

# Toddlers as Scientific Colorists: A Toddler's Story

by Christina Aubel

The toddler stood watching and waiting. She wrapped her chubby fingers around the playground's chain link fence and as she pressed her forehead into the links, her long bangs fell over her eyes. Through wispy bangs she studied every movement of the children on the other side of the fence as they dipped their brushes into small round glass jars of watercolors. I wondered what she was thinking and if she would wait or wander off toward the swing.

The children at the table were taking their time dipping and painting. That was the point — to give them the time they needed to feel the glide of a wet brush across a good textural paper. A colleague of mine, Harriet Lefton, said, "You give children time until they are full up." And that's exactly what I intended to do.

It was a hot day, but the girl did not let go of her grip on the fence. I explained that other children were having a turn to paint, but that she was welcome to wait and watch. She remained patient, observing the progress of the others painting. When one child decided he had painted enough, I opened the gate and as he walked out she walked in, taking a place at the table. She waited for me to refill the jars with yellow and red liquid watercolors. She picked out a paintbrush and knew exactly what to do — swish the brush in a bit of water, dip it in a jar of paint, and glide the brush along the paper. She had been watching and learning. I was enthralled by her studiousness and the seriousness with which she worked. She stayed with the process and was not getting full.

Her brow furrowed as she brought the little glass jar close to her eyes. She dipped the brush into the paint and swirled gently. Then, bending her head closer, she examined the paint. I thought she was not so much interested in the act of painting as she in the paint itself. It was as if she was looking through a microscope. She was telling me she was a scientist developing theories about liquid watercolor and she was using the painting process to conduct her research.

## Materials

Infants and toddlers depend on us to believe in them and to provide them with the materials with which to learn. If we give them only one kind of brush, one kind of paper, or one color of paint, then we are giving them only one way to learn and expecting them to learn everything from it. Infants and toddlers will show us their brilliance and capacity to learn. If we want them to continue developing throughout childhood and into adulthood, then teachers must offer them the tools that they need to thrive as mathematicians, scientists, inventors, teachers, or anything else they choose for their

lives. High-quality brushes, actual watercolor paper, and some good watercolors are not only quality materials; they are every child's educational right. The educators from the schools of Reggio Emilia believe the materials we offer children should be 'intelligent materials.' The idea being children are capable, competent, and intelligent beings who will communicate their capability, competence, and intelligence through the use of materials chosen with this intention. Intelligent materials are those that rise to a child's capacity to learn. Infants and toddlers not only depend on us to offer them an abundance of these materials — they depend on us to advocate on their behalf for the use of such materials.



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She is passionate about teaching adults how to reclaim their creativity and artist within. Her most profound teachers have been her youngest students — infants and toddlers.

## Color

The very act of mixing colors and watching the change in color is at once a sensory, empathetic, and scientific experi-

ence. If we do not give children the opportunity to enter that experience and sit with it for as long as they need, then we deny them a fundamental academic step they need to understand color and how it informs their world. If we have sight, we develop a relationship with color in our world:

- Each of us imagines a certain sky blue, leafy green, and red soil based on our life experiences.
- Color gives expression and language to our feelings of empathy.
- A color may represent sorrow or joy depending on one's culture and/or ethnicity. Either way, it expresses emotion.
- Each of us has a favorite color — or two. How do we define our favorite color? Perhaps it is simply that when we look at a certain color we feel lighthearted and relate to its vibrancy.
- Color is a connection we have with another human being. “Your favorite color is orange? Mine too!” A child I know has a favorite ‘mimi blanket,’ and I wonder if she not only needs the feel of it on her face and in her hand, but if its colors are also soothing and calming to her.

## Water and Color

Children are captivated by water. Aren't we all? We need water to thrive. We drink it. Immerse ourselves in it. Play in it. Water is survival. Add droplets of water to the dry earth and the dirt changes in color from pale beige to dark red brown. In the same way, a few drops of water changes a dry cracked pot of paint into a pool of silky color. This change is fascinating to a child, especially when he caused the change to occur. If a teacher asks a child how he made the color change, a common answer for a toddler with some vocabulary is, “I did it.” A common answer for a toddler with no vocabulary might be a smile or a perplexed studiousness, which means they are thinking. The art-making process has a lot in common with the recursive, scientific (change) process; we consider the results of our efforts, after which another round of experiments is conducted to prove or disprove a theory.

Recently I introduced two toddlers to the same watercolor painting experience that I have been using for years with this age group. I had limited time and basic materials. Although I used the same liquid watercolor as always, the paper was thin and the brushes were stiff.

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I went against my instincts and pushed through this process. This is where I fell down. The toddlers were interested, but not in the same engaged way I've seen other toddlers. I wondered if it was because I had not given them a

thicker, more textural watercolor paper and soft absorbent brushes that they seemed less interested in the process of painting. They showed the greatest interest in holding the small glass jars and pouring the colorful liquid watercolor from one jar into another, appreciating the weight, curve, and feel of the jars in their hand and enjoying the gentle clink of the jars one against the other as they poured.

I love when I learn from a child. Watching these toddlers, I remembered in biology class how I enjoyed holding the beakers: how carefully I held each one, and how I liked the gentle clinking sound as they touched. I understood the sensory experience of holding a jar that fit so snugly in one's hand and how I needed to be careful when pouring. These children demonstrated that they could pour capably; and when they spilled, they knew how to mop up the spill with a paper towel.

Was this an art-making process or a scientific process? In reflection, I think it was both. I was disappointed because

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I felt I had not shown their teacher how beautifully a child could paint. Then I realized that although the process of painting had gone awry, the process of mixing colors, while balancing two delicate jars, was how these children were learning about the art of mixing colors, as well as the scientific process of creating a change. I was reminded of the significance of offering children learning experiences in which to be playful. I felt joyful watching them. I think they felt a similar joy.

## Painting

The process of painting is like learning to walk. We would not lift an infant upright and begin moving their legs to teach them to walk because we know they first need to strengthen their core muscles. The physical growth process to reach that point of coordination between eyes, arms, legs, feet, and the whole body so that we can maneuver those first steps takes us months. For some it may be ten months, for others 13 months or more, but eventually the typically-developing child will walk. Children developing otherwise may need added assistance to walk and perhaps more time to build their core muscles, but they, too, may either walk or gain strength to advance and move their bodies in other ways.

In the same way we would not push a child to walk, no matter their developmental stage, we should not hand an infant or a toddler a brush, paper, and paint and then be perplexed because they first want to feel the bristles of the brush or the slippery wet of the paint across the palm of their hand. We should not wonder why they grab hold of the paper, waving a chubby fistful of paper in the air, smiling at us as if to say, "See! I know how to lift, grab, and wave!" We should not be impatient when they take their time to examine the shiny ferrule that joins the brush to the handle. They are telling us through their actions that they want and need time to study the brush and the paint in the same way an infant studies her wiggling toes, extending her fingers until they finally grab hold. They practice over and over how to grasp and grab. They are informing themselves about how to control those things called toes. They stretch their minds and their bodies instinctively to inform and learn. This, too, is how it is with the process of painting.

We can learn from infants and toddlers about how to better appreciate color and painting because they are experts at taking their time with the process of learning.

Once infants and toddlers have had the time they need to consider a brush, paper, and paint, then they are ready for the process of painting. The act of painting is a different creative process for every painter, as is determining when it is complete. Painting side by side can be a wonderfully

collaborative experience for a toddler or it can be a time for individual design. A painting may fill the paper with color or it may have drips and dabs of many colors. If the painter has the words, he may tell us the story of his painting. Some painters simply paint, and then walk away as if to say, "I've said all I have to say with this piece." Painting is a process that takes as long as it takes, until the painter is full up. That's how it is with artists.

I have never had a child say to me they want to 'make art.' I have had many children over the years say to me or show me through gesture, "I want to paint," "I want to draw," or "I want to dance." We can learn from infants and toddlers about how to better appreciate color and painting because they are experts at taking their time with the process of learning.

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