their math journal. I will hand out the centimeter grid paper. They will work to draw 3 different arrays, 4 x 4, 6 x 6, and one of their choosing between 2 and 10 and write the appropriate number sentences. I will then have them refocus their attention to the front of the room where we will discuss the arrays. I will ask them the following questions:

How does this number sentence match this array? (pick one of the arrays to look at, 6 x 6)
Sample answers: The factors are the same as the number of rows and columns. The product is the same as the total number of dots in the array.

How are your arrays alike?
Sample answers: They are all squares.

Why are they all square?
Sample answers: They have the same number of rows and columns; the sides are the same length.

How did you figure out the product?
Sample answers: I skip counted by columns. I knew part of the product and added the rest.

STEP 6: Lesson Modifications and Adaptations – Stage 3

How will the input or activities be modified for at-risk learners or adjusted for high achieving students?

For high achieving students, I may have them draw an additional array with larger numbers. For at-risk learners, I will have them draw a square around their finished array so that the visual is clear.

STEP 7: Formative Assessment of Learning Goal – Stage 2

How will I know if students are meeting the goal? How will students self-assess their understanding?

Students who are able to draw an array as a square will understand the task at hand. If they are struggling to see the square, then I will know that they do not quite get it. It also is important for students to write down the number sentences and see that the two factors are the same. If they do not understand this piece as I walk around and check their work, I will also know that they are struggling.

Homework (If applicable) Homework should deepen student's skills level or understanding related to the lesson goal.

None

STEP 8: Closure – Stage 1

Reviewing and clarifying the key points of a lesson. Reflect on enduring understandings and essential questions.

We will bring the class back together one final time to write down the number sentences. Tell them that every array is a square when there are the same number of columns as there are rows. The lightbulb moment: These facts are examples of **multiplication squares**. This means that both factors are the same and have square products.