

Music and Multiplication



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VITAL INFORMATION

Subject(s):	Mathematics, Music
Topic or Unit of Study:	Multiplication practice
Lesson Type:	Group participatory lesson. Students clap to multiplication.
Grade/Level:	
Language of Lesson:	English, with available adaptations for ESL
Prerequisites for Student(s):	Students should be able to count up to three digit numbers.
Source:	
Summary:	Students will practice multiplication by clapping and counting. This chant style practice will build solid foundations of the concepts of multiplication.

LESSON DESCRIPTION

Description of Student Group:

Objective: Students will be able to demonstrate the repeated addition algorithm of multiplication after practicing in a group setting.

Standards:

CA- California K-12 Academic Content Standards

- **Subject :** Mathematics
 - **Grade :** Grade Two

By the end of grade two, students understand place value and number relationships in addition and subtraction, and they use simple concepts of multiplication. They measure quantities with appropriate units. They classify shapes and see relationships among them by paying attention to their geometric attributes. They collect and analyze data and verify the answers.

 - **Area :** Number Sense
 - **Sub-Strand 3.0 (Key Standard):** Students model and solve simple problems involving multiplication and division:
 - **Standard 3.1 (Key Standard):** Use repeated addition, arrays, and counting by multiples to do multiplication.
 - **Standard 3.3 (Key Standard):** Know the multiplication tables of 2s, 5s, and 10s (to "times 10") and commit them to memory.
- **Subject :** Music
 - **Grade :** Grade Two
 - **Area :** ARTISTIC PERCEPTION

• **Sub-Strand 1.0** : Processing, Analyzing, and Responding to Sensory Information Through the Language and Skills Unique to Music
Students read, notate, listen to, analyze, and describe music and other aural information, using the terminology of music.

• **Concept** : Listen to, Analyze, and Describe Music

■ **Standard 1.3** : Identify ascending/ descending melody and even/ uneven rhythm patterns in selected pieces of music.

■ **Standard 1.4** : Identify simple musical forms, emphasizing verse/ refrain, AB, ABA.

Materials: none

Procedure: This lesson will begin with the students forming a circle. The teacher will explain that they will be playing a counting game that requires them to practice rhythm, timing, and pitch.

The teacher will begin the lesson by modeling the following process:

1) A simple multiplication problem is placed on the board. The product of this problem should be less than or equal to the number of students in the classroom.

2) The teacher claps one of the factors (the 2 of $2 \times 6 = ?$) down low, in a low voice, growing in pitch with each number counted. As they reach the number, they clap up high, in a very high pitched voice. In this example, 2 would be clapped alternately between a low pitch (clapped below the waist) and a high pitch (clapped above the head).

3) The teacher shows that as all 6 groups of two are counted out, we end up with 12 students with their hands clapped together.

After modeling the process, the teacher will practice with the kids. It would be best to pre-design some problems that have products close to the number of students, so that all students get involved in the activity.

This activity should be varied between problems by asking the students to use a "descending" set of notes, rather than an ascending set. The teacher can also ask the students to identify the patterns of up/down hand claps ($2 \times 6 =$ d,u,d,u,d,u,d,u,d,u,d,u; $3 \times 3 =$ d,d,u,d,d,u,d,d,u) and write the pattern down. These written notes should be explicitly tied to the multiplication problem, and the teacher should point out that if one were to count the number of u's and d's, they would find the answer to the multiplication problem.

This lesson, once practiced, should be used on a daily basis for one or two problems, to help reinforce common multiplicative patterns.

Accommodations for English Learners:

Students can use native languages to count the numbers, and practice with the whole class. The teacher should have the students count in other languages that English, especially for problems with factors of one, two, or three. Students can learn the "common three" languages of Spanish, French, or German ahead of time to make it easier to adapt other languages.

**Accommodations for
Special Needs
Students:**

Research Base:

Technology:

Time Allotment: 1 class period. 10 Min. per class.

ASSESSMENT AND REFLECTION

Evaluation of Lesson:

Reflection:

Assessment/Rubrics: This lesson should be used as daily practice for multiplication. The evaluation of the lessons should be reflected in a general improvement of multiplication problems on tests and homework. An informal evaluation of the lessons could be observed in students practice of counting out groups of numbers to multiply. This might be observed in students silently counting to themselves, tapping on the desk, or miming the clapping of up/down patterns during work.