



SCHOOL SERVICES

2019-2020

Tinkering, Making, and Creative Reuse for PreK-12
Serving Los Angeles County and environs

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ABOUT REDISCOVER

Founded in 2004, reDiscover is LA's expert in tinkering, the variant of maker education that focuses on the hands-on manipulation of real materials. We place students' exploration at the center of their learning. Our classes are filled with fully engaged "minds-on, hands-on" students gaining intuition about the connections between playing, making, and design. We use abundant materials economically and sustainably sourced from donated recyclables, industrial offcuts, and discard piles. These creative reuse materials engage students' imaginations, expand the scale of their ambitions and allow for rapid prototyping.



Tinkering means making something new from something old, iteratively designing, making, and remaking. It is empowering, an excellent vehicle for teaching soft skills, and the basis of both scientific and artistic thought. To facilitate tinkering, reDiscover teaches safe tool use and construction techniques, using an ambitious set of hand and power tools. We have honed our Tool Safety Protocol over the past ten years, training over 4,000 children from kindergarten to high school to cut and drill safely.

**ABUNDANT MATERIALS.
REAL TOOLS.
SAFE ENVIRONMENT.**

FOR STUDENTS

In-class or after school enrichment provides engaging tinkering activities for PreK-8. reDiscover brings selected tools and materials to provide a sequence of guided activities working in a variety of natural and manufactured materials. After school programs run for 8-12 weeks, to match your existing after school program. School day classes range from one-off workshops to full semester courses. reDiscover also operates classes and workshops at our fully stocked kids' makerspace in Venice.



ONE TIME WORKSHOPS

reDiscover facilitators bring tools and materials to provide students with an intensive hands-on art/engineering/tinkering activity in your classroom or makerspace. 45-120 minutes.

The Tin Forest

Inspired by a delightful picture book, students learn about reduce-reuse-recycle-rediscover and create a sculpture with recycled materials for display in a forest tableau. (PreK-2)

Wind Tube Exploration

Using reDiscover's Vertical Wind Tubes and creative reuse materials, students explore wind flow and iterative design as they create and tinker. Older students work to solve specific challenges and measure the effects of design changes. (PreK-5)

Light Exploration

Students use cardboard tubes, reflective mylar, and other materials to experiment with light, reflection, and transparency, creating a fascinating light object to take home. (K-2)

Bamboo Structures

Students get geometric in 2D and 3D with straws and connectors, then scale up to bamboo poles to create giant structures. (3-8)

Tool Safety Workshop

Our most popular workshop

Students will learn to safely use woodworking tools like drills and saws, in the context of reDiscover's Tool Safety Mindset that can be applied to any tools in your makerspace. (3-12)

Not A Box

With drills and hand saws, students will create a 5-sided structure that looks suspiciously like a box... until they turn it into a bookshelf, monster head, or any other of the many things that can be made from a rectangular prism. (3-12)

Design Thinking Workshop

Plan, design, and prototype a real world solution to a human-scaled problem, working primarily in cardboard as a construction medium. Various topics. (6-12)

SEMESTER CLASSES

reDiscover facilitators bring tools and materials to provide students with an intensive hands-on art/engineering/tinkering activity in your classroom or makerspace. 45-75 minutes per week for 8-16 weeks.

Curriculum Linked Maker Projects

In 8-12 classes, students build a project that simultaneously reinforces maker skills, design thinking, and grade-specific curriculum standards from NGSS, CCSS ELA or Math, or VAPA. reDiscover works with teachers to identify upcoming units that can be converted to a maker project. Examples: Self-Portraits (1st grade), Wind-resistant Skyscraper (5th grade) (K-5)

Design Thinking Class

This 12 to 16 week course leads students through a process of Design Thinking, solving real world problems elicited from the school community, including researching, brainstorming, prototyping, and building, and presenting solutions that fulfill the needs of a selected “client.” This class aligns with NGSS-Engineering Design 6-8. (6-8)

Recess, Clubs, and Afterschool

Working within your afterschool enrichment system or at recess, reDiscover facilitators teach a mix of design, art, engineering, and woodworking activities. Classes include skills building, safe tool use, projects, and open build time. Each semester has a theme, such as Space Exploration, Undersea Adventure, or Miniature World, that informs the arc of activities. We recommend restricting participation to a three grade span, such as 3rd-5th. (preK-8)

SPECIAL PROGRAMS

Inspire and reward your students with a special event or field trip to reDiscover's amazing Kids' Makerspace

Field Trips to reDiscover's 2,000 sf Kids' Makerspace

Most reDiscover programs can be turned into field trips, including tool training classes, art classes, tinkering programs, and professional development workshops. Our two rooms of makerspace facilities can accommodate up to a total of 50 tinkerers. Use the chop saw, band saw, drill press, and jigsaw, drawing from the hundreds of categories of materials in our Upcycled Materials Warehouse. (PreK-8)

Cardboard Playground

We bring a truckload of appliance boxes, carpet tubes, and rolls of fabric for students to transform into castles, trains, forts, and cardboard costumes. Perfect for recess enrichment, special events, or fundraisers. One-off or weekly recurring. (PreK-5)

Pop-Up Makerspace

We supply tools, materials, and expert maker-educators for a 1-10 day residency. You designate a space and we kit it out, or supplement your existing makerspace with power tools. Each day, cycle through multiple classes for tool training and small take-home projects, or have one class go in-depth with woodworking and tinkering. A full-day workshop introduces safety equipment, clamps, drills and saws, design challenges, and facilitated tinkering. (3-8)

reDiscover provides extensive programming for families, including camps, classes, birthday parties, and drop-in tinkering at reDiscover Center in Venice. Do you have a fundraiser auction coming up? reDiscover is happy to donate a gift certificate to qualifying schools.

FOR TEACHERS

Whether you are a master builder with decades of shop time or new to project based learning and maker education, reDiscover can help you and your school improve your maker program.



WORKSHOP MODULES

At your school, at conferences, and at reDiscover Center, reDiscover's PD workshops are hands-on, fun, memorable, and full of skills and techniques you can use immediately.

reDiscover professional development workshops come in modules that can be taken individually or as an arc. Typically 60-120 minutes, each module goes deep into one aspect of maker education in a school setting. Led by reDiscover's facilitators, these modules provide a mix of hands-on activities, presentations, and educator discussions to customize the module's concepts to each school's needs. Getting hands-on simultaneously demonstrates classroom-ready activities and models how to support student-centered tinkering. reDiscover works with a lead educator before each module to customize the program to fit your organization's goals for the workshop.

Topics Include:

- Using Creative Reuse Materials for STEAM
- Cardboard Construction Techniques
- Managing a Cardboard-based Maker Program
- Introduction to Safe Power Tool Use
- Teaching Power Tool Safety
- Using Maker Education for STEM
- From STEM to STEAM
- Simple Machines in Cardboard and Wood
- Rapid Prototyping in Cardboard
- Mechanical Sculpture
- Design a Makerspace
- Design a Mobile Makerspace
- Custom Workshops

Featured Workshop:

Teaching Power Tool Safety

Gain the confidence to safely bring sharp-edged tools into your classroom or makerspace. Learn how to promote a culture of tool safety that becomes your classroom's norm. Teachers at any skill level will identify the toolset most appropriate for their classrooms. (3-8, HS applicable)

PROFESSIONAL DEVELOPMENT COURSES

reDiscover's Professional Development Courses combine 15 hours of workshop time at reDiscover or your school with 30 hours of homework and project time, most often offered as two consecutive Saturdays during a school break. LAUSD teachers may be eligible for 1 Salary Point upon the completion of the course.

Maker Education for K-8 Classrooms

Learn about maker education, its pedagogical underpinnings, and its positive impacts on student outcomes. Maker education is shown to support student engagement, knowledge acquisition, and growth mindset, with ancillary benefits for classroom management and community engagement. Gain practical skills in maker techniques, safely using maker tools in the classroom, and developing project-based lessons. The workshop include lecture, discussion, videos, demonstrations, and lots of hands-on activities. Homework provides a chance to apply newly acquired maker skills, explore the best practices in K-8 maker education most applicable to each teacher's goals, and develop maker enhancements to existing curriculum. reDiscover partners with school makerspaces around LA and arranges site visits so teachers can see maker education in action. For teachers with limited experience in maker education.

Woodworking in a Culture of Safety

Teachers in grades 3-8 learn how to safely operate woodworking hand tools such as drills, saws, and sanders, teach children the safe operation of those tools, and develop school-specific safety protocols that overcome institutional inertia. Workshops include lecture, discussion, demonstrations, hands-on activities, and peer critique. Learn about various models for creating a culture of safety, securing tools against improper use, and how peer-learning can extend a teacher's capacity in a busy woodshop environment. Then examine how woodworking techniques can enhance maker projects at all competence levels and across the curriculum. Homework gives teachers the opportunity to deepen their understanding of hands-on maker education, draft a safety protocol for their school, and enhance existing lesson plans with woodworking-based maker projects. Great for schools with an emerging woodworking program or an existing maker program.

RESOURCES FOR SCHOOLS

Curriculum and Makerspace Design Consulting

Whether you are just getting started with project based learning or fine tuning an existing makerspace program, reDiscover can help. Our expertise in safe tool use, curriculum-integrated maker projects, play-based learning, and materials management for STEAM and maker projects have led to major improvements in schools around L.A. A typical engagement includes an assessment of your existing makerspace resources, faculty and administration's readiness to engage Maker Education, and customized reports on what to buy, how to use it with your students, and suggested projects. (preK-8)

Tinkering Lab Installation

Complete permanent makerspace installation, including mounting hardware, workbenches, tools, and a starter kit of materials. Purchase a standard installation or set up a student design and installation workshop to launch your new makerspace with a collaborative project to increase buy-in and enthusiasm. (PreK-8)

Tool Rentals for Classroom Use

For a day, a week, or a semester, reDiscover can rent you a classroom set of drills, clamps, and saws plus include the materials for a semester of Tinkering. We source real tools that accommodate child-sized hands. A great way to try out classroom or makerspace tool use. PreK-K kit also available with hand cranked drills, hammers, and easy-to-use vice grips (PreK-8, HS applicable)

Abundant Materials for Tinkering

reDiscover works with over 100 local suppliers to collect a wide array of creative reuse and new materials that have been curated for maximum expressive possibility. Come and browse our warehouse of unique and familiar objects, available for deeply discounted sales to schools and artists, or order a delivery of bulk materials or classroom project kits. (all levels)

reDiscover partners with schools to provide maker summer camps throughout Los Angeles County including half-day and full-day camps and special events.

SERVICES AT A GLANCE

	PK	K-2	3-5	6-8	HS	Pricing
For Students						
<i>One Time Workshops</i>						
The Tin Forest						\$10 per student
Wind Tube Exploration						\$15 per student
Tool Safety Workshop						\$20 per student
Design Thinking Workshop						\$20 per student
<i>Semester Classes</i>						
Custom Maker Projects						Call for a quote
Design Thinking Class						\$4-8000
Enrichment Classes						\$200-350 per class
<i>Special Programs</i>						
Field Trips						\$300-\$600 per class
Pop-Up Makerspace						\$250 set up, \$1000 day
Cardboard Playground						\$750+
For Educators						
Professional Development						\$150-600 per session
Tinkering Lab Installation						\$3000+
Consulting						\$105 per hour
Tool Rentals						\$100+
Materials for Tinkering						\$75+

Packages of multiple or recurring programs are provided at a discounted rate. Additional discounts and full scholarships are available to qualifying schools, subject to the availability of grant funding. Additional costs for travel greater than 10 miles from 90066 may apply.



reDiscover

