Multiplication

Upper Primary and Secondary

Key Inquiry Questions

1. What does multiplication look like?
2. What does multiplication sound like?

Learning Outcomes

1. Students will be able to solve one-digit multiplication problems by the end of the lesson.
2. Students will be able to know all of their multiplication facts by the end of the lesson.
3. Students will be able to solve and create word problems using multiplication problems by the end of the lesson.

Overview

In this lesson, students learn different types of multiplication. This lesson is set up over three different lessons. The first lesson is learning the basics of multiplication and learning what it means and what it looks like. Students will learn by doing a class example and then by doing partner work. Students will turn in a sheet solving three example problems to show their knowledge of basic multiplication. The next lesson is all about learning multiplication facts. With multiplication comes with a lot of memorization. The more students practice, the faster they are gonna learn. Lastly, there is a lesson on word problem using multiplication. Students will be learning how to read and solve word problems and will eventually create and solve their own word problem.

Materials

SolarSPELL Resource:

1. "Multiplying Whole Numbers and Applications 1" (Math > Multiplication and Division)
2. "Multiplication Word Problem Example 1" (Math > Multiplication and Division)

Other:

1. Paper
2. Writing Utensil

Suggested Procedure

For teachers: review the video Multiplying Whole Numbers and Applications 1 before the lesson.

Basic Multiplication Lesson:

- On the board write the example: 5 + 5 + 5 + 5 + 5 + 5 + 5
    - Explain to students that they are going to be rewriting this expression in three different multiplication expressions.
        - Tell students multiplication means to duplicate by a certain number of times.
    - For the first expression, count how many times you are adding 5.
        - Let students count how many 5's there is.
        - Have students shout out the answer: 7.
    - Tell students to think of it as we added 5, 7 times.
        - Explain to students, another word for multiplication is "times".
    - 5, 7 times, written mathematically looks like: 5 X 7
        - 5 X(times) 7
    - Another way to write times is with a dot: 5 • 7
        - 5 • (times) 7
    - Ask students to solve the problem.
        - Answer: 35.
    - Once students have solved the problem ask a few students how they solved the problem.
    - Explain to students the problem can be written backwards and you can still get the same answer: 7 X 5
    - Ask students to solve the problem by adding 7, 5 times.
        - They should figure out they can still get the same answer when it is written the other way.
    - Give students 3 problems to solve with a partner:
        - 4 X 3
        - 2 X 6
        - 9 X 0
    - Go over each problem with the students as a class.
        - For 9 X 0, explain to students the rule for multiplying by 0 is: anything multiplied by 0 is 0.
    - Give students 3 problems to do on their own and to turn in:
        - 10 X 3
        - 1 X 6
        - 8 X 2

Multiplication Facts:

- Give students, or have students copy on a sheet of paper, this table of multiplication facts.

- Tell students to work on their math facts every night to help them remember multiplication quicker.
- Everyday, have students get with a partner.
    - Set a timer for 2 minutes.
    - Have students quiz each other on their multiplication table together for the two minutes.
    - After two minutes has passed, tell students to switch. Now the other student will quiz the other student.
- This can also be used as a small warm-up for students before a math lesson.

0	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Word Problem Multiplication:

- View the Multiplication Word Problem Example 1 located on the SolarSPELL.
    - Have students follow along with the problem on a piece of paper.
- Once the video is over have students talk to the person closest to them and explain the problem all over again.
    - Students will walk their partner through what happened in the problem in their own words.
    - Both partners need to explain.
    - Give students 5 minutes for this.

- Have students work with their group members to answer these three word problems:
    - John has 5 friends and want to give them 3 cookies each, how many cookies does he need?
        - Answer: 15 cookies -> 5 X 3 or 3 X 5
    - Christina wants to plant 10 rows of 4 eggplants. How many eggplants are there?
        - Answer: 40 eggplants -> 10 X 4 or 4 X 10
    - Rose 3 apples to make one apple pie. If Rose wants to make 6 apple pies, how many apples does she need?
        - Answer: 18 apple pies -> 6 X 3 or 3 X 6
    - Give students 15 minutes to work with their partners to solve all three.
    - After 15 minutes, have 3 volunteers show the class how to solve one of the word problems.
- After the three example word problems, tell students they will now make up their own word problem.
    - On a piece of paper students need to include the following:
        - A word problem using multiplication.
        - Work solving the word problem.
        - A picture to represent the word problem.
    - Students will turn in their word problems to show their knowledge of word problems.