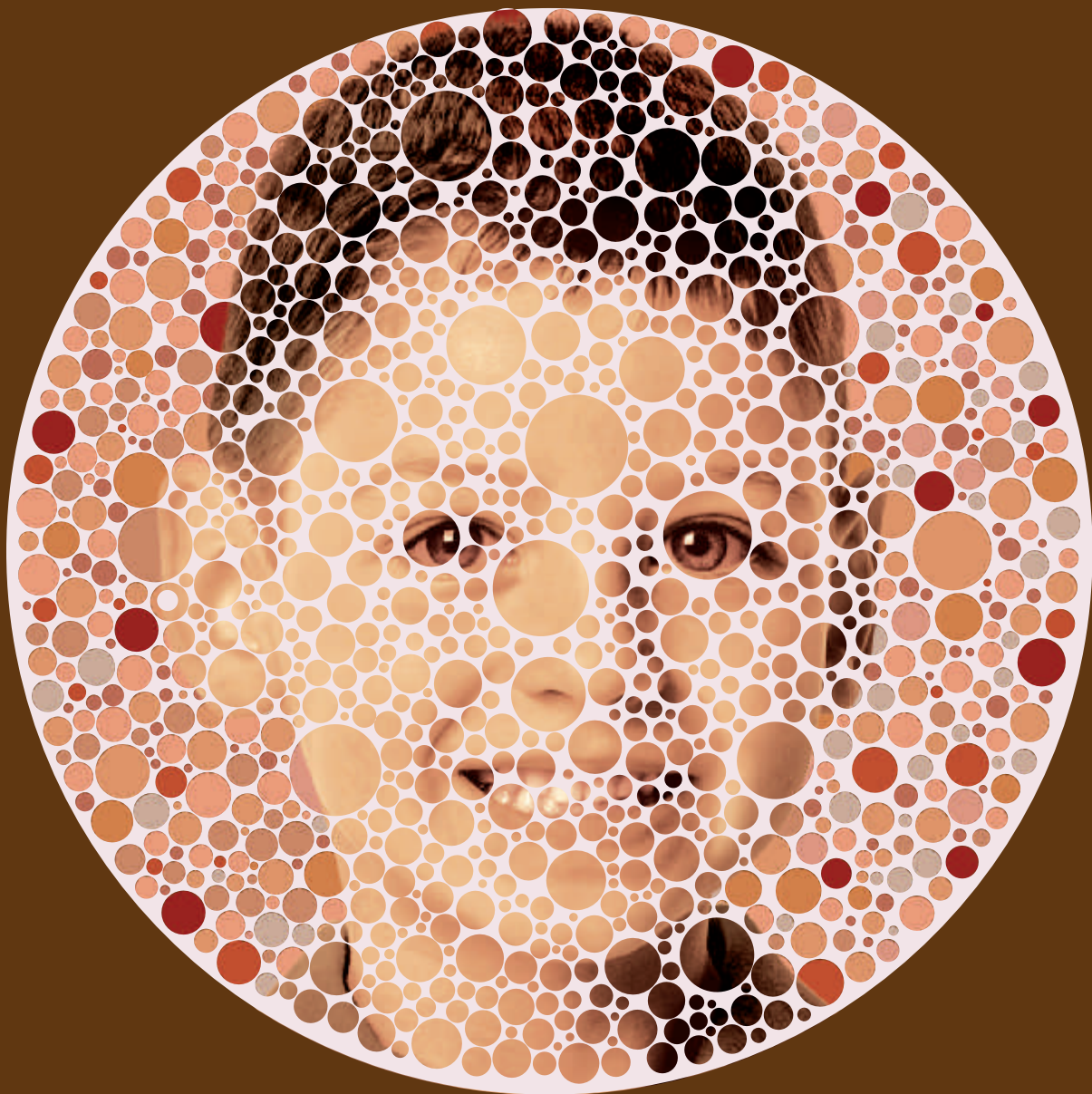


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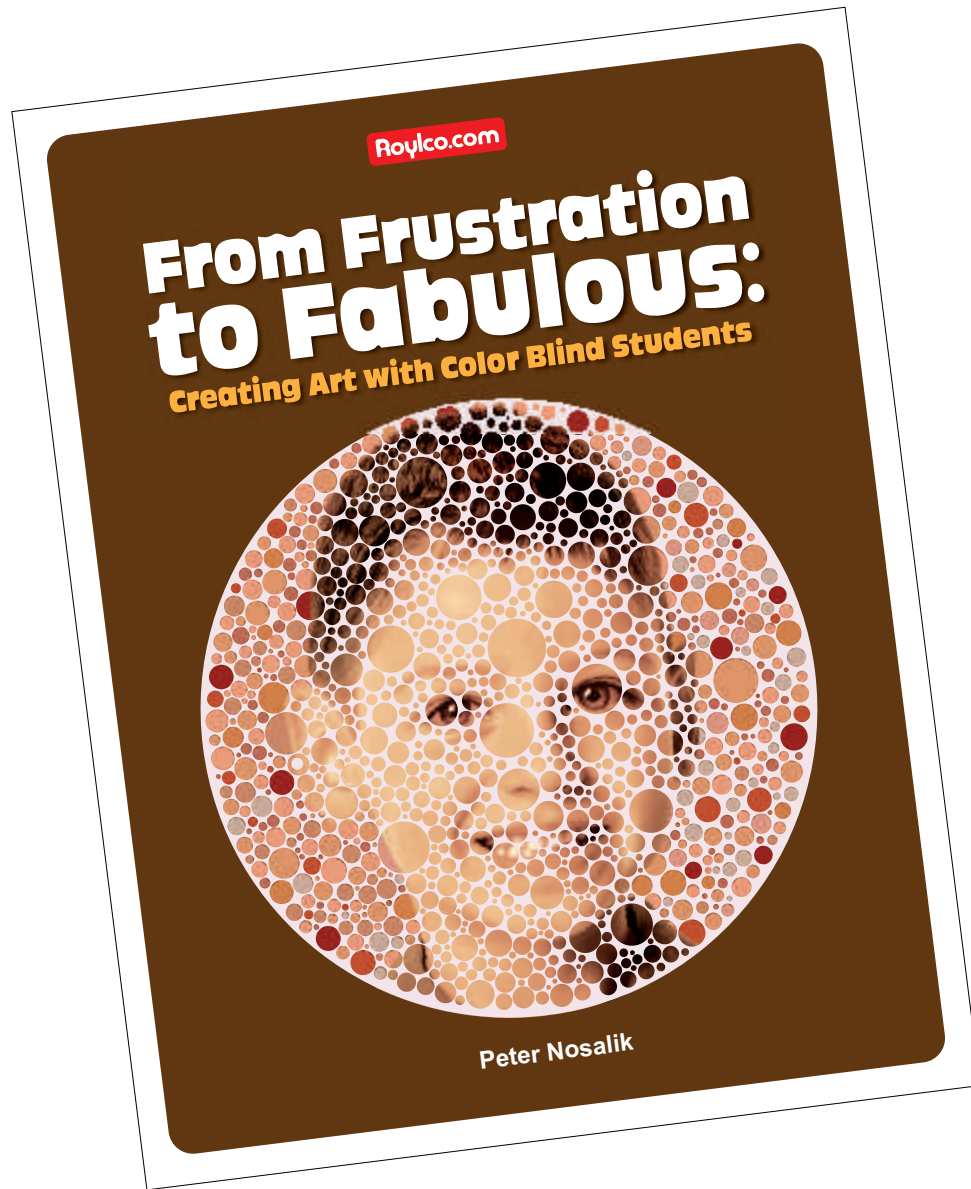
Creating Art with Color Blind Students



Peter Nosalik



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**Creating Art with Color Blind Students**

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For product guide, see Appendix

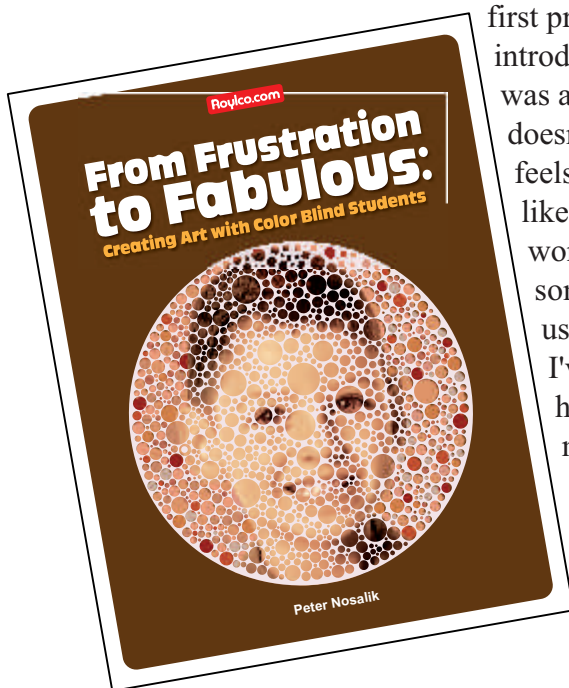
## Introduction:

Almost three decades ago when I began my career in education, I went to a presentation about color blindness. The presenter handed out "secret" envelopes to everyone entering the auditorium. He told people to open the envelope and read the message, but keep it secret. When it was time to begin his presentation he started off by saying something like this: I learned in my Dale Carnegie course that when speaking to a group of people, you can win their emotional support by sharing something personal and a little awkward or embarrassing about yourself right at the beginning. So I want to share my love for my cat. I love this animal. She is absolutely my best friend. Here is a picture." Of course, the picture was of a male German Shepherd. It was a little confusing to see the picture, but no one else seemed to mind, so I went with it.



The presenter continued talking and launched into the main body of his talk. Basically, he said that color blindness is a perception problem that affects a low number of people, usually about 1 in 12 men and 1 in 200 women. He continued to describe the cause and effect of color blindness. Near the end of his introduction, he said something that really got me thinking. He said, "You now know what color blindness is, but only a few of you know what color blindness *feels like*. The people who know are either color blind themselves or are the ones that I gave a secret message to that said, "This is my first presentation in front of an audience and I am nervous." Everyone else got the secret message that said, "I'm going to show a picture of a German Shepherd. Pretend that you see a cat." The point of this exercise was to make these people lack confidence in what they are seeing.

As both a color blind person and one of those unlucky few people who got the "This is my first presentation..." messages, I felt a little betrayed by this introduction. Color blindness isn't the same as stupidity. It was a picture of a dog. I was being lied to. Color blindness doesn't feel like being lied to. I can tell you exactly how it feels, but I have to use an analogy. It feels almost exactly like Lethologica or the momentary misplacement of a word that you know. In other words, you are talking to someone and suddenly you stop. The word you want to use is on the tip of your tongue but you can't recall it. I've heard this called a "senior's moment" or halfzeimers. When this happens to me, I feel momentarily confused, a bit frustrated and a little embarrassed. That's similar to the feeling of colorblindness. I can see a color, but I can't place it on the color spectrum. It has simply slipped out of my mind.



Let me share an example of this and make one further point. I belong to a great book club. We've been together for almost 25 years. Before that, most of us knew each other from school. Many of the members have been my friends for over 30 years. Members have been married, children have been born, couples have divorced. We've gone through serious illnesses and one of our members has died. We are a very close group of life-long friends. Our Christmas tradition is to have a secret Santa where we exchange books. Because I live in Canada where it is usually cold at Christmas, I always wrap my book gift in a scarf. This year my secret Santa gift was for a male member of the group. I bought this handsome Burberry scarf and wrapped up the book. When I got to the party, I placed my gift under the tree and waited for the unwrapping. When my gift receiver got his package, he was a little puzzled by the scarf. One of the other book club members, the insensitive one, said, "What a lovely, bright pink scarf you got for Henry."



Bright pink? I thought. Nooooo. It's manly beige. I was assured by the same insensitive person that, no, it was very hot pink. Yikes. I didn't see that coming. I have to admit, I was embarrassed and self-conscious. Henry was great about it. He claimed that he loved it.



Not everyone is as great as Henry. There are some people, and I've noticed this about art teachers, who choose to "clarify" mistakes. I think everyone who is naturally gifted in one area finds it hard to believe that others are not equally gifted. I've been lucky enough over my career to work with a great many gifted artists and designers. I've worked with one who would flip through a Pantone color swatch book and painstakingly pick a very specific color by saying something like, "This is a happy yellow, while this yellow is less happy and more jolly, and this third yellow is downright gloomy." Again, yikes!

I can perceive colors, but I may not see them like you. I can see purple, but it has to be reddish-purple, almost like magenta. I can see blue, reddish orange, yellow, yellowy green and red when these colors are displayed on their own, almost like flash cards. The colors become very muddled when they are found together in a pattern, like plaid or paisley. When colors are part of an overall pattern, they lose their identity to me. They just start to turn to mud and I can't see the nuances between colors. By "nuances" I mean the difference between a blue and a bluey purple.



While in this instance, my fellow book clubber was insensitive and a little rude, I realize that most people want to understand what things look like to color blind people so I'm going to try and help you understand.

From a color blind artist trying to explain what he sees:

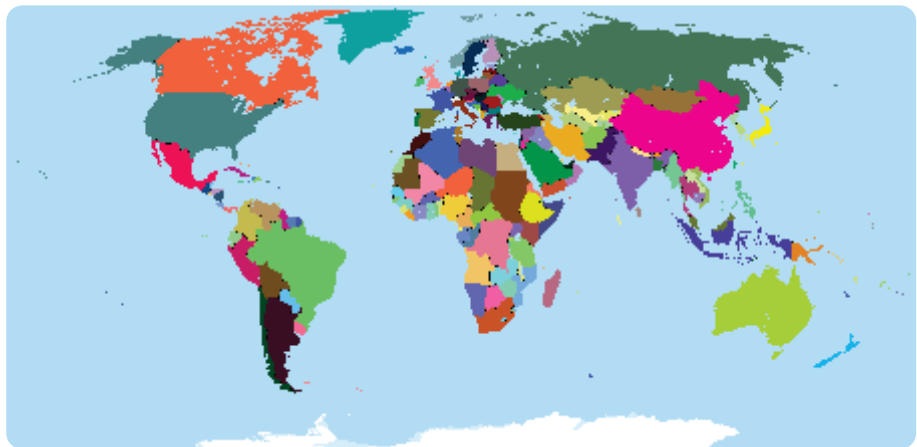
“I usually explain my color blindness like this: "I don't see red or green as well as most people. So, if I'm looking at a purple that's very blue, I might think it is blue, since I don't pick up the red in it. Turns out that's the tip of the iceberg when it comes to oil painting. My teacher says I tend to make everything too cold, that is, not red enough. In a way, that makes sense—I don't see the red in the model's skin, say, so I don't mix it into my paint on my palette.

“But there are also times where I make the opposite mistake—I mix too red a color and start slathering it on. I suppose that makes sense as well—I don't realize how red my mixture is—but there's something contradictory about those mistakes, and I'm not sure how it happens.”

There are 83 million students enrolled in schools in the United States. That means that just fewer than 3.5 million boys and just over 200,000 girls are color blind. If you have 23 students in your classroom, chances are you have one color blind student. If you teach at an all boys' school, and have a class of 24, then probably 2 of your students are color blind.

**Let's Avoid Some Pitfalls**

When I was in grade nine, we had a mandatory course in geography. On the first day, the teacher gave us a "fun" assignment. He gave us a large paper world map and showed us an image similar to this one....



He asked us to color in our map so it was the same as this map. Yikes. At first I started coloring and it was really easy. I colored all of the blue in blue, red in red, yellow in yellow and gray in gray. I have to believe that I got some of the colors right. I'm not that color blind, however, this was an activity that was designed to make me fail. The problem was that I didn't know it. I looked at the map he had on the wall and I *thought* I knew what colors to use. I read the labels on the pencil crayons and filled in the colors as I saw them. I have to admit that it was a nice way to start a new class in a new subject that we hadn't really done before. Plus, it was the first day of high school and I figured that it was going to be a lot easier than I had feared. After all, if we were coloring, then how hard could it be.

At the end of the class the teacher asked us to sign the back of our maps and he would collect them. We would use these maps throughout the year so he wanted to keep them because he was afraid we would lose them.

Just before we left, the teacher held up one map and talked about how beautiful it was. He explained that the map was neatly colored and showed how the borders were outlined in a dark color while the interior was a lighter shade of the same color. He told us that this was perfect. He asked the student to raise his or her hand. We actually applauded her efforts. I was packing up my stuff to leave when the teacher held up another map. He talked about how disappointed he was in this student. Honestly, I didn't even realize that it was my world map. I had colored in everything solidly, so I didn't use the varying tones of the "good" student, but to me, it looked like all of the other maps I had seen around me.

When he called out my name, I was shocked. Again, he asked me to raise my hand for the class. For the briefest moment, I thought I was going to be praised for my efforts which I had felt were good, but honestly, not great. I had always been a good student and now the whole class was being told that I was lazy and did not care about following simple instructions. I know my face was bright red, even though I can't really tell when someone is blushing. I even got booed by some of the other kids.

As I was sitting down, I remember the teacher saying something like, "When you don't follow instructions, it doesn't just affect you. It affects your classmates, too. Please try harder." Maybe I hadn't tried as hard as I could have, but seriously....it affects the entire classroom that I colored in part of Africa so it looked like it was part of the United States? Looking back on it now, I think he may have been pushing the point a little too far.



You would think that I would have approached him and simply told him that I was color blind, but it honestly didn't even occur to me. I had thought that I had gotten all of the colors "right."

Throughout the course of the year, I got some of the teacher's respect back, but I found two things interesting about this experience. First, teachers are human and they form opinions about students very quickly. I'm sure that most of the time, these opinions are accurate, but sometimes these opinions can be wrong. Second, when a teacher tells you that you are lazy and disrespectful, it's easy to start acting lazy and disrespectful, even if you're not. Does that make sense to you?

I'm using this story to demonstrate four things. First, using colors alone is always going to be a problem if you have more than 23 students in your classroom. At least one won't be able to participate in the same way as the others. Second, color blindness affects other subject areas,

too, not just art. Third, students don't always reveal their handicap. For some weird reason, color blindness seems like a handicap that's easy to make fun of and as such, some kids are reluctant to talk about it. Likewise, color blindness often goes undiagnosed for years so a student may not even know he or she doesn't perceive the colors in the same way as their friends. Fourth, if you want to destroy a student's self confidence, ask them to do a task that they will fail at.

I'm not going to talk about the causes of color blindness or the way the eye perceives light. These are important topics, but I honestly don't think they are that relevant to teaching art. In other words, it's not important for you to know why someone is color blind; it's important for you to know how to work with someone who's color blind. As far as I can tell, there are two main ways to teach color blind students.

One of the most common approaches to working with color blind students is to accommodate their handicap by simply passing them without really trying to “teach” them anything about color. I call this the cowbell approach to teaching the color blind. By this I mean it's like giving a tone deaf student the cowbell to play during choir practise. Everyone else can sing, but the tone deaf student has to play the cowbell. I've got news for you. The child that wants to play the cowbell isn't tone deaf. He's disruptive. The kid that is given the cowbell doesn't really want to play it. It draws attention to their challenge and doesn't really feel like participation in the choir. All this approach does is set one student apart from everyone else. It's sort of shameful to play the cowbell.



This cowbell approach is how I made it through art class. My teacher simply told me that because of my “problem” I would pass the class, so I didn't need to worry. That was back in grade 7 when art was a mandatory class. As soon as it became optional, I stopped taking it. My career has focused on art and it would have been a wonderful experience to take art throughout high school, but I was effectively told that I was so bad at it that I got a “pity pass.” I don't want to second guess my teacher back then, but this is the wrong approach. There are artists who are color blind. By the way, Vincent Van Gogh was *not* one of them. I think he had an amazing sense of color. In his Sun Flower painting, he uses 12 distinctly different yellows. A color blind person would not do that.

The second common approach is to accommodate the color blind student through sensitively making colors easier for them to use. This involves labelling colors or having a “color buddy.” While these approaches are certainly helpful, they don't really give the student what he or she needs. They may be drawing or painting with the “right” color, but they still won't perceive it. This approach is focused on the viewer of the art, not the creator of the art. I think there are some good aspects to this, but I also don't think it is the way to go. Let me give you a quick example of why it doesn't work.



I was shopping for a tie. This is always going to be a problem for me. I don't even understand why men wear ties. Is it to hide their shirt buttons? Is it to purposefully make them feel uncomfortable? Is it designed to guarantee having ring around the collar? Maybe you're saying to yourself, "No, it's a fashion statement." Okay, I can accept that, but then why are so many ties so boring? The most popular tie colors are red (to show confidence and aggression), blue (to show reliability and conservatism) and black (to show respect and formality). Boring, boring and boring.



So I went into a nice menswear shop and I brought my pants, shirt and short jacket with me. I laid them out and the clerk started piling ties on top. Because I told him I was color blind, he thought he was being helpful by explaining why the tie matched the sport jacket. So he lays a tie down on the outfit and explains that it is predominantly Arizona Tan with blue in the background. Arizona Tan? Is that different from Florida Tan or California Tan? How is that going to help me "see" the color? He pulled out another tie and told me it was Wild Mushroom. When I looked puzzled, he went on to explain that the color could also be described as Cupcake Pink. Hold on! Wild Mushroom is the same color as Cupcake Pink? I don't want to wear a Cupcake Pink tie, but a Wild Mushroom tie doesn't sound so bad. When it came to his third choice, he told me it was Electric Banana. At that point, I accused him of just making color names up. He then calmly explained that it was a "cheerful" color. Personally, when I think of an Electric Banana, I think of the opposite of cheerful: I think of terrified.



My point with this example is that simply naming colors doesn't explain them. It is helpful with basic colors, but it isn't helpful to explain the nuances between similar colors.

Here is a question that I don't know the answer to. Is it important to identify color blind students? I want you to give that question some thought while I tell you a story one of my colleagues told me. Her name is Beth and she is a Super Teacher. She has won so many teaching awards that we've stopped counting. Beth is an amazing teacher.

One day, we are having coffee and she tells me about her class-from-Hell. She is a kindergarten teacher and where we live, the class size is capped at 20 students. In this class of 20 kids, she had eighteen boys and two girls. If you've ever been in a kindergarten class with 18 boys and 2 girls you know it is loud and a little stinky. Boys are pack animals and when the pack is that large, it can get dangerous. But that's not all....she also told me that of the 20 students, three were autistic, two twin brothers and one of the two girls. This class was hard for her to manage. I visited her a few times at the beginning of the school year and frankly, I think General George Patton would be challenged by these students.



After a few months everything was under control and the class was a pleasure for her to teach. Because she knew of my interest in color blind teaching, one day she told me that three of her students were color blind. I found that a little odd. Even though she had a disproportionate number of boys, the odds of having 3 color blind students was very low. She mentioned that one of the three was a girl. That was even more remarkable. She only has two girls and one of them was color blind. The odds were very low that this was possible.



A few years ago I developed a color blind test kit for teachers. Our R59421 Color Vision Perception Kit contains 24 double sided cards, 6 color filters and an instruction sheet. My intention with this product was to help teachers identify young children who were color blind so they could start to accommodate them early. But I also wanted to do a little more than that. I wanted to help students and the teacher understand what it felt like to be color blind. There are cards that show photographs of different subjects that are “normal” and have been color edited to represent different kinds of color blindness. These are helpful for students and teachers to gain a sense of what color blind people see. In other words, these cards answer the question, “What do you see when you look at this?”

Next we have printed cards that emulate the Ishihara Color Blindness test. Normally this test has numbers hidden in the colored dots. We wanted to make something more appropriate for younger children so we hid simple pictures instead of numbers inside the dots. Most young children can at least draw out the picture with their finger if they don't know the name of the shape.

But there are two other things about this kit that make it unique. First, we give students the chance to feel what it's like to “fail” the test by hiding the same pictures in a different way. The scribbles on the back of the cards have the same hidden picture as the front of the cards. Personally, I can often make out the shapes because I'm not as affected by the colors which we've used to camouflage the images as you may be. To prove to normally sighted students that there is indeed a picture hidden in the scribbles we've included color filters that can be laid on top of the scribbles and suddenly, if you use the correct filter, the picture reveals itself. The same filters can be used over the dot images to reveal the shape to color blind students. The idea of this activity is to give kids and



students a taste of what it's like to be both color blind and normally sighted, but in a fun, positive way. There really isn't a right or wrong answer; there is just the perception that changes.

Let me return to my super teacher friend, Beth. I gave her this test to conduct with her students. To her profound embarrassment, she discovered that only one of the three students was color blind. When I asked about the other two, she simply said that they hadn't applied themselves to learn colors. So she spent some time with these two children and in just one afternoon, they were able to learn their colors.

Beth was nearing retirement so she was in a great position to make some insightful comments. First, she told me how disappointed she was in herself. For years when she came across a student who she thought was color blind, she didn't focus on colors. While this is exactly the right thing to do for color blind students, it isn't the right thing to do for children who we only *think* are color blind. She wondered how many other students slipped by without getting a real diagnosis. Second and I think this is a very profound realization, Beth realized that when she as a teacher set expectations for her students, they usually met them. For instance, Beth expected that the two students she thought were color blind could never learn their colors and they didn't learn them. When she realized that they weren't color blind she spent some time with them—expecting that they would learn their colors—and they did! Students try to meet our expectations whether or not these expectations are positive or negative.

So I want to take a moment to recap. Let's say you conduct the color vision test and you find that you have a color blind student. You understand that it's an issue of perception rather than visual competence. Most likely, they can learn basic colors like the colors found in an 8 pack of crayons. When you get into the 64 color pack of crayons, they are going to have problems. So now that you know there will be limitations for children with color perception issues, we can develop activities that they, and all of your students, can succeed at. There is much, much more to art than color. If I have to make a clumsy analogy, I would say art is like cooking. Some people are omnivores, some people are vegetarian and some people are vegan. Just because you don't eat meat, doesn't mean you can't create a delicious meal.

Let's focus on some art projects that explore visual perception.



## Activity #1: The Great Equalizer

The first activity I want to describe is what I call the great equalizer. Instead of focusing on color blindness issues, let's focus on simple *blindness* issues! Years ago we were working with blind students. Their teachers wanted to explore art with their students for two important reasons. The first reason is practical: Creating art helps blind children develop fine motor skills and their sense of touch. This is fundamental for their ability to read Braille. Because blind people rely on their sense of touch so much, they tend to be protective of their hands. We wanted to create an art experience that they could use to develop their sense of touch safely and in a fun way. The second reason why art is so important is for the parents of these children. I remember talking to one father who broke my heart when he said he was at a friend's home for dinner and their kitchen refrigerator was covered in their child's artwork. When he came home, he looked at his perfectly clean fridge and lamented his child's blindness because it signified what the child *could not* do. I wanted to help fill up that fridge with art.

To help students create art, we created our R75415 Fingerprint Sensations Kit. We've developed 10 additives to put into finger paint that changes the way each color feels. The kids were then given tips on how to paint a picture. Let's do the same thing with normally sighted students and blindfold them in order to give them a unique painting experience.

Here's what I like to do. I start with a good quality finger paint or tempera paint. There are ten different additives, but you may not need all ten for this project. Start with the six basic colors plus black. Mix in the additives. Alternatively, you can talk to your students and decide as a group which colors get which additive. Some colors lend themselves well to specific additives. For instance, one of the additives is small, little sticks. I like mixing this with green because it reminds me of grass and when I'm blindfolded it helps me remember which color has what texture.

For younger children, we work together to mix the additives into the paint. For older students, I like to pre-mix the additives so they can't see the color. Next we blindfold the kids. For this kind of art experiment I like to lead the class in a conversation about our painting. Should the subject be abstract or representative? Younger kids usually want to paint a picture of something like their red house with a green lawn with a yellow sun in a blue sky, etc. In other words, they want to create a picture similar to all the other pictures they do at that age. The older kids sense that it's going to be hard to



create a blindfolded painting, so they vote for an abstract work because they think that will be easier.

To challenge the older kids, I label the jars of paint with a letter made from that texture of paint. For instance, the blue paint jar will be labelled with a “B” in the texture of the paint. Because they are blindfolded and can't see the paint color, they need to rely on these labels to understand what the color is.

Once the students are blindfolded, we let them paint. This has always been a fascinating experiment for me and for the students. You may need to have some extra volunteers around to keep things from getting out of control as students with wet paint covered fingers search the room with their hands for additional paint colors. Alternatively, you can work with one half of the class blindfolded and the other half of the class normally sighted to help their colleagues. This approach actually produces better quality artwork, but it is slightly unfair to the first batch of normally sighted kids. I've noticed that they are never really as satisfied with their paintings as the first batch of blindfolded kids. I attribute that to having higher expectations for their efforts.

Here is what typically happens. The classroom starts out fairly loud. Kids are excited and challenged by the idea of this activity and they respond by talking about what they are doing. There is something about wearing a blindfold that makes them speak louder than normal. It's an interesting phenomenon. After a while, though, they settle down and really focus on their project. At that point the class quiets down and the real activity starts. They become very purposeful while creating their art. It's a great activity. The best part is when they remove their blindfolds to see their work. Sometimes it is a lot better than they have anticipated.

I love this activity because I think of it as the great art equalizer. Certainly it is a process based activity, but it gives the students a window into another world. For the kids who do well in their assignment, they start to appreciate the abilities that the handicapped, in this case the blind, can bring to everyday life. They may never have considered this before. For the children who are disappointed in their artwork, they develop an appreciation for the challenges associated with blindness and other handicaps. In my experience, when you can appreciate a challenge, you develop respect for other people.



## Activity #2: The Triumph of Technique

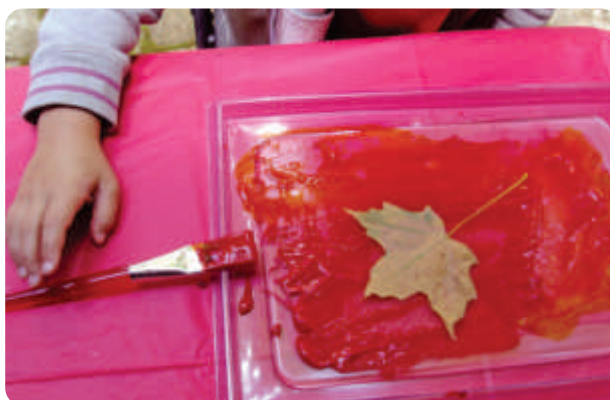
Let's explore Monoprinting! Divert attention from making "colorful" artwork to applying the process of monoprinting to develop your students' technical skills. Monoprinting is the technique of transferring an image from a plate to a sheet of paper or fabric. Instead of focusing on color, however, we want to encourage students to focus on creating patterns and thinking about the placement of graphic elements such as lines and textures. Explore and develop techniques to create impressive artwork without focusing on color.

Before I begin, I like to start with a specific color palette of paint. You can stick to primary colors or you can mix two to four colours that work well together. Depending on the age of your students, you can work with them to create the palette. For younger students, you can provide the color scheme. Using an interesting color palette results in beautiful artwork even as we focus on technique.

There are a lot of different ways to create monoprints. You can use a clean meat tray and a ball point pen, scratch a pattern onto PlayDoh® or carve a design into a lino-block. My favorite method is to use one of our R54480 Paint Pads. Let me explain how it works.

We've create a jelly-like pad that you can paint over top. When you press a sheet of paper over the wet paint, it transfers the design beautifully onto the paper. I love these Paint Pads because they are so versatile and easy to use and clean. You can use a good quality children's paint with the pads or a cheap acrylic paint. Personally, I won't use block printing inks because they're harder to clean up and I want this to be easy. In terms of clean up, I like using baby wipes. I'm amazed at what baby wipes clean. I've used them to get ink off a rug. When you think about it, it seems wrong that they are so effective. What's a baby's bum made out of anyway?

Traditional monoprinting uses a hard base, such as a wooden block or metal plate that has been carved into a permanent image. The base is then painted and pressed





onto a sheet of paper. Historically, artists would add individual details to the prints to make them more “customized” and less mass-produced. With our activity, we will be using the R54480 Paint Pad from Roylco. The Paint Pad is a pad that is made of a wonderful gel-like substance. It feels great against developing fingers and doesn't absorb paint, so it's great for making monoprints. It even feels good when you are using it and pressing paper onto it!

Add only a small amount of tempera or acrylic paint and cover the whole surface. You can use just one color (which is my preference) or cover the surface with several colors. For instance, you can achieve some very pleasing effects by mixing red, yellow and purple together! Use a brayer to roll and spread the paint evenly across the Paint Pad or cover the surface by finger painting on it or carefully brushing the paint.

Next, create the design. You can use different tools to “etch” a pattern into the wet paint. Try our R58624 Gear Stencils, R5841 Optical Illusion Rubbing Plates, R55004 Super Value Leaf Dip and Print Sponges, R5320 Floppy Foam Brushes, R5451 Paint Scrapers and R57015 Junior Goo Spreaders to create beautiful designs. Once the design is in place, cover with a sheet of paper and press lightly. Lift the paper to see the print. I like to make two or even three prints of the same artwork for three reasons: First, the first print may be too wet if the student has used an excess amount of paint. The second print will be better. Second, by making two or even three prints off the same design it makes cleaning up the gel pad much easier. Third, you can use the other prints to make more artwork so nothing needs to be thrown away.



Here is an example of the process that I like using:

First, I'm going to start by cutting a shape out of one of the sheets from our R22054 Lace Design Paper. After covering the gel pad with a thin layer of paint, I lay the cut-out shape on top of the paint and then cover with a sheet of paper and remove to see the monoprint which is dominated by the negative space that resulted from the Lace Design Paper. I then carefully lift off the Lace Design Paper and then make a second print. The details of the Lace Design Paper come out almost photographically. This technique works with paper doilies and fabric lace.



Second, I clean off the gel pad and re-paint it with another color. This time I'm going to use the same technique, but I'm going to do it with leaf shapes from our R15333 Botanical Cuts Paper. Once again, I'm going to make a print with the leaves on the gel pad and then again after I've removed the leaves, but this time, instead of using blank paper, I'm going to use one of the sheets of paper I originally printed with the Lace Design Paper.



Third, after I clean off the pad again, I'm going to apply a small amount of a new paint color. This time, I'm going to draw an image on the pad using our R57015 Junior Goo Spreader. Once I'm happy with the design (remember that it will print “backwards”) I'm going to use some sheets of paper from the first two rounds to make interesting designs.

After going through this process, every student will have unique, creative and “fridge-worthy” art!

At this point I want to talk about why this type of art experience is good for color blind students. Here are some of the reasons:

First, it allows students to develop a technique for making prints. The “art” is in producing the design.

Second, I want to give the teacher an opportunity to talk about colors. I've worked with a lot of art teachers who never talk about colors unless there is a problem. I strongly suggest that when you develop a palette that you talk about why the colors work together. You can do this technically by talking about the color wheel and color theory or you can talk about



why you think colors go together on a more emotional level. All of your students, not just the color blind ones, will appreciate an insight into your color world so this gives you an opportunity to talk about it.

Third, students can produce beautiful, colorful artwork without the stress and pressure of choosing colors. I like to compare this to cooking. You can be given specific ingredients and a specific technique can be described, but the variation in terms of how the ingredients are used and the way the technique is employed can result in very creative interpretations of the recipe. That's what we're doing here. We're giving kids the colors of paint and we're providing the tools, but after that, the students can develop their own designs. I think this is a wonderful way to develop creativity.

Fourth, when you are developing the color palette for the activity, I would suggest doing it in front of the kids. You can mix the colors and you can describe the resulting colors. I've seen this done with students, although I've never done it myself, and it's almost poetic. The words art teachers use to describe mixing paint and the resulting color is really wonderful. Don't deprive your students of a great opportunity to get inside the head of an artist. The process of mixing colors is just as important for your normally sighted students as your color blind students. It really brings colors to life and it reveals so much meaning behind colors. It's an important thing to do for all of your students.





## Activity #3: Try, Try, Try Again.

This is an activity that's close to my heart. When I was in elementary school, my artwork was never selected to go up on the wall. At the time, I was bothered by this because I always worked so hard on my art projects. One day, after working especially hard on a project, I was extremely disappointed that the teacher had not displayed it. I took a look at my painting and then I looked at all of the other paintings that were displayed so prominently on our art wall. I noticed that the majority of the work on the wall was fairly simple. While I had created something with fine details, the more graphic, simplistic work seemed to strike a chord with the teachers. I decided to try a new strategy.

Our next project was a Native North American mask. We laboriously worked on creating a clay mask using a new technique for us. I remember it taking a couple of weeks to create and fire the mask. Then it was time to paint them. I kept telling myself, "Keep it simple. Keep it simple." And I did. My mask was hung up on the wall as a tribute to simplicity.

That experience taught me two things that I feel are important for the work that I'm now doing. First, it taught me that displaying artwork in the class can be de-motivating for kids who aren't featured. Second, it taught me that conducting an artistic process that requires a couple of weeks is not something I want to do. I realize that a long project is important in some cases, but for the work I do, I don't like projects that take a long time. Instead, I want kids to try something and fail and then still have time to try it again. In my experience, trying and failing and trying again is far more important for the development of a child than trying and succeeding easily.

However, this activity also taught me that three-dimensional art, like clay, is wonderfully satisfying for students. It's so much more special than simply painting on a sheet of paper. So, I want to share an idea with you for making easy papier mâché students can experiment with when painting. This is especially important for color blind students because it removes the stress of picking the perfect colors on the first try. They can



experiment with the papier mâché without any real fear of permanent failure, unlike using clay which needs to be perfect on the first attempt.

I want children to be proud of their artwork and in order to be proud they need to be confident with their choices. One way to be confident is to experiment with design and then implement the results of the best experiments. In order to experiment, we need to reduce the amount of time invested in a project base so it can be discarded when it doesn't work.

I wanted to develop a quick, easy, cheap and fun process to make unusual papier mâché. I started with a form or mould. We developed our R52009 Face Forms as a way to help teachers explore multicultural art topics. There are 10 moulds in each pack representing 5 different ethnicities. These moulds are the size of a normal 8-year-old's face. They are made of clear plastic which is important when you're using them.

All you need is some water, a sponge or paint brush, some white glue and either 20 squares of toilet paper or 5 sheets of facial tissue paper cut into quarters. Tip: The toilet paper works better, but if you don't want to use toilet paper, find the cheapest facial tissue you can buy. I used the cheapest white glue I could find and mixed 1 cup of water with 3 tablespoons of glue.

Next, I used a small sponge to coat the inside of the Face Form with the milky-glue. I covered the glue with 10 sheets of toilet paper making sure to really work all of the paper into the details of the face like the nose, eyes and lips.

I next covered the first layer of toilet paper with just water by applying it with another sponge. I took this opportunity to make sure I was getting the paper deeply into all of the face's crevices. If the paper ripped and there was an exposed part of the mould, I simply used another sheet of toilet paper or ripped off a piece from the edge that I planned to cut off later anyway.

I applied 10 more sheets of paper over the wet surface and once again used the sponge to press on a thin coating of the glue mixture to the final layer of paper.



So the process is this: a layer of milky-glue followed by a layer of 10 sheets of toilet paper. Next, coat the paper inside the mould with just plain water making sure to work the paper into all the crevices. The third layer has 10 more sheets of toilet paper. Finish it off with a layer of milky-glue.

There are ten moulds in the package so you can do all 10 papier mâché models at one time. Once you get going, you can do about 10 moulds in about 20 minutes. Certainly your students can do this step, but the moulds will need to dry at least overnight.

Here's one final tip: Use as little milky-glue and water as possible. Using just a little bit won't change the end result, but it will make the faces dry much faster.

Once dry, carefully pop out the papier mâché faces. Trim the edges around the face with scissors. Students can use tempera paint or markers to draw on the details. Encourage students to explore their face designs. Look at images on the internet or talk about traditional cultural masks or explore Rock and Roll images of KISS and other glam rock stars. The goal is to explore color, shape and design while creating a cool project without a lot of consequences if students don't like their initial attempts.

I was working with a particularly tough class of grade seven students. They really were awful. They didn't want to "try hard" because that would make it seem like they cared about what they were doing and to care was not cool. So in desperation I gave them this activity, but I told them to make an ugly mask. I noticed two things right off the bat. First, the boys got into this project. Sure, they drew scars and blood on their zombie faces, but they really focused on what they were doing in a way I hadn't seen before. Second, the results of this activity were beautiful. Maybe the subjects were a little disturbing—zombies, monsters, super creepy old people—but the detail and precision were admirable. When their regular art teacher came back into the class, she was shocked by how quiet and focused the kids were. She was also shocked by the subject matter, but she was more shocked by the finished results. Kids she had not expected to be gifted artistically proved to be more than competent when given a subject they cared about. I have to admit that it wasn't my intention to get them to care about art. All I wanted was to avoid being made fun of by these brutal tweens, but instead, they really stepped up. It proved to me that when given a choice, students will respond with conscientiousness as long as the project doesn't interfere with their world view of themselves. In that particular class, their world view was a bit gruesome, but they still came through in an unexpected way.

I want to extend this into the color blind world. Color blind students want to do a good job. Our focus has to be on finding ways for them to accomplish doing a good job while responding to their challenge.



## Activity #4: Stained Glass Art

There is something about Stained Glass that draws my attention. An enormous panel of colored glass mixed with light and precise artistic design make stained glass a true wonder to look at when visiting religious or historic sites. I wanted to take this same sense of wonder and apply it to children's artwork, regardless of their skill level. So we came up with Stained Glass Frames. There are two frames in this activity that I'd like to talk about.

The first is our R52085 Snowflake Stained Glass Frames, which are made from beautiful shiny card stock. There are several gorgeous designs for children to choose from. This is an open ended activity so just like in real life, no two snowflakes made by your students will look the same.

The second kind of frame is our R52087 Tropical Fish Stained Glass Frames. There are thousands of species of fish living in our oceans today, and a great many of them feature extraordinary markings and designs. Many of these colorful fish live in or near reef ecosystems and are adapted to their environments through color as a protection from predators or to indicate their particular residency, or habitat, in the coral. Since there are so many different types of fish out there, with a plentiful array of markings and patterns, I think using this type of Stained Glass Frame is a great opportunity to allow color blind students to explore art to their fullest potential!

Along with the Stained Glass Frames, we also make beautiful R15257 Stained Glass Craft Paper. This paper is beautifully printed with colors and designs and is semi-transparent so it looks beautiful in a window on a sunny day. Unlike tissue paper, this paper is very durable and won't rip easily. Students will have to use scissors to cut it. Besides the different colors and textures, each sheet has different variations just like real stained glass, so students have more choice when selecting elements for the Stained Glass Frames.

Since we are talking about color blindness, I want to point out that in order for students to appreciate their artwork, they have to feel a sense of accomplishment in whatever project they are doing. In this project, students are focusing on their projects without focusing on rules for completing the projects. It is a great idea to talk about stained glass artistry and how artist search for variations in the glass that represent portions of the picture they are arranging, or you can just let your students loose to discover these issues on their own.

An easy way to fill in the frames is to flip the frame over and place on top of the Stained Glass Paper. Lightly trace one of the interior shapes of the frame onto the Stained Glass Paper with a pencil. Redraw the shape with a large



border around the tracing and cut out the shape with a pair of scissors. The overhang will allow you to easily glue the Stained Glass Paper piece onto the frame edges. While keeping the frame flipped, glue the cut out on the part you just traced. Fill the entire frame with cut outs from the Stained Glass Paper. Once the frame is complete, cut a length of string and tie to the hole at the top. This will allow you to hang the frame in a window or from the ceiling.



I love this activity because it is open-ended. There is so much color variation in the Stained Glass Paper designs that students can mix and match the sheets any way they

like. Anything they make will turn out beautifully. In this activity, the process is emphasized, but the end product will be wonderful so students will get the best of both worlds! The frames look lovely displayed together. Decorate a wall in your classroom to resemble an underwater theme and hang up your students' work of art around the wall to show the diversity between their tropical fish.

To extend this activity, you can start off by studying tropical fish. How do the colors and patterns reflected on their bodies help protect them in the ocean? Once students discover the answers to those questions, they can create their own tropical fish designs with these ideas in mind. Once they have completed their project, they can explain why they chose to make their fish look a specific way. It may not have turned out exactly the way a student expected, especially a color blind student, but if there is some rational thought behind the design, then the experience was a success. This is a great way to explore science, nature and art.



## Activity 5: Sun Painting

I love sun painting. You need to do this on a bright, sunny day. I've tried it in both the summer and the winter and they work equally well. Basically you coat a sheet of paper in water and drain off any excess. Then you drip liquid watercolor paint over top of the wet surface and place objects on top of the wet paint and set them outside to dry. The results are unexpected and beautiful and it's a great way to celebrate a sunny day. There are three other important aspects to Sun Painting: First, it's relatively cheap.....you can create variations on this theme and really stretch your art budget. Second, it's a great way to introduce science to younger children. There are two important scientific processes going on when you create this art. Third, for the color blind student, it's a great way to create beautiful, colorful art that is created through a design process. In other words, it's a no-fail art activity because it focuses on process rather than the finished result—even though the finished result is spectacular.

Let me be more specific. You can use a good quality photocopied paper, or you can use one of our R15213 Color Diffusing Paper™ sheets. I love our Color Diffusing Paper. Basically, it is a beautiful watercolor paper that is very economical. We have regular sheets of paper in different sizes and papers cut out in different shapes. I use this paper all the time and kids really like it because it's unusual and has a great texture.

Put the sheet into an art tray. Flood the surface with tap water and pour off any excess water.

Use paint pipettes like our R54460 Squiggle Pipettes or R54470 Junior Heart Paint Pipettes to sprinkle small amounts of liquid water color paint over the surface of the wet paper. I really like the Liquid Watercolor Paint sold by Discount School Supply. You need to cover the entire surface with the paint and the pipettes do a great job.

Next, lay objects on top of the wet paint and put outside in the bright sunlight. I like using our R2131 Bright Buttons and both R2184 Manuscript Letter Beads and R2186 Lower Case Letter Beads for this activity. I mostly work with younger students and it is nice to add a literacy component to an art activity.

While you are waiting for the paper to dry in the sunlight, ask your students what they think is going to happen. Most kids will say that the paint will dry on the paper, but stay wet under the objects. They may also say that the paint under the



objects will look darker than the paint on the rest of the paper. To be honest, this is exactly what I expected would happen.

Instead, the paint on the paper dries, but when you remove the plastic objects, you see a white “shadow” under them instead of a dark paint color. If it is a particularly hot summer day and the paper dries quickly, you'll even get shadows around the taller objects like the letter beads. It's almost photographic. It is a very cool activity.

Here is what's happening: The science behind this activity is all about the nature of water. Water wants to distribute itself evenly wherever it is. That's why water flows across a paper towel: It doesn't want to be higher in one area and lower in another. It wants to remain level, so it travels across a surface until it covers it evenly. When the sun shines on the paper, the water in the paint starts to evaporate everywhere but under the plastic objects. The wetness under the objects wants to “level” out, so it migrates from under the objects and it pulls the pigment with it. Some younger children think this process is magic, but it's not: It is science!

I know children will be proud to show their parents this artwork. Color blind children will also be proud of their accomplishment, but we can take this a step further.

When you pick the colors you are going to use for this activity, mix it up a little. I don't recommend using more than three colors. If students use too many colors, the end result will be a dull dark brown. So, stick with three colors and really talk to your students about why you have selected those specific colors. Remember, not only do the colors need to work together, but they will also mix once they are applied to the wet paper, so they have to work well when combined.

Separate the class into groups of 4 and create specific color palettes for each group. Primary colors are going to work well, but talk to the kids about experimenting with different color groups. Now would be a great time to talk about the color wheel and how to use it to select the palettes. The important point is that you talk about the colors you pick. Please don't just say things like, I like the way these three go together, but instead, talk about why they go together well technically. Children will be able to understand this process, even if they can't see it perfectly.



## Activity #6: Leaf Collage

I LOVE leaf art. Like the rest, it concentrates on technique rather than color, but there is an added bonus. I like using natural elements in art because they *always* go well together. I was inspired by Martha Stewart when she talked about using nature to inspire room design. From the colors of paint to the fabrics, Martha always looks to nature as a cue for selecting colors. She believes that natural colors complement each other and I think it would be hard to argue the point. Likewise, when you use leaves in collages, they will always coordinate.

Check out the book, *Look What I Did with a Leaf* by Morteza Sohi. Mr. Sohi creates all kinds of beautiful characters by arranging and gluing down leaves. If you don't have access to his book, simply google "Leaf Collage Animals" which will lead you images of both professional and student work.

At this point I want to quickly tell you about my experience with creating art with younger children. When I first started working with kids, I was tempted to show them artwork examples and ask them to use the examples as inspiration for creating their own unique art. I think I tried it twice before realizing that when you show a young child a piece of art, they want to make *that piece of art*. It can be frustrating and de-motivating. I quickly learned not to show them inspirational art. Instead, we do something a little differently.

I learned to model the behaviour I was after. I start by showing them a reference photo. Unlike inspirational art, I am a great fan of reference material. Let's say you show





them a picture of a cow in a pasture. You then take your leaves and tell the students that we are going to make a similar cow by arranging leaves onto the paper and pasting them down. I then ask them what leaf we should start with. When a student makes a suggestion, I ask them to come up to an easel at the front of the class and position the leaf on the sheet of paper and talk about what part of the cow it represents. Once they explain, ask the child to glue it down. Continue this process of asking students to arrange the leaves on the paper until you have a recognizable cow. You can then add details like grass from a pasture or other elements with more leaves or with markers.



Before I move on, let me talk a little bit about how to prepare leaves. There are three ways to prepare stacks of leaves for this activity. The first way is time consuming, but produces beautiful leaves that will last for months. Start by mixing one part glycerine (available at drug stores) with two parts distilled water. Place leaves in the solution and weigh them down with some smooth rocks so they are fully submerged. Set the bin in a cool and dark place. Depending on the size of your bin you can do a few or a lot, but don't overcrowd the container. The solution needs to get at the surface area of the leaves. You'll need to keep the leaves in the solution for a minimum of three weeks. Stir the solution every once in a while and add more water to maintain a level amount. After three weeks, remove the leaves and dry them completely. They will stay "fresh" looking for months. The only problem is that they are hard to glue when they are finished curing.

Alternatively, you can use wax paper to preserve the leaves. Place leaves between two sheets of wax paper on an ironing board. Cover with a towel and use a clothes iron to press the leaves and melt the wax paper together. You can either try to transfer the wax paper onto the leaves or "encase" the leaves between the two sheets of paper. I don't particularly like this method, but it will preserve the leaves quickly and it will last a very long time.

The final method is to use our R15334 Crafty Leaves. We photographed and printed a



wide range of leaves onto high quality, coated paper. After we have printed the leaves, we die-cut them so they resemble real leaves. They are beautiful and easy to glue. They really make this craft easy

and fun without a lot of preparation time.

I've prepared ten animal reference sheets for you to hand out to your students. Encourage students to arrange the leaves so they resemble the animals and glue them down. I like extending this activity by asking the students to write facts about the animals that they research in the library or on-line. For older students, I ask them to write fictional biographies for their animals or write a story that features their animal.

Before moving on, I want to again relate this to color blindness. There is a lot of different information about natural color systems. In its basic form, the theory is that the human ability to see colors is based on nature. We have evolved to see natural colors. These colors are specific and can be used to form all of the colors we see every day in the fields, streams, morning and evening skies and the animals and plants around us. The colors are specific shades of red, yellow, blue and green along with black and white. The colors are specific and can be combined in different ways to create other natural colors. These colors are different than some of the colors we see on TV, on our computer screens or even in works of art. In the most general terms, these natural colors will always work together to form pleasant combinations because that is how we have evolved to see colors. You can extrapolate on this theory or look on line for more details. Basically, you want to have a discussion with your students about the difference between natural and artificial colors. Your color blind students and your normally sighted students will both benefit from these discussions. By talking about colors, you demystify them for your color blind students while making normally sighted students more aware of the thought process that goes behind creating a palette.



**Activity #7: Paper Dolls**

I know it sounds frivolous to create paper dolls in art class, but teaching children, especially color blind students how to dress will be a lesson they use every day for the rest of their lives. The absolute hardest thing a color blind person has to do each and every day is figure out what to wear. Often they simply give up and wear the same boring combinations of clothes day in and day out.

I like to start out by coming up with some rules around dressing. This is especially important if you work in a school that employs a uniform dress code. I love uniforms in school, however, they don't challenge color blind students to express themselves.

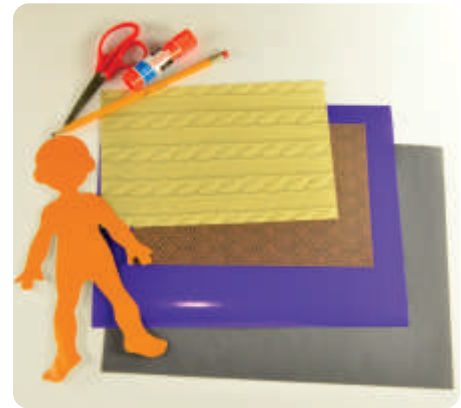
Let's talk about basic rules. In the past, I've worked with students as a class to develop these rules. I always like working together. Not only do we get a broader perspective, but it's a far more democratic process. I believe in involving students as much as possible, however, when it comes to dressing, I find that students, especially younger students, either don't know how to coordinate clothes or don't care. Likewise, the first few times I tried the democratic approach, we got some pretty messed up rules.

So what I decided to do was come up with a list of very basic rules that children could explore and then develop further on their own. The idea is that color deficient children could stick to these rules hard and fast while adventurous students could go wild.

I start off by saying that when it comes to wardrobe, there are "Statement Colors" and there are "Neutral Colors." Neutral colors are Denim (kids really like the notion of denim as a "color"), Black/Gray, White and Tan. I used to say khaki instead of tan, but then I went to a store and said I needed a pair of khaki dungarees and the store clerk brought out at least 5 distinctly different colors. For a moment I thought she was the color blind one and then she started talking about the range of different khaki colors. I realized right then and there, that I didn't mean khaki; I meant tan.

Statement colors are everything else.

Rule #1: Mix a statement color with a neutral. It doesn't matter if you mix a bold shirt with a neutral pant or the other way around. Don't mix two statement colors together and don't mix two neutrals. This is a rule and with all rules, there are exceptions. We talk about some of these exceptions. Most often children will ask about uniforms.



That's an exception. What about a suit? That's an exception, too.

Rule #2: Patterns can be considered Statement Colors, so you can mix a pattern with a neutral. Simple. Again, there are exceptions to this rule. When can you mix two patterns? When the patterns are both of the same color or when one pattern is a geometric and one is a floral or when one of the patterns is a solid color geometric. Patterns can start to get confusing, so I say, let's keep it simple and say mix a pattern with a neutral. The students with an innate fashion sense can get the hang of mixing patterns, so don't exclude them, but make sure the students have a rationale for their color choices.

Rule #3: Add some bling to your outfit. Metallics work with anything. Add jewellery, watches, fun shoes, hand bags, back packs or bow ties. Bling is fun.

Now that we have three rules and about a hundred exceptions, it's time to put this into practice. What I love about this activity is that children who are tentative about their fashion sense can follow the rules closely, while students who have a greater color confidence can employ the exceptions. Everyone wins. The trick is to make sure that a student can discuss their choices. Note: For this activity, and almost all of the other activities, I don't ask kids to present their finished project to the classroom. Instead, I get them to work together so they can talk about their choices with their friends. I want this to be a lively art project, so talking is encouraged. I will collect the finished artwork at the end of the class and go through it to make sure that each project works, but in general, everyone is going to pass this by falling somewhere on the spectrum between Lady Gaga and Bing Crosby.

Let's make our paper dolls. Start out with a doll cut out. I like to use our R52004 Card Characters. These are well proportioned silhouettes of kids made from card stock printed with eight different skin tones. Kids can either pick a skin tone that resembles their own skin tone, or whatever they want. Because I work mostly with younger children, I am always happy to see that young



children are truly color blind when it comes to skin tone. They don't care what color they pick. Starting around seven years of age, kids become aware of the differences between themselves and their friends. By age nine, they are completely aware of these differences and select the skin tone that most closely matches their own.

Next, I put out several packages of fabric related craft paper. We have a new pack of paper that's designed to offer a great deal of choice while being economical. It is our R15289 All Kinds of Fabric Paper, but I also really like our more traditional R15243 Fabulous Fabric Craft Paper™, our R15263 Tye Dye Craft Paper, R15273 African Textile Craft Paper which is inspired by Kente fabric designs and our R15199 Around the World Paper Collection which is inspired by diverse ethnic designs.

Children select two sheets of paper, a neutral and a statement color or pattern. They decide which will be the top and which will be the bottom. They flip the sheet over so the white side is facing up and then they use their Card Character as a template to trace around. They can then easily design clothes by sketching them over top of the body outline. For instance, to make a shirt, they simply need to cut out the torso part of the outline, cut along the waist, cut off the hands or arms, and cut a collar out from below the head. For pants, cut out the legs at the waist and trim off the feet. A dress is easy: use the outline as a guide to draw a regular A-line shirt or be a little more adventurous.

Flip the Card Character over and glue on the clothes. Add some facial features with marker and glue on some yarn or paper hair. Finally, add the bling! Use metallic colored marker or glitter glue to add the details.

Learning how to mix and match clothes is as much about confidence in your ability as it is in your ability to see colors. This is a great way to build that confidence.



## Activity #8: Chromatography Colors

Chromatography is a great method to introduce young kids to science while exploring colors! Basically, the materials used in chromatography help to decompose a complex color back into its component parts. I use Epsom salts and water to make the solution that will cause this to happen. The Epsom salts attach onto certain molecules in the ink and push them apart. This is a great way to explore color mixing and how colors are put together to make new ones. Likewise, this activity is a fantastic way to get color blind students involved in a beautiful art process. No matter what colors they choose to use in their project, the process of using materials and techniques to explore science is wonderful.

Let's start with our materials! I used our R2440 Color Diffusing Paper™ Flowers, some markers and a jar of water with a small amount of Epsom salts. Because markers are made with various pigments, you won't have to worry about staying away from primary colors. Note: In my personal experiments, I've included yellow just to add a colorful range to our chromatography flower, but as I've found, yellow is the only color that won't separate as well as the others.

There are several different types of flowers to choose from. Select your favorite flower shape and then count how many petals are on the flower. Students then choose the same number of marker colors, a different one for each petal. Tip: You can double up on some colors. Start at the center of the flower and draw a triangle pointing inwards with the base facing out to the petal. Color in the triangle.

Mix one teaspoon of Epsom salts in one cup of warm water. This solution is what you will use to start the chromatography process! I used a wide, flat cup to help dip the flower evenly into the solution.



Pinch your flower at its center until you form a small handle underneath. This will scrunch the flower a little bit, but it's important to make this "handle" prominent enough that it will reach below the surface of the Epsom salt solution.

Now dip the handle part at the center of the flower into the Epsom salt solution. See how the petals stick out from the center? The petals will hold the flower in place so it doesn't collapse into the cup. You can even curl the petals outwards so that they hold the weight of the flower out from the center.

Look at what happens over time! Not only does the whole flower get completely covered in pigment, but the various colors separate into their component colors!

I've tried another type of flower. The colors start to break down in a matter of minutes!

The solution captures the light weight pigments and creeps up the flower petal!

You can start to see the progress of the pigments travelling up the paper. The heavy pigments are deposited first. The lighter pigments travel further along the paper petals.

Now, the assorted colors completely covered the surface of the flower and have separated into the component colors that make up the marker color. See the small patch of purple near the center of the flower? You can see some light pink being separated from the darker purple parts.

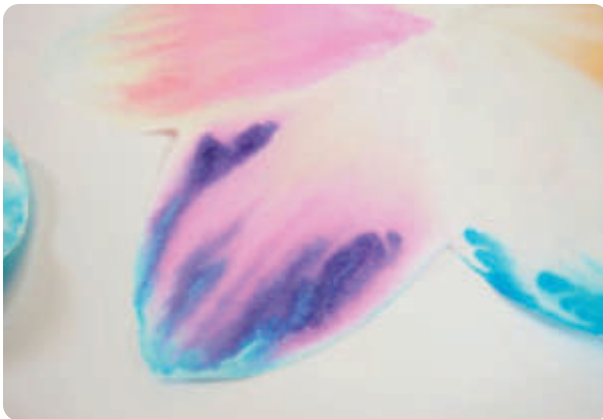
Ta-da! When the Color Diffusing Flower is fully saturated in water, remove from the cup and set on top of a dry container. Leave it to dry for about 15 minutes.

Look at the separation in colors. You'll see the most differences coming from colors that have mixed amounts of primary colors such as orange, green or purple. It's interesting to note that colors such as brown and grey end up looking the most colorful after this experiment!

Here's a close up of some separate colors that went into creating this blue color.



To make your designs extra special, combine them into a pretty garland! Fold your flower in half and then cut two small slits near the center, at about 2" (5 cm) apart. Unfold your flower. Next, weave one end of a length of ribbon through the first slot and back out through the second slot. Repeat for the remaining flower shapes and hang them up! Combining science with art is lots of fun and gives students the self-assurance that their art is beautiful, regardless of the color combinations they use.





## Activity # 9: Sock Puppets

I want to focus on one more “no fail” project. This one is intended for younger students however, I've done it with High Schoolers, too, but with a twist.

We're going to make sock puppets. For younger children the puppets are simple to make and focus on shapes rather than colors. The activity itself is straightforward. We start with a sock and some of our R2131 Bright Buttons™. All you need is yarn and a plastic needle. Our R5601 Plastic Lacing Needles™ are perfect because the eye of the needle is flexible and can be pulled open to make it easier to thread and then pinched shut once the yarn has gone through.

Parents can donate clean socks that have somehow lost their mate in the wash or you can buy a pack of inexpensive socks like our R22004 Sockles. Next, you'll need a pack of assorted buttons. I like our R2131 Bright Buttons because the colors are nice and the shapes are perfect. They have large holes which make sewing the buttons on the sock very easy. The real goal of this project is to sort through the buttons and find the shapes you want rather than focusing specifically on the colors. The puppet is going to look cute no matter what colors you use! It's about making a bright, bold statement.

Start out by encouraging the kids to sort through the buttons to find eyes, noses and mouths. For the eyes, I recommend layering two buttons on top of each other to create a pupil. It looks great if the round part of the eye is white, but that's not really essential.

Once again, I want to focus on technique rather than color aesthetics. For younger children it is hard to hide the knot you need to tie to hold the button in place. Here's how we can keep it simple. Start with just the button, needle and yarn. It's easy to thread one of our Plastic Lacing Needles. Simply grab both sides of the eye of the needle and pull them apart. Thread through the yarn and pinch the eye closed. Your yarn doesn't need to be long. Start with just 12” (30 cm) of yarn. That will be more manageable for younger kids. Note: You don't need to tie the yarn onto the needle.

Starting underneath the button, thread the needle up through one hole of the button and down through the second hole. Next, insert the needle through one layer of the sock. At this point, it may be easier to use a narrow cardboard insert cut to fit the width of the sock. Insert this into the sock to prevent kids from sewing through both layers of the sock and effectively sewing their puppet closed! Once the needle passes through one layer of the sock, kids then make their stitch and come back up through the sock. Tie the two ends together to attach the button securely onto the puppet. Repeat with all of the other buttons. It is very simple once children

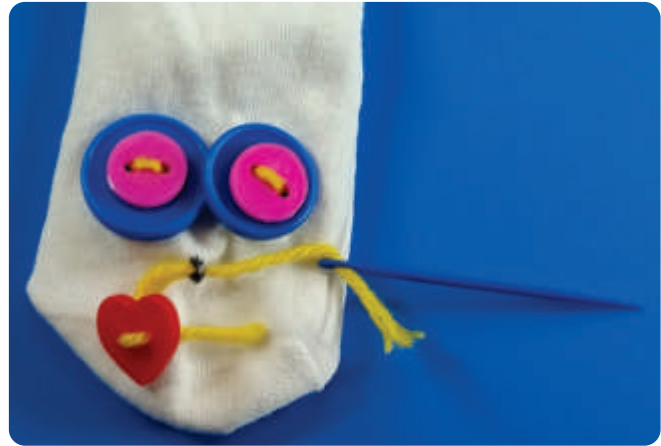


understand and refine their technique. If they are not happy with either the placement of their buttons or the neatness of their stitches, they can simply cut them off and start again.

After the features have been sewn onto the puppet you can easily add yarn hair. Simply cut 8-12 strands of yarn and tie them together at the middle. Place the tied bundle of yarn hair at the top of the puppet and use the same stitch that you used for the facial features to secure the hair in place. I like using short hair for the puppets, but for girl puppets, some children may want longer hair. Make sure to stitch the hair on top of the puppet's head and on both sides of the head before styling it. For instance, if a student wants to braid the hair, make sure it is firmly in place before beginning. The hair will be much easier to braid once it's on the puppet's head.

Once the face and hair are complete, have fun with your puppet. Put on a play or write out a biography for your puppet friends. Older children can use markers or paint to add details to their puppet like clothes or accessories. I've worked with High School students to make puppet self portraits. This is a great activity especially at the beginning of the school year when you want to learn more about your students. Not only do they create a graphic representation of themselves, but I also ask them to explain the choices they made while designing the puppet. It is fascinating to hear their explanations for the choices they made. You can learn a lot about your students through this process.

I love using puppets with children but in recent years they have become less popular. I'm not sure why. I love them because children can express thoughts through a puppet's voice that they would normally be reluctant to voice



any other way. It is a wonderful way to experience different points of view.

Years ago I was working with a children's theatre company. As a fundraiser we asked celebrities to make sock puppets that we then auctioned off. Two things about this experience were amazing to me. First, the celebrities were reluctant to create a puppet because they seemed to feel it required too much talent, time or creativity. We only gave them fifteen minutes to make the face of the puppet. We have a professional artist who would add the hair and accessories later. Once they got started, however, they were easily able to make the puppets in a speedy manner. The second and more interesting realization was to see how creative these puppets were. They were using the same supplies as I've listed above, buttons, yarn, plastic needle and white sock, but they were really able to give their puppets character and they did it in minutes. It was wonderful to see and they really responded well to the challenge. We made good money for the theatre off this auction and it was fun to do. To get the celebrities, we simply worked with our local talk radio station and asked them to give any celebrities that were coming through for a promotional interview a small prepared package. The station really got behind the idea and we ended up with 30 signed puppets. Not only did we raise money for the theatre, we also had a special interest story that resulted in excellent buzz for the institution.



## Activity #10: Animal Art

Too often art teachers allow color blind children to skate through class without really developing their skills. It's a downward spiral. I have seen teachers who expect children to do badly in art class or some other subject (physical education is really bad for this, too) to basically stop teaching them and let them pass without any real effort. As a result, the child performs exactly the way the teacher expects; poorly. Let's shrug off those expectations and give kids a chance to excel.



My favorite drawing activity for young children is animal sketching. This sounds hard because animals are hard to draw, but I made a discovery a few years ago that produces excellent results. My experience is that once children know they can succeed, they are more eager to develop their skills. Let's give them a way to succeed at something complicated!

This art experience involves something that I call “imaginative tracing.” Start with a pack of our R5910 Animal X-rays and Picture Cards. Open up the package and separate the picture cards from the x-rays. Don't show the picture cards to the students. Instead, hand out the x-rays along with tracing paper if you are working on a regular desk. Hand out regular photocopy paper if you are working on a light table. Alternatively, trace the x-rays by placing both the x-ray and the paper on a window.

The kids will want to take some time looking at the x-rays. They are pretty cool to look at. Compare and contrast all of the parts of the animal skeletons, the back bones, shoulder blades, hips, fingers and toes. This is an important part of the process. By examining the animals in detail, children are already forming a picture of what the animal looks like in their heads. Once the excitement has toned down, it's time to draw the animal. Working with just a pencil and paper, children will sketch the outer shape of the animal and start to add details based on the x-ray. The results are excellent. I've worked with children as young as 4 years old who have made some impressive pictures using this technique.

After students have sketched their animal, they can add color if they want. Once their pictures are complete, I will ask them if they want to see a picture of the real animal. Most will say yes, but some will say no. They are content with their own drawing. That's fine by me. For the rest, I show them the picture cards contained in the pack. It is amazing how close the kids get to create a nice drawing of a real animal. Parents are especially impressed. When students go home with a picture of an animal that they have drawn, especially if they can recite some of the facts about the animal contained in our teacher guide, parents develop a respect for their child's artistic ability. That's important because so many parents over the years feel that they themselves are “not artistic” and don't really know how or when to encourage their children. This gives them a great opportunity to express appreciation for a unique talent.



## Activity #11: Bug Sculptures

I love this activity because it combines sculpture with color choice in an interesting way. You can use clay or origami to make three dimensional bugs. We produce a unique product using a mouldable cardboard. You simply wet it and form the die cut bugs by curving, folding or gently bending the limbs, body and antennae. Once the card dries, it is ready to paint. Our R16036 Insect Sculptures contain 24 large bugs in six different styles.

Once the bugs have been moulded into the shapes children want, let them dry completely, usually overnight. I like giving them a primer coat of white paint. Then it's time to add the details. Start by researching the bugs. Often times websites will specify colors for the insects. This is especially helpful for color blind students. Once they know the specific color of the bug, they can easily find and paint the bug the appropriate color.

Alternatively, you can encourage your students to create fanciful insects. Before setting them free to paint their bugs any color they want, spend some time talking about why bugs are the colors they are. Certainly they use color as camouflage. Some moths even have large eye-like patches on their wings, so when they spread out their wings, they look almost like the face of an owl which usually keeps predators away. Some ingenious insects signal their poisonous defences to predators through bright body colors. Insects don't usually use color to attract mates. They mainly rely on scent and sound to attract potential suitors. With these facts in mind, ask students to think of a design motif that responds to the real purposes of color in nature. Alternatively, kids can be more fanciful. I love it when students come up with wild ideas like “What would beetles on Mars look like?” or my favourite, the wall paper butterfly—it fades into the wild landscape of traditional home decor! Let your students explore ideas and then describe them after they have made their bug.



Let me expand on this project idea a little bit more. Normally sighted people often wonder what it feels like to be color blind. When I'm buying clothes or picking wall paint colors, sales people will often try to describe the color they are suggesting by describing it in relation to other colors. That really isn't helpful.

People perceive things differently from each other. It may be a result of their time of life or they may have associations with music or painting or some other sensory input that is more emotional than perceptive. When you think about it, it makes perfect sense. We're all individuals, so why would we all see, hear, taste, touch or smell things the same way? Of course we don't! But it is always hard to relate that to other people. Instead, I relate it to animals. Everyone thinks that dogs are color blind, but they're not. Likewise, people think that all bats are blind. They are not. Let's talk about insects.

Bugs see a full spectrum of colors, but they don't see the *same* spectrum that we see. Instead of starting at red and moving through the spectrum to violet, some bugs, like honey bees, start a little higher up on the spectrum. Their sight starts near the orange part of spectrum and they can see yellow, green, blue and violet, but then they can also see ultraviolet which is invisible to us, but the bees can see them. This ability helps the bees see the pollen in the flowers. Where there is pollen, there is nectar which the bees use to make honey. If there is no pollen, in other words, when a bee has already visited the flower, there is no ultraviolet color, so the bees move on. It's an efficient system and it happens at a light frequency we just can't see. Perception is personal and this activity helps define the way people and animals see differently. It's not wrong....it's just different!



**Activity #12: Double Color Card City**

I wanted to end with a project that's artistic, but not based on color or even any of the traditional forms of art like painting, sculpting or drawing. Instead, I want to focus on photography.

I believe photography is becoming the most important art form for the digital generation and I think it's something that we often forget to develop with our students. I've worked on an activity that combines form with photography. The challenge I pose to students is to create the most dramatic images possible.

All we are going to do is use folded colored cardstock to create architecturally inspired landscapes. These landscapes can be made very quickly and can then be rearranged over and over again. Once children understand the process and start taking some pictures, the results can get very interesting.

I love this activity for a couple of reasons. First, I believe you can teach almost any subject area to young children through building blocks. This activity is sort of a super building activity so it will engage that portion of your students who like building. I've noticed that these kids tend to shy away from art normally. I'm not sure what the correlation is, but I have seen it over and over again. Maybe building is an activity that appeals to kids who enjoy gross motor, verbal action while most art is created through fine motor skills and through a more introspective process. Whatever the reason, kids who like to build, like this activity.

For your color blind students, this activity works on two levels. First, if you use our R22052 Double Color Card Sheets, the beautiful color palette is already in place. We've printed high quality cards

stock on both sides in complementary colors. You can use these cards to talk about the color wheel or just let the kids explore. No matter how they use the cards in any combination, they will look good together. Second, this activity is good for color blind children because we are going to focus on the photography of the landscapes they create. The color will be less important than the composition of the shots.



For all of your students, they get a chance to integrate art into other areas of their lives. Basically, we want to create a community represented through the buildings people live in on a miniature scale.

I like to call this type of activity “buildable sculpting.” I’ve used this many times in my career to do many different things. It can be used for mobile making, paper folding activities like origami and even engineering with younger children. In general, each piece that the children make is essential to the overall look of the final sculpture.

Start with the cardstock and cut out shapes. I like to cut out rectangles which can be folded in two or three places to make columns or pillar-like structures. I also cut out more organic looking shapes that will be used as layer cards between the column elements so we can stack them one on top of the other. The students then use these shapes to create a town or city, space station or tower. As children build, they find themselves improving upon or adjusting the work of their peers, which leads to an amazing development: The towers themselves begin to appear organic, in a sense. Ultimately, your students will have the experience of reviewing and redesigning their work while engaging in a greater, more unified project with their classmates. Make sure you take photos during this ever-changing process to help record the evolution of the project! I love to organize the photos in chronological sequence and allow students to witness how their art changed in relation to one another. It can be a very revealing process.



To illustrate what I mean, I want to show you a few photographs of this activity that I did with students ages 4-6 during a summer art camp. We pre-cut the card paper for this project, but you can get your students to help you with this step. Hand out sheets of the Double Color Card to your students. Cut the various sheets of Double Color Card into several large or smaller rectangle shapes. Crease the shapes at various points. You have to make at least 2 creases in the card. Older students can help crease the cards for the final activity.

Creasing the cards at different points allows your students to make interesting shapes, from tall rectangles to cubes, triangular prisms and more! This exercise will allow students to explore ways to align the shapes to make architectural sculptures. The objective is to create a city using as many or as few of the shapes as they wish. I will often give them the direction to use all of the shapes. Sometimes this is a great way to motivate students to work together and sometimes they get sloppy with the last few pieces, simply throwing them on the project at the very end in order to fulfil the requirement. Now I use this direction on a case by case basis. Some students stacked multiple shapes together to give their structure more strength. Others figured out how to stack on top of one another to create unique building shapes.

As the children aligned all their buildings into a coherent “neighborhood,” we encouraged them to draw streets and add small markers onto the paper underneath. Make sure to



the secure the paper roll onto the table or floor with tape! The exercise encouraged ongoing collaboration as students often turn away from one section of the cityscape to work on another. Meanwhile, another student may modify the look of the previous building arrangements.

It was an “organized chaos” as the sculptures were shifted around the table surface. There was some compromise that needed to be made when arranging the card buildings into different configurations. Some campers felt that the buildings each represented important municipal landmarks such as city hall, the library, museum, art gallery, fire station, subway, bank or hospital, and needed to be placed in certain areas rather than others.

Here is a look at the finished city, although we still saw “development” in some parts!

What I love about this activity is that children are being taught fundamental engineering principles while creating art. They must pay attention to placement, balance and proportion as they put together their sculptures. However, the combination of elements can create a truly pleasing display that students—and parents alike!—will love to review later on.

At the end of the process, encourage individual students to take dramatic pictures of their imaginary city. I've seen kids squat or lie on the floor and I've seen them get on tables and chairs to get different points of view of their city. I'll admit, I like the low perspectives. When a child lies on the floor to photograph the city, it distorts the perspective in very interesting ways and results in beautiful and original artwork. I print off a selection of photographs and I ask students to crop the images with scissors. When I was a kid we would never think of cutting a photograph, but now with readily available cameras and easy to print paper, it's a great way to customize the photos. We can talk about photo editing with older students, but I love the simple approach of cutting the paper photos. It feels more authentic to me.



**Conclusion**

Let me end with two stories. When I first started working with color blind issues and younger students, I tried using traditional methods of teaching. I labelled everything with its color name and I assigned color buddies to color blind students. In my heart it didn't feel right to me. It took some time to change my attitude. I had to go through a process before I could let color blind students simply be color blind artists. My goal then became about raising children's confidence and developing their artistic technique. That approach still makes sense to me. But it isn't always that simple.

I heard a story on National Public Radio about an artist named Peter Milton. When he was thirty-two years old he was a professor at the Maryland Institute College of Art in Baltimore. He was establishing himself as a landscape artist and had a major art exhibit at a local gallery. In a review of his work, the commentator referred to his work as “warm and sort of pinky...”. This disturbed Mr. Milton greatly. It was not what he had intended. So off he went to John Hopkins to have his color vision tested. To his utter disappointment, he discovered that he was color blind.

For some time he thought about giving up his art. Luckily he did not. Instead, and I think this is very sad, he decided that he would continue to create art, but he would do it without color. His work is amazing. He creates elaborate scenes in black and white. The drawings are highly realistic, but there is also a magical quality to them. They often have moving objects, clouds or purely whimsical elements that focus the viewer's attention on these almost mystic details. He is a remarkable artist.



When I heard his story I couldn't help but think that it was a shame that when he got his diagnosis, he lost something fundamental. I'm happy that he responded to his challenge by funnelling his energy into some truly spectacular work, but it also feels like he sacrifices his love of color. That breaks my heart. Once he lost his color confidence, he could never get it back so he abandoned it. I would hate it if a student that I was working with went through this same abandonment. It's our job to build confidence, not destroy it.

My second story happened more recently. I was travelling in a taxi cab with a colleague and we were discussing my approach to teaching color blind students. I have to admit that I only talked to the cab driver for a few minutes when we got into the cab and I decided pretty quickly

that I didn't like him. So we engaged in our own conversation and I was talking about color blindness and how to build artistic confidence in students. This was one of those conversations that two colleagues have when they have almost nothing else to talk about. We were passing time.

When we got out of the cab, the driver pulled me aside and said, “What you're doing with color blind kids is important. It's terrible to have your dream smashed because you're color blind.” When I heard this I thought it was a pretty extreme response. How do your dreams get smashed because your color blind? Let's put it into perspective, color blindness is an issue, but it's not a dream smashing handicap. When I asked him to explain he simply said, “I wanted to be an electrician and now I can only drive a cab.” Suddenly a light bulb went off in my head. I worked with electricians when I was a student and color-coded wires are extremely important. Electricians can do a lot of damage to expensive equipment if they wire it up incorrectly because they can't differentiate the wires according to their colors. I patted the driver on the shoulder and we went our separate ways.

So to conclude, I just want to tell you how important the work you do is. You can't “teach” a color blind person how to see specific colors, but you can build their confidence. You can give them strategies for dealing with their handicap and you can help them develop their technique. Color vision is an important issue and for some people it may end up being a dream smasher, but for most of your students, you can go a long way to giving them an appreciation for art, an understanding of color and tools to help them express themselves visually.

It's important work that you are doing.



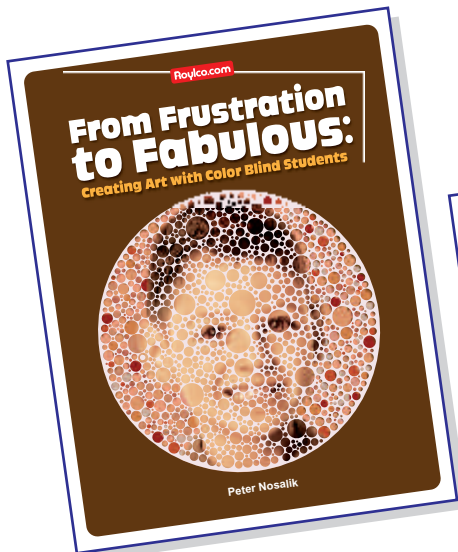
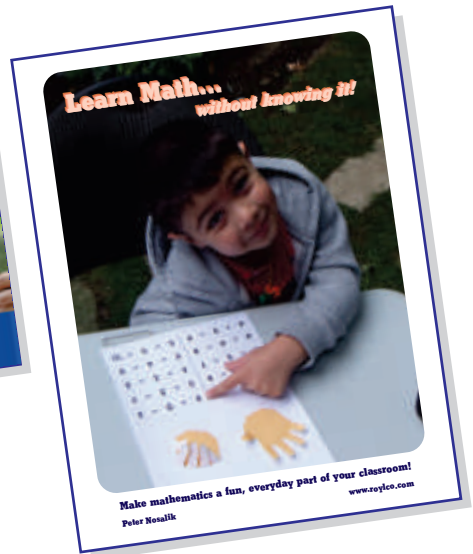
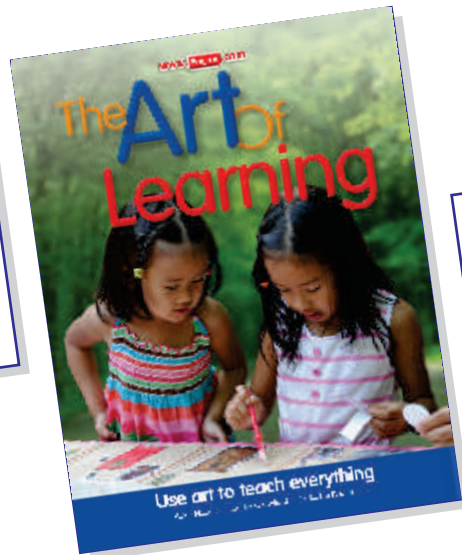
## Appendix: Product Information

We've listed items as they appear in the book. Some items are used throughout the book, but are only listed once. For more information about our products and to watch useful videos, please visit our website: [www.roylco.com](http://www.roylco.com)

| Page# | Item No. | Description                        |
|-------|----------|------------------------------------|
| 7     | R59421   | Color Vision Perception Kit        |
| 9     | R75415   | Finger Paint Sensations Kit        |
| 11    | R54480   | Paint Pad and Tray                 |
| 12    | R58624   | Gear Stencils                      |
| 12    | R5841    | Optical Illusion Rubbing Plates    |
| 12    | R55004   | Super Value Leaves Sponges         |
| 12    | R5320    | Floppy Foam Brushes™               |
| 12    | R5451    | Paint Scrapers™                    |
| 12    | R57015   | Junior Goo Spreaders               |
| 13    | R22054   | Lace Design Paper                  |
| 13    | R15333   | Botanical Cuts                     |
| 16    | R52009   | Face Forms                         |
| 18    | R52085   | Snowflake Stained Glass Frames     |
| 18    | R52087   | Tropical Fish Stained Glass Frames |
| 18    | R15257   | Stained Glass Craft Paper          |
| 20    | R15213   | Color Diffusing Paper™             |
| 20    | R54460   | Squiggle Pipettes                  |
| 20    | R54470   | Junior Heart Paint Pipettes        |
| 20    | R2131    | Bright Buttons™                    |
| 20    | R2184    | Manuscript Letter Beads            |
| 20    | R2186    | Lower Case Letter Beads            |
| 23    | R15334   | Crafty Leaves                      |
| 26    | R52004   | Card Characters                    |
| 27    | R15289   | All Kinds of Fabric Paper          |
| 27    | R15243   | Fabulous Fabric Craft Papers™      |
| 27    | R15263   | Tie Dye Craft Papers               |
| 27    | R15273   | African Textile Craft Papers       |
| 27    | R15199   | Around the World Paper Collection  |
| 28    | R2440    | Color Diffusing Paper™ Flowers     |
| 31    | R5601    | Plastic Lacing Needles™            |
| 34    | R5910    | Animal X-Rays©                     |
| 35    | R16036   | Insect Sculptures                  |
| 37    | R22052   | Double Color Card Sheets           |



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