

The number stars

A LESSON PLAN by Evangelia Mylonaki
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Grade 1-2

General Information about the resource

With the number stars, we can introduce the multiplication tables. Each of the 10 boards represents a number star that the child has to thread according to the respective coloring row. A typical pattern is created in each case. In this way, children learn about the individual multiplication series in a playful and pictorial way and are very motivated by the task of threading the pattern and the movement. Inspired by the corresponding Montessori material, we created another version of it, adding creative movement instead of using the stationary material. In a Montessori environment, where the children follow the theory of the developmental stages, which are described from Maria Montessori as "Sensitive periods" the recommended age is 4 years old and up, as the children have already worked with materials with the help of which they have acquired a first impression of the size and quantity of the numbers.

Keywords: multiplication table, patterns, creative movement

Further notes about the resource and its use:

1. **Cognitive objective:** The multiplication tables and especially the multiplication of units.
2. **Prior knowledge:** The children have become familiar with addition up to 100, the concept and the process of multiplication, and have already had a first contact with prefiguration.
3. **Material and technical infrastructure:** Spacious room, the corresponding Montessori material, strings (20m) on the color of each number according to the Montessori material (1-red, 2-green, 3-pink, 4-yellow, 5-light blue, 6-purple, 7-white, 8-brown, 9-dark blue, 10-golden). Depending on the color of the string, a typical pattern is created and we can also offer control cards as additional material to help children learn how to learn independently.
4. **Time:** One teaching period (45 minutes)

Application

First Activity:

- Sitting in a circle, the teacher introduces the corresponding Montessori material so that the children become familiar with the process.
- The teacher "weaves" the stars of the numbers one by one as the children say the multiplication row all together.
- The teacher gives the children the opportunity to interact with the material in a circular way (either individually or in small groups). They separate the children to different points in the classroom where they can use the material on their own and after 2-3 minutes (after making the star of each number once), they move to the next point, to the next number.



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Second activity:

- 10 of the students make a circle, they agree on which star to create and choose the corresponding color of string or ribbon. They also decide which child will start and then the ribbon is moved clockwise.
- To the sound of gentle music in the background, so that the children can be heard as they say the multiplication, the ribbon is passed from one child to another. Just as the ribbon was passed around the pin of each number in the original material, so now when the children get the ribbon, they can make a turn around themselves or some other creative movement to stabilize the ribbon at their spot.
- The process is repeated for each number, and if the group includes more than 10 children, the participants in the circle can be changed.
- Finally, giving the children a trigger to take their thinking one step further, after one circle is completed, we can ask the children how they imagine the circle will continue and where they think the next number will be in the circle. Particularly if we have a large group of children, we can have a large circle where everyone participates, trying to continue the specific multiplication row.

Reference:

https://www.montessori-material.de/arbeits-und-lehrmittel/mathematik/zahlensterne-fuer-das-kleine-einmaleins_563_1349

