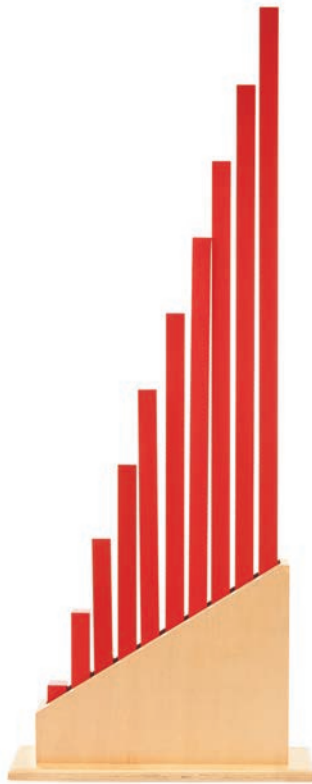


# About Red Rods



Red Rods



Teacher demonstrates comparing a rod against other rods



"This most important set of blocks will have its principal application in arithmetic, as we shall see. With it, one may count from one to ten and may construct the addition and other tables, and it may constitute the first steps in the study of the decimal and metric system." — Maria Montessori, *The Montessori Method*, p. 193.

## Material Description

The Red Rods are a series of ten red, wooden rods 2.5 cm wide and 2.5 cm high, whose length increases by 10 cm with each successive rod; therefore, the rods increase in size in one dimension — length. The smallest rod is 10 cm x 2.5 cm x 2.5 cm, the second rod is 20 cm x 2.5 cm x 2.5 cm, and so on, up to the largest, which is 100 cm x 2.5 cm x 2.5 cm. The rods are all the same color so that the concept of length is isolated for the child. The Red Rods are displayed vertically in their own wooden stand in the sensorial area.

## Discovering More

- The presentation is a grading activity.
- The substantial length of the longer Red Rods makes them more awkward to carry and maneuver than any of the Pink Tower cubes or Brown Stair prisms. Montessori noted that these rods require that the child control his whole body as he moves them, thereby helping the child develop coordination.
- Some children in the early childhood years do not perceive differences in length visually, at least not at first. Instead, these children must learn to perceive the differences in length by handling the rods and experiencing the differences in how each must be handled and how the rods vary in length relative to their own bodies.
- The Red Rods activity is sometimes referred to as the Long Stair.
- Number Rods (in the math curriculum) build on the Red Rods presentation to introduce numbers and quantity. The Number Rods are the same dimensions as the Red Rods, but they have red and blue segments to represent each unit of length.

# Activity Working with the Red Rods



Working with the Red Rods

## Purpose

To help develop a child's visual discrimination of length.

## Material

Red Rods.

## Presentation

- Invite a child to the sensorial area to introduce the Red Rods.

### Age

- 3–3.5 years old

### Direct Aim

- To develop visual discrimination of length.

### Indirect Aim

- To introduce mathematical concepts such as length, counting, addition, and the decimal system.

### Control of Error

- Visual.

### Points of Interest

- Carrying the long rods carefully.
- Feeling the length of each rod.
- The weight of the rods increases in proportion to their length.

### Vocabulary

- Long, longer, longest.
- Short, shorter, shortest.

### Note

Select a work space away from the shelf because carrying the material is essential to the activity.



Child carrying the longest Red Rod

### Montessori Moment

Dr. Montessori recommended that the child carry each of the longer Red Rods horizontally so that the impression of great length is experienced from the very start of the activity.

However, due to safety concerns, it is common practice today to carry the rods vertically and close to the body.



Placing the longest rod at the top of the mat



Admiring the completed stair

- Demonstrate how to retrieve the Red Rods and carry them to the mat, starting with the shortest rod. Explain to the child how the four shortest rods are carried individually using one hand. The longer rods are carried individually in front of the body where it can be watched.
- Place the Red Rods on the mat in random order and not touching each other.
- Tell the child that you are going to build a stair with the rods.
- Select the longest rod and compare it in size to the other rods so the child can see it is the longest. Isolate it by placing it at the top left-hand side of the mat.
- Choose the next longest rod and compare it in size to the remaining long rods. Place it slowly and methodically below the first rod so the left ends of the rods are flush.
- Repeat the previous step with the remaining rods until the long stair is complete.
- Gently glide your open hand along the right edge of the completed stair from top to bottom.
- Admire the long stair with the child, viewing it from all angles.
- Dismantle the long stair, and place the rods on the mat in random order.
- Invite the child to repeat the activity.
- After the child has finished working with the Red Rods, demonstrate how to return the material to the sensorial area. Start with the longest rod and rebuild the rods in the stand.
- Tell the child that he is now free to work with the Red Rods in the same manner.

## Three-Period Lesson

- Perform with relevant vocabulary.



## Extensions

### Measuring the Difference Between One Rod and the Next

- Invite the child to build the long stair.
- Demonstrate how the shortest rod is the unit of measure for the difference in length between consecutive rods. Place the shortest rod next to the second longest rod in the stair. Show the child that the two rods together are the same length as the longest rod.
- Invite the child to move the shortest rod down the steps created by the rods, and complete the process by replacing the rod in its original position.

### Building the Long Stair Vertically

- Invite the child to build the long stair by placing one rod on top of the other. Align the rods on the left-hand side.

### Removing One Rod

- Invite the child to build the long stair.
- Ask the child to close his eyes while you remove one of the rods. Place the rod beside the stair, and then realign the stair.
- Ask the child to open his eyes, indicate where the rod belongs in the stair, and then replace the rod.
- Repeat this procedure removing other rods.

### Performing a Stereognostic Exercise

- Place the four shortest rods behind the child's back. Invite him to find each rod in order without looking and build a stair.



Demonstrating that the shortest rod is the difference between one rod and the next



Measuring the difference between one rod and the next



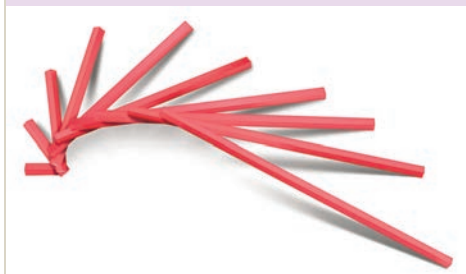
Building the long stair vertically



Child carefully walking in the Red Rod maze

### Creative Ideas

See NAMC's Curriculum Support Material for an image of the following idea and many more.



### Building a Maze

- Invite the child to build a maze with the Red Rods, starting in the center with the smallest rod.
- Add the next longest rod onto the end of the smallest rod and perpendicular to it.
- Continue adding rods in this manner to build a spiral maze.
- Suggest the child carefully walk into and then out of the maze.