

Living at the Intersection of Art and Science

When Illinois art teacher Tricia Fuglestad shared her vision at the recent *SLJ* Maker Workshop, adoring chat participants were ready to award her honorary maker librarian status.

For good reason.

A tireless innovator in the pursuit of interesting uses of technology, Fuglestad has modeled amazing ways to support hands-on learning in STEAM activities. The winner of a PBS Teacher Innovator award, as well as awards from state and national arts education organizations, she prompts her users to think about how they solve problems and invent. She says, "What's your learner style? What's your discovery style?" Then: "It's OK to not really know!"

STEAM-focused Art Lessons

Although Fuglestad shares links, lessons, and student examples on several social media channels including [Pinterest](#), her main platform is a STEAM Art Lessons [SMORE](#) online flyer.

Hands-on STEAM-focused art lessons boost design thinking, problem solving, and teach concepts. Although she is an elementary art teacher, many of her ideas are doable with older students, from animation stations (including [Rube Goldberg ideas](#)) and student-created videos to circuitry work and simple machine inventions. Encouraging students to draw, animate, and invent expands their view of makerspace opportunities.

For her STEAM projects, Fuglestad seeks a balance between art and science. Case in point: her post on [Paper Circuit ROBOTS 2.0](#). The light and the circuit is integrated into the design of the robot. Fuglestad played with different buttons and switches, landing on the use of a momentary switch in the robot's belly button (e.g., Adafruit's [tactile buttons](#).) There are fun paper engineering features, too, such as eyes that change when you pull the paper through the slot. Using clay or found materials, students could also light up 3D [relief sculptures](#). All of these circuitry projects would make great joint projects, either between grades or schools.

Stop-Motion Strategy

How cool would it be to have green screen stop-motion stations in your makerspace? Fuglestad lays out [the approach](#), the apps, and tactics to support the necessary teamwork. Her students painted backgrounds for their moving manikins and then used iMotion HD ([free](#)) and Doink's Green Screen app (\$2.99) to turn 30 frames of photos into two-second animations. Once students master these steps, they can freely explore creative video ideas. If you would like to try longer-term projects, her [rotoscoping](#) (contour line drawings turned into motion) projects are just the thing.

Got Digital Storytelling Activities?

Often, a weaker area in makerspaces is a built-in method for students to capture, reflect on, and share what they learned. For voice and sound capture and podcasting, see her audiobook ideas from a [field trip](#) to the Art Institute of Chicago

Video is a natural for allowing students to teach and share. On the e-book front, Fuglestad gave a shout-out to the [Book Creator app](#) (for iPad and Android). See the full story here for her 1st grade group project [Lima Bean Monsters](#).

Fuglestad was an early supporter of cross-curricular creative projects, from history connections to this [photography project](#) on visual metaphors. Scroll through her [SMORE](#) to see new, innovative ideas for visual notetaking, communication and graphic design, as well as projects to support design collaboration.

Latest LEGO Incarnations

The beautiful hallway [LEGO mural](#) in Fuglestad's school was based on an idea her librarian had for Black History month. Fuglestad wrote a grant application to get LEGO and software to bring that idea to life. Her [blog post](#) details the steps, from online layout to the detailed-oriented group work. Accuracy mattered, big time! Each person's contribution was literally part of a bigger picture, to stunning effect.

For an extra user-friendly station in a maker space, look at Fuglestad's LEGO symmetry lesson. It involved masking part of the LEGO plate, then spinning and matching tile patterns as her 5th graders worked. They loved the approach, going on to explore tiling and symmetry on paper and digitally. Offer paper and art supplies, as well as iPads and the [Amaziograph app](#) (\$0.99). Users can explore the paper versions and then apply the same thinking and precision to digital work.





ALEGO symmetry lesson
Photo courtesy of Tricia Fugelstad

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