

A “Toolbox Approach” for Developing Thoughtfully Structured, Creative Art Experiences

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Art and creativity are closely linked in the minds of most people. When asked to explain why art should be part of the school curriculum, respondents commonly answer that art provides an opportunity for students to be creative and express themselves. As professionals who have worked with art education for years—an administrator who works closely with teaching artists engaged in long-term classroom-based teaching residencies, and a psychologist specializing in the development of creativity—we suggest a different perspective. In this article we draw on research that shows how difficult it is to teach students to be creative, and how lessons, including art lessons, need to be thoughtfully structured in order to foster creativity.

To help teachers facilitate students' creative development, we offer a 'toolbox approach' to teaching creativity. This approach encourages teachers to mine existing research as well as personal experiences to develop strategies that can foster creativity. A teacher's Creativity Toolbox is a set of concepts and techniques that a teacher develops over time to help students think and act creatively. In collaboration with students, teachers may also develop a class toolbox, which includes relevant concepts and techniques that are part of a classroom culture. Finally, students can develop their own toolboxes, which include interests, activities, goals, and habits of mind that spark their curiosity and help them to think creatively.

Art teachers, like other teachers, face the challenge of cultivating creativity within a structured environment. In order to teach skills, concepts, and information effectively, art lessons sometimes require well-defined processes and outcomes, and the very idea of creativity resists such recipes. In successful classrooms we have observed, art teachers and teaching artists find ways to challenge students to consider new possibilities, engage in self-directed processes, and create unique products that reflect students' own ideas. They innovate in ways that are appropriate but could not have been predicted by the teacher. Students in these classrooms are engaged in interesting, sophisticated, creative, and often surprising work.

In this article, we start by examining ways of defining creativity, as it is a concept that even people immersed in creative work find difficult to describe. We will make suggestions for art teachers regarding developing their own Creativity Toolboxes. Finally, we will give an example of a classroom in which a teacher puts some of these ideas into practice.

Creative Development over a Lifetime

There are two general approaches to thinking about creativity. The first is to understand it as development of a unique point of view over a lifetime; the second is as a set of specific techniques or habits that help people think in different ways. Each of these approaches has supporting research and implies certain approaches to teaching.

Creativity can be understood as development of a unique point of view over a lifetime. This idea is recognized by a number of prominent creativity researchers (e.g., Gardner, 1993; Stokes, 2006; Torrance, 2002). Howard Gruber (1989, 1999) found that people who do creative work at some point, or over time, come to commit their time and resources to creative goals and then organize their lives and activities—what Gruber referred to as their *network of enterprise*—to meet those goals.

There are, however, significant problems in applying this long-term view of creativity to the classroom. First, it requires teachers to think simultaneously of the class as a whole, learning a shared set of skills and knowledge, and of individual students, developing particular interests, talents, goals, and perspectives. Certainly, almost all teachers accomplish this to some extent, but the classroom context forces a primary focus to be shared classroom goals as outlined in a unit or lesson plan. A second problem is that the ultimate creative outcome, development of the individual's unique point of view, does not happen within any individual class, but is a long-term pursuit.

Even when we think of creativity as a group process, as in recent research on *distributed creativity* (Sawyer, 2007; Sawyer & DeZutter, 2009), individual team members bring their knowledge and ways of thinking, their own Creative Toolboxes, to the group. It is individuals who take what they learn from that group to their future work. In a classroom, unlike a business setting, learning is a primary objective. Thus, thinking about a class project as a creative group process may add important collaborative skills to a student's toolbox, but it does not escape the challenge of addressing each individual's creative development.

In whatever ways students decide to be creative, they will need to appreciate their own distinct perspectives and will need to learn to express those distinctive aspects of themselves in skillful and powerful ways that others can appreciate.

Techniques that Help Students Think in Different Ways

The second way to think about creativity is more reductive: to teach students specific techniques or habits that help them think creatively. The idea of *divergent thinking* (Guilford, 1950; Torrance, 1963/1984) as a cognitive trait of people who tend to think "outside the box" is one such idea. Other approaches tend to prescribe processes, even providing formulas. For example, the Osborn-Parnes approach, known as the *Creative Problem-solving Process* (Osborn, 1963; Parnes, 1981), prescribes six steps: objective-finding (or "mess-finding"), data-finding, problem-finding, idea-finding, solution-finding, and acceptance-finding. In

this approach, each step includes a brainstorming or divergent thinking phase where numerous ideas are produced, followed by a convergent thinking phase where ideas are evaluated.

Following such a formulaic concept of creativity consciously, however, has at least three big problems. First, a formula for creativity is self-contradictory. Second, while formulaic models offer techniques that can generate creative products, creativity can describe processes as well as products. Finally, these approaches assume that creativity is equivalent to problem solving. But creativity is not just problem solving, it is also a process of problem posing. Creative people do not choose a discipline, such as painting or composing music, just because they have to solve a specific problem. Rather, they find that they have an attraction to a discipline, and then pose problems or challenges to further engage with that discipline (Gruber & Wallace, 1999). Vincent van Gogh did not become a painter to find new ways to paint a landscape; rather, he identified painting landscapes as his way to be engaged with the discipline of painting.

No single lesson, unit, or even teacher can independently teach a child to be creative; at best, he or she can offer encouragement and tools. To help students develop creativity, teachers should feel empowered to define

creativity for their own classroom contexts, while recognizing that there is no single method to ensure or assess the impact on any single student's creativity. From this perspective, the wealth of approaches to creativity is a boon to teachers, who can delve into a variety of concepts and select ones that make most sense for a given project or group.

A key idea that teachers can introduce to students is that creativity is a commitment to long-term development of a unique point of view. In whatever ways students decide to be creative, they will need to appreciate their own distinct perspectives and will need to learn to express those distinctive aspects of themselves in skillful and powerful ways that others can appreciate.

The Toolbox Approach

To help teachers use the vast resources available, and to think about creativity in a manageable way, we propose the idea of Creativity Toolboxes that work at three levels:

1. The teacher's toolbox is part of his or her lifelong development. This is a varied set of concepts and techniques for helping people appreciate how they already think and explore different ways of thinking. The teacher assembles this toolbox over time by studying, and experimenting with, various approaches to creativity.
2. The class's toolbox is a set of skills and techniques that become part of a particular classroom culture that the teacher introduces and that the students bring to the table as well.
3. Individual students' toolboxes are the interests, activities, goals, and habits of mind that they accumulate over many art classes and experiences and that strike them as motivating and exciting, and become part of their long-term development.

What are possible tools for teaching creativity, and when do we use them? How can teachers *create* their own approaches to teaching creativity? Luckily, there has been a good deal of research on encouraging creativity in the classroom. Some leading thinkers have synthesized these into very helpful descriptions of how the techniques can work together (e.g., Nickerson, 1999; Runco, 2007; Starko, 2004; Sternberg, 2003; Sternberg & Williams, 1996). A few of the more prominent techniques that tend to appear in these descriptions include:

- Modeling creative behaviors and attitudes (including studying lives of creative people)
- Talking about creativity as an educational goal
- Using open-ended tasks (with many valid solutions)
- Encouraging people to define/redefine problems
- Providing choices so that people can follow their intrinsic motivations—and encouraging people to follow their inclinations (find what they love to do)
- Linking ideas and perspectives (including analogic thinking/metaphor and collaboration)
- Questioning assumptions

- Encouraging sensible risks and tolerating mistakes

How can teachers decide which aspects of creative thinking to apply? Many researchers agree that modeling desired skills and attitudes is one of the most important techniques (Runco, 2007; Starko, 2004; Sternberg, 2003; Sternberg & Williams, 1996). That is in keeping with the idea that the teacher is developing his or her own toolbox. Each teacher, therefore, has to develop his or her own creative abilities. Ultimately, the question of which tools to use is a question of goals. Each teacher must ask himself or herself, "When I say I want to promote creativity, to what extent do I mean that I want to..."

- help students appreciate the thrill of thought and discovery to have that "Aha!" experience?
- give students confidence in their individual potential to instill a belief that idiosyncratic ways they see the world can be valuable?
- expand students' senses about the possible by shaking up conventional ways they have come to see the world and teaching them to use imagination, make broad associations, consider metaphors/analogies, break frames, and take chances?

- show students that a particular modality of expression, like visual art, is valuable and engaging?

- help them discover new roles for themselves as artists, as leaders, as thinkers, etc.? or help them engage in their current roles more robustly?

Some tools work better for particular goals or art projects than others. And some will work better with particular groups. As with other creative tasks, there is no single, right answer.

To illustrate how an art teacher might create a Creativity Toolbox that helps achieve his or her personal goals for students, we offer an example of a teaching artist from the Solomon R. Guggenheim Museum Learning Through Art Program. In this program practicing artists conduct art lessons at schools over 20 weeks during a school year. The teaching artist works with a classroom teacher to develop a curriculum that complements topics covered in other subject areas.

We chose this teaching artist, Ascha Kells Drake, because we had seen her teach previously, and she impressed us with her thoughtfulness and commitment to teaching young students to think like artists. She has articulated two important goals related to creativity: she wants students to have confidence in their own voices and potential,

and she wants them to try taking on the role of artist. Below is the beginning lesson that we observed, in which Drake put her toolbox to use to achieve these goals.

Creating Structures Inspired by Frank Gehry

At P.S. 153 in Manhattan, fifth-grade students are gathered on the rug, with an image of the Guggenheim Museum Bilbao in front of them (Figure 1). Drake asks students to look closely and notice details, to think of questions they might ask the architect, Frank Gehry, and to think about materials Gehry used. "It reminds me of a fun house," shares one student. Others notice shapes, colors, weather, and materials. They want to know what might have inspired Gehry.

Drake tells them, "Frank Gehry was very inspired by his grandfather, who had a hardware store. Growing up Gehry worked with pieces of metal and wood, and the experience of playing with these materials transformed him into an architect." She then asks the students to think back to their earlier experiments with paper. As a group they list techniques they used in creating paper sculptures: folding, twisting, cutting, ripping, rolling, crumpling, and bending as these also will apply to work they are doing today with cardboard.

Then she explains the task at hand. "You will be invited up to get four pieces of cardboard. There are two types of cardboard you can choose from. As an artist I make choices about what materials to use, and one choice I made for today is to use masking tape. We have thin masking tape and thick masking tape, so it's your choice which tape works better for you. Your challenge is to use the cardboard to create a structure." To demonstrate, she takes four pieces of cardboard and asks students what she should do with them. They guide her in rolling, cutting, and taping the pieces. As the students talk she adds new words to the list: Stack. Build. Slot. Tab. Before she sends students back to their seats, she tells them, "Everyone's going to come up with a different solution."

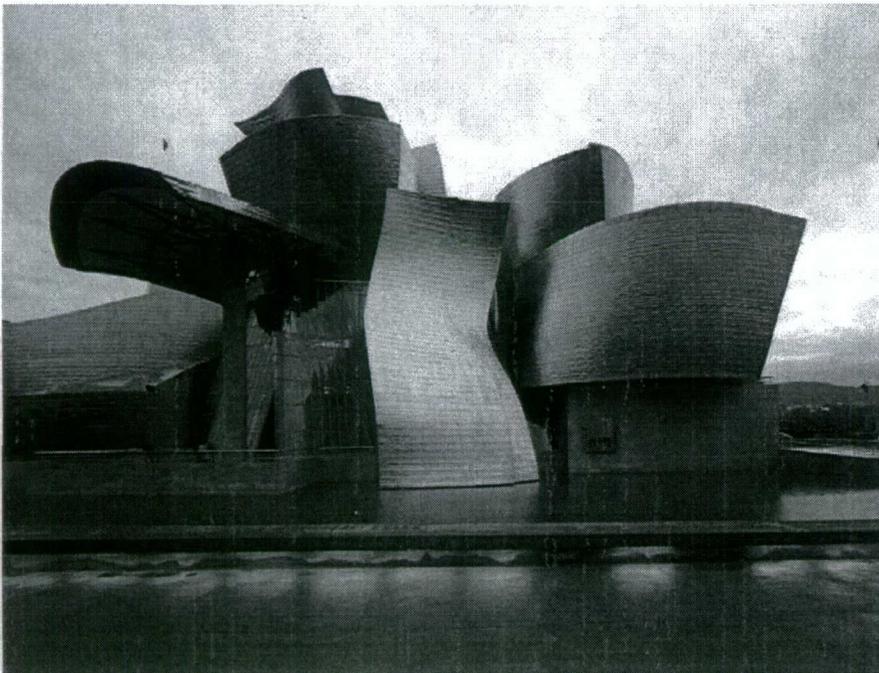


Figure 1. Guggenheim Museum Bilbao. Photo by David Heald.

After students have worked for about 15 minutes, she says, "Everybody has a beginning form. Take that form and turn it and look at it in a different way. Consider working on it that way—orientation of the structure changes things." Mid-class, Drake gathered students on the rug and asked them to reflect on their work (Figure 2). She introduced the reflection by saying, "This is a really important part of an artist's process. I do this in my own studio. You're lucky. As a group of artists you have each other to learn from." She then asks students to choose another student's work and share what they like about it. For example one student says: "I like the one over there, because they tried rolling, and also making little triangles, cutting the cardboard." After hearing from a number of students, Drake asks, "Does everyone have one new thing they want to try from having looked at the other artists' works?"

We can see in this example some of the choices Drake made about her Creativity Toolbox. She actively models creative behaviors and attitudes through both talking about her own work, and sharing the biography of other artists, such as Frank Gehry. She explicitly relates these stories to the students' own experiences, telling them that the work they do with her may inspire their own futures in unpredictable ways. Drake treats students as individuals and young artists with their own ideas and encourages them to learn from their fellow student artists in the classroom.

Drake poses explicit, open-ended challenges in the art room. She provides an objective for the project, but then takes the students through data-finding, as they brainstorm a list of techniques they had learned for working with paper and evaluate whether or not these might now be applied to cardboard. As the students work, they engage in their own problem-finding and solution-finding.

If Drake's understanding of, and goal for, teaching creativity was to expand students' sense of the possible by shaking up conventional ways they have come to see the world, she would need to re-think her toolbox. However, the tools she has gathered work extremely well for motivating and encouraging students to have confidence in their own voices and to be prepared to solve more individual, in-depth problems that would result from this initiating experience.

The lesson featured here was a motivational part of a unit that engaged students in thinking about their own neighborhoods, and what types of structures might transform it in positive ways. Students learned about structures, public art, and architecture; studied their neighborhood; and wrote about what their neighborhood needed to become a better environment in which to live. Suggestions included a space to hang out, a volunteer corps, and more schools with fewer students. Ultimately in another lesson, they created prints, inspired in part by their imaginative cardboard structures, which could serve these functions (Figure 5).

The P.S. 153 fifth-grade class developed its own Class Creativity Toolbox. Their tools included observing art (both their own and that of professionals) in an open-minded way, making free associations with other things that interested them, and using imagined scenarios to stimulate their curiosity such as what they now would ask Frank Gehry. They alternated between imaginative thinking and rooting ideas in their own real-life neighborhoods, opening up a world of possibilities, but also making concrete connections. They also kept sketchbooks, in which they recorded notes and saved copies of images viewed, as well as sketched out their own ideas. With the support of these sketchbooks, they adopted a multi-modal approach to their work, alternating between visual and verbal modes of thinking. The students at P.S. 153 looked to each other as resources, asking each other for advice, and borrowing ideas from one another as projects developed.

Finally, each student developed his or her own Creative Toolbox. For example, one of the students, Brian,¹ is interested in three-dimensional art, and experimented

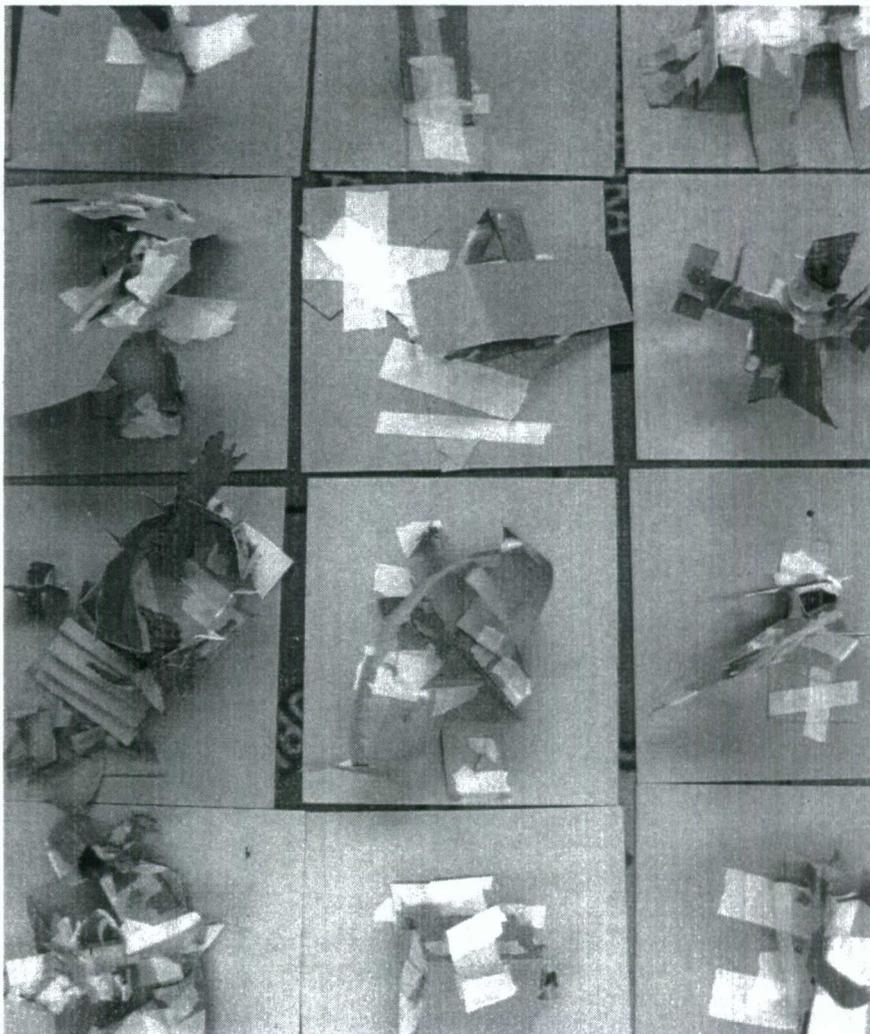
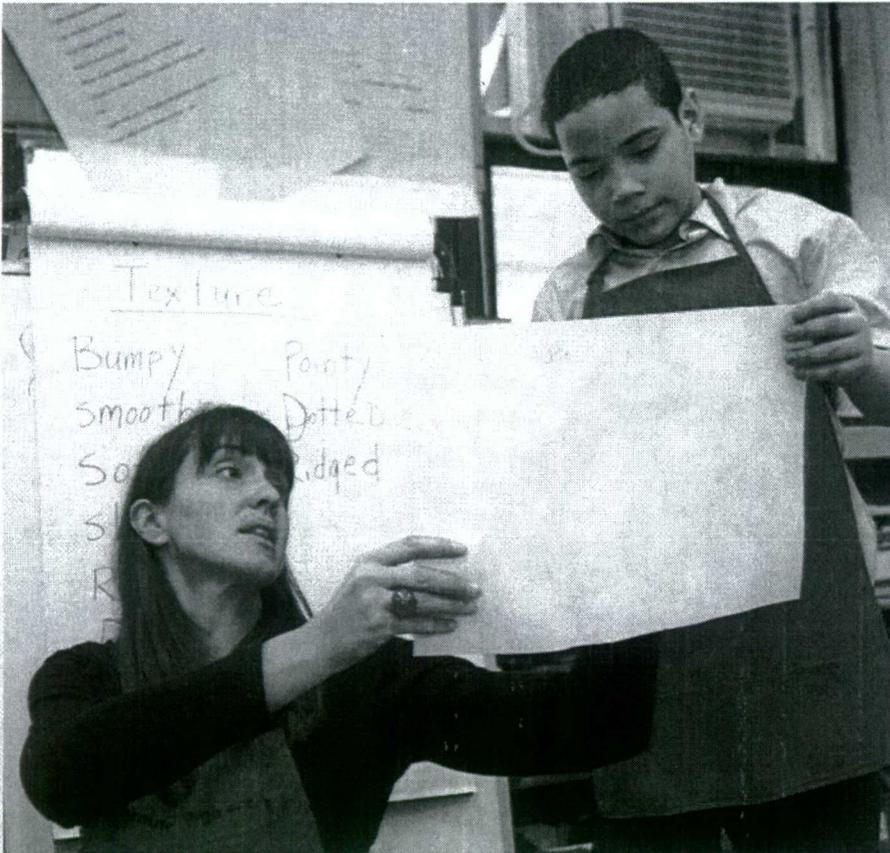
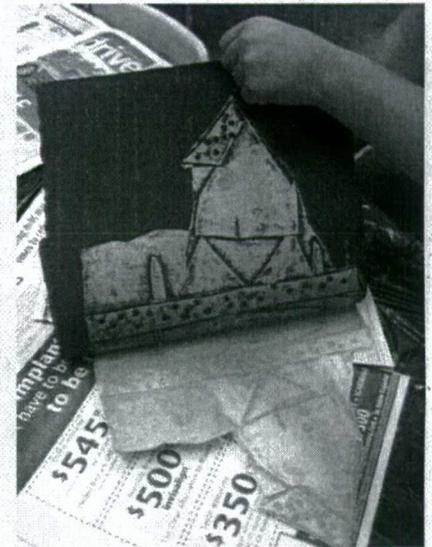


Figure 2. Students' cardboard structures.



Figures 3 and 4. Ascha Kells Drake helps students create prints of their imaginary neighborhood structures.



with ways to make two-dimensional prints as layered and three-dimensional as possible. He also used engineering books as resources, studying different parts of architectural structures. Brian created interesting titles for his work, evidencing his fluency in moving between visual and verbal modalities. Brian's emerging creative interests and skills are obvious. The teacher, however, may never know all of the interests and skills that students develop and may someday trace back to this class. Thinking of the students' creative development as personal toolboxes, however, can be helpful as teachers look for opportunities to help students find their interests, deepen their motivations, explore new ways of thinking, and develop useful skills.

Surprise: The Underlying Challenge

Biographies of creative people are full of stories of skipping school, going days without sleep, and, in general, disregarding many of societal norms and rules. Truly creative ideas and people challenge us, and a creative student can catch a teacher off-guard. A student engaged in posing his or her own problems may not complete an assignment as outlined by a teacher. A student who uses materials in an innovative way may appear not to be completing an assignment and may even disrupt the class. Responding to that moment may be one of the most difficult teaching skills to develop. Again, there is no right answer, there are many appropriate answers, and no teacher is on target all the time.

One of the biggest surprises we saw Drake address was during a printmaking lesson late in the project. After weeks spent exploring their neighborhood and imagining structures that might transform their communities in a positive way (Figure 3), students were creating prints of their imaginary structures. They had printed earlier in the year, creating print plates and prints based on existing buildings. By this point in the project, students were able to combine their experiences printing, their envisioned buildings, and their strong identity as artists. Drake asked each student to choose a single ink color for this print (Figure 4). One student, however, combined ink colors, creating a print with horizontal lines of color. This solution was not what the Drake envisioned, and the surprise was a bit disturbing, amid the effort of managing 30

Drake treats students as individuals and young artists with their own ideas and encourages them to learn from their fellow student artists in the classroom.

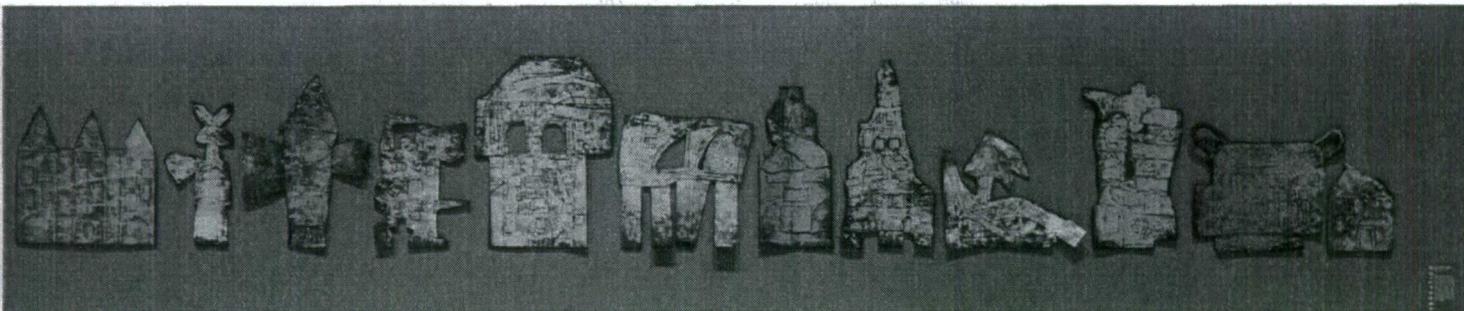


Figure 5. Prints inspired by a neighborhood transformation lesson.

fifth-graders making prints. In the final reflection, though, Drake told the class, "I really appreciate that this artist took the techniques in a totally new direction. It's taught me as a printmaker a new way to use this material."

A commitment to teaching creativity is a commitment to helping each student discover his or her inner artist, rebel, and thinker. Teaching individuals, and creating a space where individuals act differently—sometimes, very differently—is more difficult than teaching a skill such as color mixing, or a concept such as composition. The art

classroom can be a place for developing critical thinking. The difference is in careful consideration of goals and techniques by applying insights and skills that teachers develop over the course of their professional lives. Likewise, facilitating creativity effectively in an art lesson requires careful consideration of the goals for—and definitions of—creativity, as well as supporting these goals with a Creativity Toolbox of techniques and approaches that they have developed and continue to expand on as they help students develop their own Creativity Toolboxes as both class members and as individuals.

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ENDNOTE

- ¹Not student's real name.

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