



Basic principles of accessible space

How to make your m-a-t space more accessible across physical, sensory, cognitive and economic needs

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Summary

This resource offers practical guidance on how to make a make-a-thek space more accessible for a wide range of users. Accessibility is not only about entering a room or removing physical barriers. It also concerns how people move, understand information, use tools and machines, manage sensory inputs, afford participation, and feel able to take part in activities.

The resource is not exhaustive. Accessibility needs are diverse and context-specific, and each library will have different building constraints, budgets, staff capacity and community needs. For this reason, the following principles should be used as a starting point for reflection, adaptation and improvement.

This resource focuses mainly on:

- physical and mobility accessibility;
- sensory accessibility;
- cognitive and mental accessibility;
- economic accessibility;
- accessibility of information and communication.

Accessibility should not be treated as an afterthought. It should be considered from the beginning, tested with users, and improved over time.

Universal Design and participatory design approaches are especially relevant here, because they invite people with different experiences and needs into the process of planning, testing and improving the space.

→ **Inclusiveness and accessibility are closely connected. Broader guidance on participation, belonging, representation and community practices is addressed in the resource  Basic Practices for Inclusiveness**

Access as a condition for making

Accessibility means creating the conditions for different people to enter, understand, use and participate in the space as independently, safely and comfortably as possible.

This includes users who may experience mobility barriers, visual or hearing impairments, neurodivergence, cognitive or learning difficulties, anxiety or sensory overload, economic barriers, language barriers, lack of previous experience with tools, machines or making.

Accessibility is not only about disability. It also benefits children, older adults, caregivers, first-time users, people carrying materials, people who are tired, people unfamiliar with the space, and people who need more time or clearer instructions.

We should therefore ask:

- *Can people enter the space?*
- *Can they move through it safely?*
- *Can they understand how it works?*
- *Can they access tools, materials and instructions?*
- *Can they ask for support?*
- *Can they participate without unnecessary cost?*
- *Can they use the space without feeling overwhelmed or excluded?*
- *Can they contribute to improving the space?*

People can be excluded both by **literal barriers, such as stairs or inaccessible tools, and by less visible barriers, such as costs, lack of information, intimidation or limited support.**

Accessibility as a step-by-step process

Many libraries operate in existing buildings, where not every accessibility issue can be solved immediately. This does not mean treating accessibility as optional, but approaching it as a progressive process: identifying barriers, communicating them clearly, improving what can be changed now, and planning longer-term adaptations where structural changes are needed.

A useful approach is to work on two levels:

General access to the library

Where possible, consider the accessibility of the whole building.

Focus on:

- entrance
- doors and thresholds
- lifts and stairs
- toilets
- signage
- reception or information desk
- circulation routes
- emergency exits

Specific access to the make-a-thek area

Accessibility should be considered from the very beginning of the make-a-thek design process, not added only after the space has already been set up. Even when large-scale architectural changes are not immediately possible, accessibility can still guide decisions about layout, furniture, machines, signage, communication, activities, and user support.

Focus on:

- the layout of tables and machines
- clear circulation
- accessible storage
- readable signs
- visible instructions
- quiet or less crowded corners
- seating and rest points
- staff support
- clear booking and onboarding procedures

If the space is not fully accessible, communicate this honestly. Users should know in advance what is accessible, what may be difficult, and who they can contact for support.

1. Physical and mobility accessibility

Physical accessibility concerns how people enter, move through and use the space.

A make-a-thek space usually includes tables, chairs, machines, cables, tools, shelves, materials and people moving around. This can easily create barriers if the layout is not carefully planned.

Access and circulation

Check whether users can:

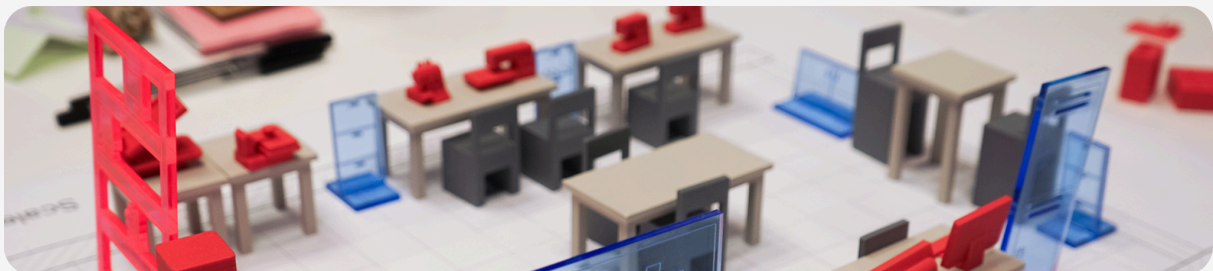
- enter the make-a-thek area without obstacles
- move between tables, machines and storage units
- turn around with a wheelchair or mobility aid
- reach exits and emergency routes
- avoid cables, boxes, bags or loose materials on the floor
- move without interrupting other users

Ensure clear, unobstructed passageways by removing temporary items and especially wires. Prioritize the following for accessible design: clearly marked routes, smooth transition between floor levels, designated wheelchair-accessible areas, and highly visible, high-contrast safety signage.

Tables, chairs and workstations

Workstations should support different bodies, postures and levels of energy. Not every table must be perfect for every use, but the space should include options. Consider:

- at least one table that can be used while seated
- enough knee clearance under tables
- chairs with backs where possible
- space for wheelchair users at worktables
- flexible seating for people who cannot stand for long
- work surfaces at different heights, where possible
- access to tools without needing to stretch, bend or climb



Machines and tools

Machines should be placed so that users can approach them safely and understand how they work. Consider:

- whether controls are reachable, and screens or displays are visible
- whether the machine requires standing for long periods
- whether a trained person can assist
- whether a user can observe a process even if they cannot operate the machine directly
- whether tools are stored at reachable heights
- whether sharp, hot or heavy tools are placed safely

Some tools may not be independently usable by everyone, but the activity can still be made accessible through assistance, adapted workflows, teamwork or alternative roles.

Rest points

A make-a-thek space should include places where users can pause.

Provide:

- chairs or benches, or a place to wait during machine use
- a calmer area if possible, or space away from machines
- options for people who need to sit while participating

Rest points are especially important for older adults, disabled users, people with chronic fatigue, caregivers, children and anyone participating in longer workshops.

2. Sensory accessibility

Makerspaces can be noisy, crowded and intense. Machines may produce sound, heat, smells, fumes, vibration, flashing lights. Sensory accessibility means reducing unnecessary sensory overload and communicating sensory conditions clearly.

Noise

Machines such as laser cutters, sewing machines, vinyl cutters, extraction systems or 3D printers may generate different levels of noise. Consider:

- separating noisy machines from quieter activities where possible
- offering quieter time slots, or a quieter corner for explanation or rest
- warning participants before loud processes
- providing ear protection where needed
- avoiding unnecessary background music during focused activities

Light and visual comfort

Some users may be sensitive to strong light, glare, flicker or visual clutter. Consider:

- avoiding excessive glare on work surfaces
- using task lighting where needed
- keeping signs clear and readable
- using high contrast for important information
- avoiding too many competing posters or signs in one area
- making safety information visually distinct

High-contrast, large-print signage is also recommended, especially for safety information.

Smells, fumes and air quality

Some making processes can involve smells, fumes, dust or particles. Consider:

- using proper ventilation and extraction where required;
- clearly communicating which activities may produce smells or fumes;
- avoiding unsafe materials;
- separating fume-producing processes from general activity areas;
- offering alternative activities for users who may be sensitive to smells or air quality.

Energy efficiency should never reduce safety. Ventilation and air quality are essential parts of accessibility.

Crowding and overstimulation

A crowded space can make participation difficult for some users. Consider:

Consider:

- limiting participant numbers when needed
- creating clear activity stations, using visible labels and zones
- offering small-group formats, avoiding overcrowded tables
- allowing people to step out and return
- providing clear start and end times



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3. Cognitive and mental accessibility

Cognitive and mental accessibility concerns how easily users can understand, navigate and participate in the space. **A make-a-thek space can feel intimidating, especially for people who are new to machines, tools, technical language or group learning environments.**

Clear onboarding

Users should understand how the space works before they are expected to use it. Provide clear information about what the make-a-thek is, who can use it, what is free or requires booking, which machines need training or supervision, who to ask for help, and where tools and materials are stored. This supports confidence, autonomy and safer participation.

Simple instructions

Instructions should be clear, visible and easy to follow. Use short sentences, plain language, step-by-step guides, images, pictograms, examples, checklists, colour coding or labels where useful. Avoid assuming that users already know technical terms; when a term is necessary, explain it.

Predictable activity structure

Workshops and open sessions are easier to access when users know what to expect. Communicate duration, steps, skill level, materials provided, what participants need to bring, whether breaks are included, whether support is available, and whether the activity is beginner-friendly. Predictability can reduce anxiety and help people decide if an activity is right for them.

Support without judgement

Some users may need more time, repetition or reassurance. Create a culture where questions are welcome, mistakes are part of learning, users can observe before trying, different speeds are accepted, and facilitators explain clearly and calmly. The space should support different ways of learning, not only confident or already skilled users.

Beginner-friendly first projects

Easy first-time projects reduce complexity and help users gain confidence. Good first projects should be simple, low-risk, achievable in one session, clearly explained, supported by examples, and connected to useful or meaningful outputs, such as a small repair, a patch, a material sample, a label, a sticker, or a guided machine demonstration.

4. Economic accessibility

Economic accessibility means reducing financial barriers that prevent people from entering, experimenting or continuing to participate. Making can become expensive if users need to pay fees, buy materials, bring their own tools, or purchase components before they even know whether they want to continue.

Participation costs

If the space requires fees, consider free trials, low-cost introductory sessions, sliding-scale pricing, trust-based payment systems, free participation for specific groups, lower-cost access at certain times, or partnerships that sponsor participation.

Trust-based systems can reduce the discomfort of having to prove financial difficulty.

Shared tools and materials

Provide shared access to basic tools and first materials where possible, such as fabric scraps, donated garments, paper, cardboard, thread, wool, buttons, small electronics, filament for first tests, repair materials and hand tools.

A shared material shelf, donation box or small material library can reduce costs while reinforcing circularity.

Clear communication about costs

Users should not discover hidden costs after they arrive. Clearly communicate what is free, low-cost or paid, whether materials are included, whether users need to bring anything, whether tools can be borrowed, and whether support is free.

Economic accessibility is also a matter of trust: clear information helps people decide whether they can participate.



5. Accessible information and communication

Accessibility starts before a person enters the space. Information should be available, clear and easy to find.

Before the visit

Provide information about:

- location of the make-a-thek area and opening hours
- how to enter, and accessible routes
- available support or whether assistance persons are welcome
- accessible toilets, where available
- booking requirements
- language of activities
- cost of participation
- contact person for access needs

If the space has limitations, state them honestly and explain possible alternatives or support.

In the space

Use signs, labels and instructions that are readable, high contrast, large enough, placed at accessible heights, easy to understand, and consistent across the space.

Important information includes:

- **machine safety rules**
- where to ask for help
- storage labels
- booking instructions
- **emergency information**
- **which tools require supervision**

Feedback channels

Users should be able to report barriers or suggest improvements through clear and accessible channels. This can include a **visible contact person, a feedback form, post-activity feedback cards, informal conversation moments, and mechanisms to request assistance or adaptations.**

It is important also including people with disabilities in planning and set-up, and in providing ways for users to request equipment, accommodations or guidance.

5. Test the Space with People

Accessibility cannot be fully designed from assumptions.

Test accessibility with people who may experience different barriers or needs in the space, not only through internal assumptions. This can include planning, walkthroughs, practical activities, feedback moments, redesign, evaluation and discussions with users who have diverse physical, sensory, cognitive, economic, or social needs.

Users should not only be recipients of accessibility measures. They should **help define what accessibility means in practice**, identify barriers that staff may not notice, and suggest adaptations that respond to real needs. Accessibility, inclusion, and equity should be considered throughout the whole make-a-thek journey, from planning and set-up to activities, communication, management, and future improvements.



What if the space cannot be fully accessible?

Some libraries may face structural limits. The building may be old, the room may be small, the budget may be limited, or some changes may not be immediately possible.

In that case:

- **be transparent about limitations**
- **improve what can be improved**
- **remove small barriers first**
- offer alternative formats
- partner with more accessible venues
- bring part of the make-a-thek activity to another space
- provide remote or digital access to some resources
- **ask users which changes would matter most**

A space that is not fully accessible should not stop trying. Accessibility can be improved over time through small changes, feedback and planning.

Accessibility checklist

Use this checklist as a practical starting point. Select what can be done now and identify longer-term goals.

Physical and mobility accessibility

- ☐ Keep entrances and circulation routes clear.
- ☐ Leave enough space between tables, chairs, machines and storage.
- ☐ Provide at least one accessible workstation where possible.
- ☐ Place tools and materials at reachable heights.
- ☐ Avoid cables, boxes and bags blocking paths.
- ☐ Provide seating and rest points.
- ☐ Make emergency routes clear and accessible.
- ☐ Check whether toilets and support facilities are accessible.
- ☐ Communicate any physical barriers before users arrive.
- ☐ Consider alternative locations or pop-up formats if the main space is not accessible.

Sensory accessibility

- ☐ Identify noisy, bright, hot, dusty or fume-producing processes.
- ☐ Separate noisy or intense activities from quieter areas where possible.
- ☐ Provide clear warnings before loud or intense processes.
- ☐ Use proper ventilation and extraction where needed.
- ☐ Reduce unnecessary background noise.
- ☐ Use clear, high-contrast visual information.
- ☐ Avoid visual clutter around essential safety information.
- ☐ Offer quieter time slots or smaller group sessions where possible.
- ☐ Provide a calmer area or rest point where feasible.

Cognitive and mental accessibility

- ☐ Provide clear onboarding for new users.
- ☐ Explain how the space works in simple language.
- ☐ Use step-by-step instructions and visual guides.
- ☐ Make beginner-friendly activities visible.
- ☐ Clearly mark which tools require supervision.
- ☐ Use predictable workshop structures.
- ☐ Allow users to observe before participating.
- ☐ Encourage questions and repeated explanations.
- ☐ Avoid unnecessary jargon.
- ☐ Treat mistakes as part of learning.

Economic accessibility

- ☐ Offer free or low-cost entry options where possible.
- ☐ Use sliding-scale or trust-based pricing if fees are required.
- ☐ Provide shared tools for first projects.
- ☐ Offer free or low-cost materials for beginners.
- ☐ Create a shared shelf, donation box or material library.
- ☐ Communicate clearly which materials, tools or activities are free, low-cost or paid.
- ☐ Avoid hidden costs.
- ☐ Consider partnerships that can support access for users with limited resources.

Accessible information and communication

- ☐ Provide accessibility information before people visit.
- ☐ State who users can contact for access needs.
- ☐ Make signs readable, consistent and easy to understand.
- ☐ Use high-contrast and large-print safety information.
- ☐ Provide information in multiple formats where useful.
- ☐ Make feedback channels visible.
- ☐ Invite users to suggest improvements.
- ☐ Review accessibility information regularly.

References and external resources

- **Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services**
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0882> [
- **Inclusive design toolkit** <https://miro.com/templates/design-toolkit-template/>
- Critical Making. *Creating an inclusive and welcoming Maker Space.*
<https://criticalmaking.eu/creating-an-inclusive-and-welcoming-maker-space/>
- **University of Washington DO-IT**
 - ***Making a Makerspace? Guidelines for Accessibility and Universal Design***
<https://doit.uw.edu/brief/making-a-makerspace-guidelines-for-accessibility-and-universal-design/>
 - ***ADEPT Accessibility Briefs***
<https://doit.uw.edu/programs/accessengineering/accessible-design-of-engineered-products-and-technology-adept/>
 - ***How makerspaces can be accessible to people with disabilities***
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