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You Are a STEAM Teacher

Does your art curriculum include geometric concepts, two- and three-dimensional design, learning through discovery and invention, architecture or construction, nature, and technology? If so, you may not realize it, but you are a STEAM teacher. Art teachers were using STEAM long before it was ever a term or recognized for its strength.

Initially promoted by the Rhode Island School of Design, STEAM education is a response to STEM, an educational approach with a focus on the meaningful integration of science, technology, engineering, and mathematics. STEAM adds art to the acronym, underscoring the importance of innovation and creativity.

Through a quality STEAM approach to learning, students participate in engaging experiences to develop twenty-first century skills such as creativity and imagination, critical thinking, problem solving, and collaboration. Design thinking, a process that facilitates the design of objects, information, environments, and experiences, is also a natural component of STEAM.

The significance of STEAM is evidenced in a National Art Education Association
A STEAM Approach...

- is engaging to students.
- encourages creativity and innovation.
- values disciplines equally.
- seamlessly connects disciplines.
- presents open-ended problems that result in individual solutions.
- relates to students’ lives.
- is implemented through a wide variety of approaches.
- provides meaningful opportunities to collaborate with others.
- can lead to careers in the arts.
- just naturally makes sense.

Resources

- Next Generation Science Standards
  nextgenscience.org
- International Society for Technology in Education (ISTE) Standards
  iste.org/standards/for-students
- Next Generation Engineering Design Standards
  nextgenscience.org/search-standards?keys=Engineering
- Common Core State Standards for Mathematics
  corestandards.org/Math

Many art teachers are already working from a STEAM perspective but may not realize it. For example, if you are teaching about the natural world, the built environment, geometric concepts, types of symmetry, color theory, or using technology to create or share art, you may have a STEAM project. In a STEAM artroom, every project starts with art and connects one or more additional disciplines as they naturally apply. For instance, the concept of symmetry is readily found in art, math, and science. Mary Coy’s lesson, “Buzzing Bugs & Creepy Crawlies,” on page 120, is an example of the integration of these three disciplines. Over the course of the year in a STEAM program, students should work with all of the STEAM disciplines.

Whether you are a STEAM veteran or newbie, it will be a great benefit to your art program if you share what you and your students are doing with STEAM. Reflect on your own curriculum to consider how it may already work with STEAM, and don’t be shy about sharing your efforts. This could take the form of actual or online art exhibitions, murals, videos, blog posts, websites, articles, newsletters, or public presentations or performances to educate your administrators, other teachers, parents, and your community.

In this collection, aimed at elementary and middle-school students, SchoolArts offers a number of robust approaches to include STEAM in your curriculum. The articles were developed by art educators just like you and published in SchoolArts magazine. In each one, the addition of the arts to STEM is made more powerful because of the naturally interdisciplinary and engaging nature of the arts. STEAM also exemplifies the absolute necessity of art in an effective school program. For these reasons, we believe art teachers may be the best teachers of STEAM.
PART 1

SCIENCE

ELEMENTARY

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MIDDLE SCHOOL

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A FISH STORY
A LOVING LEGACY FOR A RETIRED TEACHER

The goldfish pond to honor a beloved teacher.
My colleague Janine Kairis and I retired the same year. We had begun teaching at Lamphere schools at about the same time—she in kindergarten and me in art. In between those twenty-some years, we shared much more than teaching. We talked to each other about our young children and our aging fathers. As the years passed, we discussed our children’s college careers, spouses, and eventually we shared the joy of grandchildren. Finally, our conversations turned to retirement and life after teaching.

A Zoo in the Classroom
I have taught with hundreds of great elementary teachers, but Janine was the only one who kept live animals in her classroom. Class pets included goldfish, a parakeet, and guinea pigs. Cleaning cages, feeding regularly, and carting animals home over school breaks were an added burden. But what students learned from the experience included the responsibility of daily feeding, the giving and receiving of love, and understanding death. “Be gentle” was Janine’s instruction to the kindergartners whenever they handled the guinea pigs.

The Goldfish Pond
When Janine retired, her goldfish stayed at school (as did I—on a part-time basis). No teacher volunteered to take the aquarium and fish, so we decided to add the two large fish to our school goldfish pond.

As a tribute to Janine, I decided to have each fourth-grader make a clay fish.
goldfish to decorate the pond area. One thing led to another, and we decided to name the pond the Mrs. Kairis Goldfish Pond and invite her back for a dedication ceremony.

**Making Fish from Life**
Students observed live models (goldfish from the pond) and drew them to make paper patterns. They traced their drawings on 6 x 10" (15 x 25 cm) slabs of clay and then carefully cut them out. Using craft sticks, they added scales and other details to their clay fish. While the clay was still moist, I poked a hole into the bottom of each fish with a dowel so it could be made to stand when complete. When the clay fish were dry, I fired them, students glazed them, and I fired them again. Dowels were inserted so the fish could be “planted” in the garden.

**The Dedication**
Prior to the dedication, I asked students (and teachers) to write down something they had learned from Mrs. Kairis. These were compiled into a poster based on the idea of Robert Fulghum’s *All I Really Needed to Know I Learned in Kindergarten*.

On the day of the dedication, touching words were spoken and hugs given. Janine’s husband and two of her grown children were present. It was then I realized that the success of our nature center and the care of the animals could be attributed to Janine’s loving guidance.

In closing, this is not a fish story at all; it’s a story about love. ☺️

Craig Hinshaw is a retired elementary art teacher who taught in the Lamphere School District in Madison Heights, Michigan. He is the author of *Clay Connections and Animals, Houses, and People* (Poodle Press).
Students added texture by pressing objects into the clay while it was still wet.

Students traced their hand-drawn patterns onto slabs of clay.