Facilitation Guide

5-7 Min Launch

Digital Guide

ARTS EVERY DAY IN BALTIMORE CITY PUBLIC SCHOOLS

Explore Brain Science

EMBODIED COGNITION

ARTFUL REPETITION

Multiplication DJ

ROUTINE OVERVIEW

In this lesson launch, students become "DJs" and use rhythm and movement to represent a given multiplication equation. Each student creates a short body percussion beat sequence based on the first factor, then loops that sequence according to the second factor. Students perform their rhythms while classmates listen, count the beats and repetitions, and try to identify the secret multiplication equation. The activity gives students a physical and creative way to experience how factors and products work together before representing the same idea with drawings, models, and equations.

Maryland Standards

MARYLAND STATE MATH STANDARDS

- **3.NOS.B.2** - Represent and interpret multiplication of two factors (0- 10) as equal groups or as a composed unit that can be repeated/iterated. Explain the relationship between the factors and products.
- **3.NOS.E.9** - Recall or quickly derive multiplication and division facts within 100 (e.g., factors less than or equal to 10 and quotients less than or equal to 10).

MARYLAND ARTS STANDARDS

- **MU.AS1.I:3-5:1** - Conceptualize and generate musical ideas for an artistic purpose and context, using appropriate technology as available.

Not in MD? View National Standards in the Digital Guide

Getting Ready

REVEAL MATH: 3rd Grade: 3-1, 3-2, 3-3, 3-5, 3-7

ARTS INTEGRATED LEARNING OBJECTIVE:
SWBAT create and perform a repeating rhythm to represent a given multiplication equation, using the first factor as the number of body percussion beats and the second factor as the number of repetitions.

MATH DOMAIN:

Operations & Algebraic Thinking	Represent and solve problems involving multiplication and division	Understanding multiplication as equal groups Connecting repeated addition to multiplication Building fluency with multiplication facts within 100

WHAT'S BEFORE: Repeated addition to find the total number of objects in rectangular arrays.

WHAT'S NEXT: Arrays to represent multiplication. Interpret multiplication as a comparison (4th grade).

MATERIALS:

- Slides
- Multiplication Cards
- Rhythm or movement cue cards
- Marker
- Whiteboard/Chart Paper
- Optional: Free website that allows students to use sound bites or beats to create their own short soundtrack.
- Speaker

MATH SKILL: Represent and interpret multiplication as equal groups by identifying the number of groups, the number of objects (or movements) in each group, and the total product

ART SKILL: Rhythmic composition

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TEACH

Facilitation Steps

1. **Hook & Introduce:** Announcement: "Today, everyone is a DJ!" Explain that they will create an original beat loop to represent a multiplication equation.
2. **Assign Equations:** Distribute a unique multiplication card to each student.
   - Example: 4 x 3 = 12
3. **Define the Parameters:** Explain the DJ production rules:
   - **First factor** = The number of distinct beats in the sequence.
   - **Second factor** = How many times to loop (repeat) that sequence.
   - **Product** = The total number of beats performed.
4. **Model (Crucial Step):** Physically demonstrate the example
   - 4 x 3 =12
   - *Example*: Perform 4 distinct beats (*clap, clap, stomp, stomp*). Loop that exact sequence 3 times total, counting aloud to show it equals 12 total beats.
5. **Independent Studio Time (2 Mins):** Start a 2-minute timer for students to compose and practice their beats in their own space.
6. **Perform & Guess:** Select 2 solo DJs to perform. Instruct the audience to silently count the beats and loops to guess the performer's secret equation.

Possible teacher language:

- *"I noticed our rhythm repeated. What mathematical pattern do you notice?"*
- *"Where do you see the groups?"*
- *"How does our movement show the multiplication equation?"*
- *"Can we represent this same idea with a drawing or array?"*

***Note:** Remind the class to support and celebrate each DJ's unique musical interpretation with applause.

***Digital Extension:** If devices are available, students can arrange their beats using online music production platforms such as Scratch.mit.edu, Musiclabs

SLIDES

VIDEO PLAYLIST

MATERIALS
GOOGLE FOLDER

Assessment & Reflection

Students will demonstrate understanding by identifying the number of groups, the number of movements or beats in each group, and the total product. Students will represent their rhythm pattern using a repeated addition sentence, and quick checks during the activity will be used to assess understanding of multiplication as equal groups.

Reflection:
Students will reflect on how movement and rhythm helped them understand multiplication. They will share how repeated patterns connect to equal groups, repeated addition, and multiplication equations. Students may respond to the prompts:

- How did the rhythm help you see multiplication?
- What part of the pattern represented the groups?
- How could you show the same multiplication idea another way?

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Differentiation

Adaptations:

- Teachers can simplify the mathematical complexity by focusing on equal groups as a foundation for multiplication. Limit equations to factors of 1, 2, or 5.
- In order to appeal to different types of learners, provide desktop percussion instruments such as egg shakers, rhythm sticks, triangles, or even hand made instruments. This ensures that students can generate distinct counts without needing complex physical movements or verbal counting.
- Use sticky notes or drawing blocks to represent the factors.

Small Group Instruction:

- Turn it into a "Call-and-Response" game. Teacher or small-group leader acts as the head DJ and plays a "factor 1" beat. The small group must immediately "echo loop" it the number of times required by "factor 2."

Extension:

- Move students onto platforms like *Scratch, Soundtrap, or Music Lab.* Students program their beats digitally using visual grids, mapping out how dragging blocks across a grid directly reflects the repeating columns of a multiplication array.