

MAKERSPACE STATION SETUP GUIDE

& MANAGEMENT SYSTEM

A Complete Framework for Schools

Design Guide • Inventory & Labels • Safety Agreements

Rotations • Maker Portfolios • Budget & Grants

UM Printables

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Introduction & How to Use This Guide

Starting a makerspace is an exciting journey, but without a solid foundation of organization and management, it can quickly devolve into chaotic clutter. This resource is designed for school administrators, librarians, and teachers who are building a makerspace from the ground up or restructuring an existing one to be more efficient and safe.

Core Principles of a Successful Makerspace

- **Intentionality:** Every station, tool, and material should have a clear purpose and home.
- **Accessibility:** Students should be able to safely access and return materials independently.
- **Safety First:** Clear protocols and zoning prevent accidents and reduce liability.
- **Sustainability:** A good management system ensures the space can survive beyond the enthusiasm of a single champion.

How to Use This Resource

- **Phase 1 - Plan:** Use the *Design Guide* and *Budget Worksheet* to map your physical space and secure funding.
- **Phase 2 - Setup:** Implement the *Inventory & Labels* and establish your zones.
- **Phase 3 - Protocol:** Have students and parents sign the *Safety Agreement* before entering the space.
- **Phase 4 - Manage:** Use the *Rotation System* and *Maker Portfolios* to track student learning and flow.

MAKERSPACE DESIGN GUIDE

1. Vision & Goals

Before purchasing a single piece of cardboard, define the vision for your space. A makerspace is not just a room with tools; it is a manifestation of your school's pedagogical philosophy.

Vision Question	Consideration
Who is the space for?	Whole class instruction? Small groups? Free time? (Affects size and flow)
What is the primary focus?	Low-tech prototyping? Digital fabrication? Coding? (Affects budget and power needs)
How will it be staffed?	Dedicated facilitator? Classroom teachers? Volunteers? (Affects safety protocols)

2. Space Assessment & Zoning

Effective makerspaces are divided into distinct zones based on activity noise level, safety requirements, and utility access. A minimum of 800-1000 square feet is recommended for a full-class makerspace.

Zone Type	Activities	Requirements
Clean Zone	Design, planning, coding, 3D printing, portfolio work	Desks, computers, quiet environment, power outlets
Dirty Zone	Cutting, gluing, painting, cardboard construction	Durable flooring (not carpet), washable surfaces, trash/recycling access
Tool Zone	Hand tools, power tools, soldering	Safety glasses, first aid, restricted access, heavy workbenches
Storage Zone	Material inventory, works-in-progress (WIP)	Shelving, labeled bins, dedicated WIP shelves per class

3. Station Types

Instead of one monolithic workspace, organize your space into self-serve stations. Each station should be clearly defined and contain everything needed for that specific activity.

- **Tinker Station:** Take-apart electronics, loose parts, magnets, gears. (Low tech, high exploration).
- **Construction Station:** Cardboard, tape, scissors, glue, structural materials. (High consumption, dirty zone).
- **Circuitry/Coding Station:** Makey Makeys, Micro:bits, copper tape, LEDs. (Clean zone, requires tech).
- **Fabrication Station:** 3D printers, laser cutters, CNC. (Strict safety, clean zone, supervised only).
- **Textiles/Craft Station:** Sewing, knitting, origami. (Quiet zone, fine motor skills).

4. Furniture & Layout

Makerspace furniture must be mobile, durable, and adaptable. Avoid fixed desks. Casters (wheels) are your best friend.

Furniture	Recommendation	Why?
Workbenches	Standing height (36-40 inches), heavy-duty, with casters.	Allows students to work comfortably while standing; easy to reconfigure for large projects.
Stools	Adjustable height, backless.	Tuck under tables, don't clutter floor space, adapt to student height.
Storage	Clear, stackable bins with consistent labels (See Inventory Section).	Visibility reduces 'where is...' questions. Consistency builds student independence.
WIP Shelves	Dedicated, labeled shelving for Works-In-Progress.	Prevents the 'someone touched my project' conflicts. Critical for multi-day builds.

5. Storage & Organization Systems

A makerspace will live or die by its storage system. If students cannot find materials or, more importantly, cannot easily put them away, the space will become unusable within a week.

The Bin System

Standardize your storage using clear, stackable plastic bins. Clear bins allow students to see what is inside without opening them, reducing search time and mess.

Bin Size	Dimensions (Approx.)	Best Used For
Small	2.5 Qt / 6" x 4" x 3"	Screws, batteries, LEDs, brads, small fasteners
Medium	16 Qt / 16" x 11" x 6"	Markers, tape rolls, glue guns, hand tools, craft sticks
Large	64 Qt / 24" x 16" x 13"	Cardboard sheets, fabric, pool noodles, large recycled items

Shadow Boards for Tools

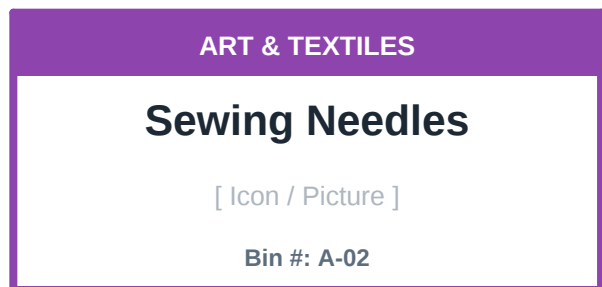
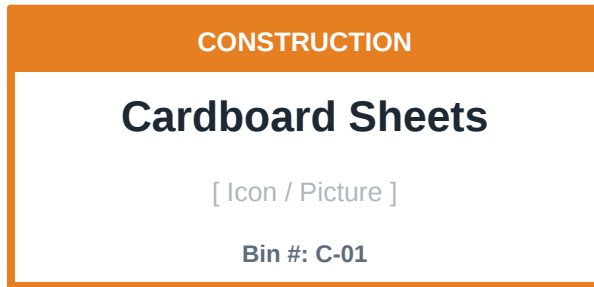
- Outline tools on pegboard or drawer liners using a marker or vinyl cutter.
- Students can instantly see where a tool belongs and notice if one is missing.
- Essential for hand tools (pliers, wire strippers, scissors) and power tools.

Works-In-Progress (WIP) Storage

Allocate a dedicated shelf section for WIP. Use masking tape and sharpies to create 'name tents' for each project. Unlabeled projects left on tables are the number one cause of clutter.

Printable Label Templates

Print the following pages on cardstock or full-sheet label paper. Cut them out and attach them to the corresponding bins. Each label includes the category color, the item name, an icon placeholder, and the bin location number.



Blank Label Templates

Write in your own materials, or use these as a template to create custom labels on your computer.

[Icon / Picture]

Bin #: _____

[Icon / Picture]

Bin #: _____

[Icon / Picture]

Bin #: _____

[Icon / Picture]

Bin #: _____

Student Rotation Management System

When a whole class enters the makerspace, allowing all students to rush to the same station creates chaos and conflict. A rotation system ensures every student gets exposed to all tools and skills, while keeping group sizes manageable and safe.

Rotation Models

- **Free Choice (Experienced):** Students sign up for a station on a whiteboard upon entry. Limits per station are enforced by the teacher. Best for older students who are already trained.
- **Scheduled Rotations (Structured):** The teacher assigns groups to stations. Groups rotate on a fixed schedule (e.g., weekly). Best for elementary/middle school or new spaces.
- **Project-Based:** Students stay at one station for 2-3 weeks until their specific project is complete, then rotate. Best for deep-dive builds.

4-Week Structured Rotation Matrix

Divide your class into 4 color-coded groups. Use the matrix below to assign stations. This ensures every group experiences all 4 maker categories over a month. Adjust station names to match your space.

Week	Group A (Red)	Group B (Blue)	Group C (Green)	Group D (Yellow)
Week 1	Low-Tech Construction	High-Tech Digital Fab	Tinker & Take-Apart	Art & Textiles
Week 2	Art & Textiles	Low-Tech Construction	High-Tech Digital Fab	Tinker & Take-Apart
Week 3	Tinker & Take-Apart	Art & Textiles	Low-Tech Construction	High-Tech Digital Fab
Week 4	High-Tech Digital Fab	Tinker & Take-Apart	Art & Textiles	Low-Tech Construction

Managing Works-In-Progress (WIP)

- When groups rotate, they must store their projects. Assign each group a specific colored WIP Bin (e.g., Group A gets the Red bin). All of Group A's projects go into the Red bin, which is placed on the designated WIP shelf until their station rotates back.