

Rhythm in fractions

A LESSON PLAN by Artemis Choreftaki
Mavromataki Private School

Grade 3

General Information about the resource:

The specific lesson plan was carried out in the context of the 3rd grade Mathematics lesson, specifically as an extension to the chapter of the book entitled: "Introduction to fractions". It consists of two activities, which aim to consolidate and deepen what material has been presented- taught. The first activity focuses on connecting the concept of the fraction with the musical meter of four quarters ($\frac{4}{4}$), with the aim of the students recognizing and expressing the fractions that arise within the musical meter. The second extension activity focuses on the students' creative expression in the context of their group, through the creation of their own musical measures that contain creative movement.

Keywords: fraction, rhythm, quarter, creative movement

Further notes about the resource and its use:

1. **Cognitive objective:** When we consider four quarters of time as one unit, we teach the concept of fractions and how we can express the same quantity in different ways. Four quarters corresponds to the fraction $\frac{4}{4}$, which is equal to the number 1. This means that four quarters is a unit of time and corresponds to an entire melody or beat in music. In this way, we learn to express time dimensions based on the understanding of fractions and the correspondence in quarters.
2. **Prior knowledge:** Students have already been taught and understand (fully or to some extent) fractions as part of a unit (e.g. $\frac{1}{4}$ of a pizza). Also in the context of the music lesson, they have come into contact with musical notes and the musical meter.
3. **Material and technical infrastructure:** classroom with whiteboard, chairs, optional musical instruments (percussion).
4. **Time:** One teaching period (45 minutes)

Application:

First Activity: We begin our lesson by reminding the students of the musical time of four quarters ($\frac{4}{4}$), and we demonstrate this together by clapping in four equal beats.

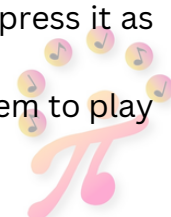
Then, we write a pattern on the table, which we can symbolize with vertical lines or by using some other symbol (e.g. | | - |, i.e. 1, 1, pause, 1), explaining that each vertical line symbolizes a beat within the measure of four.

We ask the children to draw out the pattern on the board and then try to express it as a fraction.

At this point, we can give the children different patterns within the $\frac{4}{4}$ time signature and repeat the process. For example: | - | |, | - | -, | - - |.

We can also encourage students to write a pattern of their own and have the rest express it as a fraction and act it out (clapping).

Finally, if we have musical instruments, we hand them out to the students and ask them to play the patterns individually or several in a row, forming a melody.



Rhythm in fractions

A LESSON PLAN by Artemis Choreftaki

Second Activity:

We start by forming a circle with the chairs and ask the children to sit on them. We are also part of the circle.

First, we show the children our own pattern of movements within the measure of four quarters, that is, a pattern of four movements - beats that last the same time.

We ask the children to repeat the pattern all together, we repeat as many times as necessary even with a different pattern.

We point out that the pattern we draw must be within the measure of four quarters, but it need not consist of four movements. It may have fewer movements and pauses.

At this point, we divide the children into pairs and encourage them to work together to create their own movement pattern within the 4/4 time signature. We give the groups time to work (5-10 minutes).

Finally, each group presents its pattern to the whole class and we all repeat it together, continuing until all groups have presented.

Reference:

Βιώνης, Παναγιώτης. (2018). *Μουσικά Μαθηματικά*. Πανεπιστήμιο Πατρών, σελ. 47-59, available at <https://www.slideshare.net/PanagiotisVionis/ss-86641744>

