Choice-Based Art Choice-Based Art classrooms are working studios where students learn through authentic art making. Control shifts from teacher to learner as students explore ideas and interests in art media of their choice. This concept supports multiple modes of learning to meet the diverse needs of our students.

THIS IS NOT ART, IT'S ENGINEERING!

BY DIANE JAQUITH

Trap doors and trapezes. Parachutes and jet packs. Water-filtration plants and Zambonis. These are among the works in a recent art show that prompted a parent to distinguish between art and engineering by exclaiming, "This is not art. This is engineering!"

Children are captivated by objects, and art teachers can capitalize on this fascination. A collection of recycled items—cardboard tubes, plastic bottle caps, egg cartons, ribbons, wood, foam—invites imaginations to invent. This type of innovation happens in an area of the choice-based classroom, which goes by many names: "The Construction Center," "Inventors' Workshop," or simply "3-D." It is the favorite studio center for many of my students. Our "3-D Design Studio" is wildly popular because it houses materials not readily available in most homes. Students are eager to check out new offerings scattered among the usual supplies: cardboard, fabric, foam, string, straws, pipe cleaners, wood shapes, and cardboard triangles for brace supports.

The 3-D Design Studio is predictably unpredictable! Curiosity drives students to discover new uses for familiar objects and innovative constructions through play and experimentation. One day, plastic paper clips from the recycle center were interlocked to build towers and mythic creatures. On another day, turquoise foam shoe inserts from a manufacturer's overstock were transformed into tree houses and swimming pools.

Three-dimensional design instruction emphasizes basic concepts for artistic and engineering minds. A group of kindergarteners, playing with long paper strips, realized they could make the strips stand up by folding and gluing tabs. Top-heavy constructions triggered a demonstration by the teacher on supports, soon followed by a discussion about balance. As students advance their skills through trial-and-error, further instruction targets their needs. For example, kinetic designs with moving parts present specific issues. Simple technology enables gadgets to bend, twist, twirl, and roll. With practice, students develop a repertoire of engineering techniques.

Understanding the properties of materials enables children to match materials with their uses. For example, cardboard bends more readily in one direction because of its grain. Adhesives are not equally appropriate for all applications. When students understand which glue or tape works best for a specific purpose and *why*, they are equipped to make better decisions. My students' adhesive of choice, clear tape, works well in some situations but not in others. Hot glue connects plastics but is not best for wood. White glue is better, but will not hold on felt. And, is duct tape really stronger than anything else?

A popular assessment, held early in the year at my school, reinforces the concept of joining materials together using alternative strategies. The "Attachment Test" is an annual requirement for my students in grades 3–5 who want to work in the 3-D Design Studio. I explain that the test is like the deep-water test for swimming: "You need to pass in order to swim in the deep end." Using no glue or tape, students demonstrate different kinds of successful attachments. Notched cardboard, paper fasteners, twisted wire, sewn stitches, and insertions through punched holes are among solutions discovered during the test. Those passing (everyone who tries, passes!) identify themselves as 3-D designers and show off their attachment techniques in novel ways. One third-grader built robotic animals that eventually had moving parts, all connected with pipe cleaners.

Peer teaching and learning are essential in self-directed learning environments. Students learn to rely on one another for ideas and strategies as they define and solve problems. Collaborative groupings are flexible, self-selected and based on skill needs and partnerships. A group of girls designing a cruise ship divided up jobs to accelerate their work. They were following through on a plan hatched at recess. Nearby, four boys loudly contested the features on their carpet factory, eventually agreeing to add both a conveyor belt and an elevator run by a pulley system.

Students may have an artistic preference to work alone. A craft-stick satellite disappeared one day and returned a week later with a motor that enabled it to rotate. The student, a fourth-grader, proudly reported that he had no assistance whatsoever. When students take initiative to go deeper with their learning, blurring the boundaries of school and home, it is clear that the work is meaningful. Connections are being made and understanding happens through focused engagement.

To the parent whose comment separated engineering from art, I would respond that art encompasses so much more than painting, drawing and sculpture. We teach our students to be open to every possibility and facilitate their success! ■

Diane Jaquith is a K–5 art teacher in Newton, Mass. She is a co-founder of Teaching for Artistic Behavior, Inc. (www.teachingforartisticbehavior.org) and co-author with Katherine Douglas, of "Engaging Learners through Artmaking." She is also co-editor, with Nan Hathaway, of a new release, "The Learner-Directed Classroom: Developing Creative Thinking Skills Through Art" published by Teachers College Press.