Instructions: Cut on the solid line, fold on the dotted line, and tape edges to make double-sided cards.

Form a Network

Review the websites of makerspaces in the Nation of Makers Member Directory (www.nationofmakers.us/member-directory).

Consider who you want to learn more about or partner with. Make contact to request an introduction meeting.

Go to the meeting with ideas on potential collaboration between your makerspaces.

"One strategy is to find allegiances in all kinds of places where you can ask for help. The first step is acknowledging that you don't know the answer and that makerspaces need to work together. That is how we find solutions."

-

What insights can your makerspace gain from other makerspaces, and what expertise can your makerspace share?

Community - Learn

Consider Disability

Watch Jessica Kellgren-Fozard's "I'm 'Special'" video that explains the difference between person-first and identity-first language for people with disabilities. (https://youtu.be/TFisTbTCims)

Review your makerspace's written or web documents — see if and how you refer to disabled people, and consider revising the text.

"Some people are offended when you call them disabled, but then I've also talked to people who really are prideful of that and they're like 'No! I am disabled, I am in this community, and I identify as that.' "

-

What is the difference between person-first and identity-first language?

Community - Learn

Welcome Mistakes

Reflect on a past mistake from any context (friendships, work, etc.).

What did you learn? How did the mistake impact you? How could you "welcome" future mistakes?

Trade stories with another maker or journal your responses.

"You have to make sure your space is a safe space to fail. Because making is all about failing forward and learning from your mistakes, and we have to make sure all of our makers realize, it's okay to make a mistake."

-

How do mistakes help you learn? What does it mean to "welcome mistakes"?

Community - Grow

| Card title | Front of card: Action | Back of card: Excerpt quote from data + Reflection question | Category |

Cultivate Respect

Find a way for members to individually communicate preferences, then collaboratively decide how makerspace decisions will be made.

How will everyone have the chance to provide input? How can each person's input be affirmed and acknowledged? How will you reach compromise and/or consensus?

"And if you don't necessarily have a culture of 'Hey, this is how we operate. This is what we're gonna do. This is the way we do things and make decisions and this is how we treat people within the group.' If you don't have that culture set in place, then people will create their own kind of microculture."

-

Who is involved and who is not involved in your makerspace's decision-making process?

Community - Grow

Celebrate Authenticity

Imagine your makerspace as a place where everyone is free to be their full, authentic selves.

What would it look like? How would you talk to one other? How would you act?

Brainstorm with others ways to initiate and cultivate such an environment.

"All of the structural injustices that have happened historically, all of the power dynamics that we carry with us often go unchallenged because you stay in your lane, you just do, because that's the way you've always been. But then sometimes, someone new will join and it's actually wonderful when the real them gets to come out, because they don't get to do that elsewhere."

-

How can you welcome others to live as their full selves within your makerspace?

Community - Grow

Generate Ideas

Designate a space for makerspace members to post their thoughts (e.g., whiteboard, bulletin board, shared online document).

Post this question: "How can we better serve you, your community, and fellow members?"

"One of the structural characteristics of diversity that makes it challenging, but also really exciting, is that there's no end-all, be-all solution. So we all have to come up with ideas, strategies, and practices that work for our population."

-

How does your makerspace come up with new ideas?

Community - Practice

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

| | Card title | Front of card: Action | Back of card: Excerpt quote from data + Reflection question | Category |

Foster Confidence

Talk with makerspace activity/class leaders about how feedback is provided to participants. Brainstorm ways to encourage positive discussions.

For inspiration check out Liz Lerman's Critical Response Process, which is a great example of artist-centered critique: lizlerman.com/critical-response-process/

"Our instructor was constantly giving compliments. She initially had called the project the 'Five-Minute Bag,' but then said the 'Five-Second Bag.' And when we asked her, 'Wait a minute! Didn't you say five minutes!?' She said, 'You're experts now! You'll be able to do it in five seconds!' She was building us up and building our confidence in a really positive way."

-

How can you build confidence and foster growth in your makerspace activities?

Community - Practice

Create Culture

Schedule a meeting with your makerspace leadership team. Collaboratively draft 'community expectations' or 'housekeeping rules' defining modes of interaction.

Post the resulting document in a noticeable location within your makerspace, and revise it as needed based on members' input.

"Intentionally putting together culture requires saying, 'Hey, do we all agree on this? This is how we're gonna operate as an organization.' I don't just mean having a strategic plan but also having guidelines for how we treat people, how we approach problems, how we disagree, how we do all these different things."

-

How do you make decisions as a community?

Community - Practice

Know Your 'Why'

Write down why you value having an inclusive makerspace and describe why you care about inclusivity.

Read your statement to someone else, revise it for clarity, and keep it handy so you are prepared for discussions on inclusivity within your makerspace or with other makerspaces.

"If I'm trying to talk to somebody about this inclusive space, and I start to see them frown ... I know I need to come back to the 'Why.' Like why is it important to be inclusive? The 'Why' ends up being a hurdle before you can even get to the 'How' if you're not on the same page about why it's important to be inclusive."

-

How can you clearly communicate the importance of inclusivity to others?

Community - Practice

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Educate Yourself

Review the identity types listed in the Nation of Makers Core Principles (www.nationofmakers.us/core-principles)

Which identity category do you know the least about? Listen to a podcast, read a website or book about that identity and/or the experience of people who have that identity.

"We need to be careful that we don't lean on other people for the emotional labor of educating about things that we can start to learn for ourselves."

-

What podcasts, websites, or books can you access to learn more about those identities?

Identities - Learn

Value Experience

Take time to learn from a member of your makerspace who has more experience than you.

Ask them questions about their experiences — How and where did they learn a specific skill? Who taught them? What advice might they share with you?

"There are older people in the community who can make things with their bare hands that you would need giant tools to build yourself. Don't forget, they were here before us. They have experience. Make sure your marketing includes them. Make sure your makerspace includes them."

-

How could you welcome and include members of varying ages?

Identities - Learn

Prioritize Inclusion

As a group, compare the demographics of your local community to that of your makerspace.

Brainstorm what may be preventing some groups from participating. Consider things like cost, language, transportation, skill levels, physical accessibility, schedule, etc.

Share your experiences of joining the makerspace and factors that affect your involvement.

"We are nonprofit and have a Pay-What-You-Can program, so our youth can pay a dollar to join. Our members come from a huge range of backgrounds and experiences and things like that, so we don't want to say that making is only for the people who can afford it."

-

How can you make your makerspace more accessible to underrepresented groups from your local community?

Identities - Learn

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Claim Identities

Review the identity types listed in the Nation of Makers Core Principles (www.nationofmakers.us/core-principles)

Write down your own identities in relation to each type listed. Journal about which identities are most important to you and why.
What are your preferences for sharing those identities with those in your makerspace?

"Sometimes you have an identity you didn't necessarily take onto yourself, somebody put that tag onto you. Identities include how we see ourselves and also how we are perceived, how we're seen by others."

-

What parts of your identity are most important to you?

Identities - Grow

Be Open

As a group, review the identity types in the Nation of Makers Core Principles (www.nationofmakers.us/core-principles) and write words or very brief phrases that define different types, using a new sticky note for each word/phrase.

Once everyone finishes, match each sticky note and identity type. Lead a discussion to compare and contrast the different perspectives. Be open to learning and compassionate when teaching.

"My mind was kind of blown yesterday, realizing that I had these preconceptions. One of the most important things when you're talking about inclusion is that you need to learn how to have those conversations, and you need to learn how to lose your preconceptions of what a term means or what someone else says a term means."

-

How could you expand your understanding of words that describe identity?

Identities - Grow

Disrupt Norms

'Minority Tax' has been defined as "the burden of time and resources placed on minority persons to represent and advocate for their communities" (Kamceva 2022).

Reflect on situations like this in our society. How can you disrupt this pattern, starting in your makerspace?

"White privilege and also the Minority Tax are sort of flip sides of the same coin. When you are trying to rectify exclusion issues, sometimes minority communities or communities that you're trying to serve have a 'tax' of needing to try to fix the problem themselves."

-

Do minority persons in your makerspace have to represent and/or advocate for their particular identity group?

Identities - Grow

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Recognize Individuality

Review the list of identity types on the Nation of Makers Core Principles statement (www.nationofmakers.us/core-principles).

Write down your identities in relation to each type of identity. What intersections do you see?

"In my makerspace, there are conversations about sexuality, and the intersection of being gay and religious ... and it's extremely different for everyone."

-

How do different identities impact everyday lives in different contexts?

Identities - Grow

Create Accessibility

As a group, watch these two videos about the 'Social Model of Disability' (youtu.be/24KE___OCKMw & youtu.be/9s3NZaLhcc4).

Identify barriers to accessibility in your makerspace, then brainstorm ways to address these barriers and make an implementation plan.

"The world is made for people of an average. Like height — being short, being tall. You can't make the doors taller, there's got to be a set table height — there's only so far you can go, but you want to make sure that that door is open. So you do what you can to make the space better and then when new people want to come in the door, you can say, 'We want to help. What can we do to help?'"

-

How can you make your makerspace more accessible for disabled members?

Identities - Practice

Explore Gender

Invite people to share their pronouns when introducing themselves in your makerspace.

Model this practice as a norm by sharing your own pronouns.

"Language is an ever-evolving thing. Where I'm from, we didn't have a culture of choosing pronouns. Be open to the fact that some people are not aware of these differences."

-

What can you do to make your makerspace inclusive of all genders?

Identities - Practice

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Cate-gory

Connect Makers to Educators

Invite local educators to visit your makerspace.

Show them examples of activities in your makerspace and ask them questions about how your makerspace could collaborate with educators and/or serve students in your local school system.

"If somehow we could integrate makers with educators, we could create projects that address specific educational standards and subjects. I'd like a directory. Kind of a GitHub for educational making."
-
How could your makerspace be more useful to local educators?

Leadership - Learn

Facilitate Learning

Build a collection of interactive learning activities in which makers learn together and share their skills.

"We're a very flat level organization. When I work with elementary schools, I'm not their teacher. That's a word I personally try to avoid, because if I'm doing all the teaching, I'm not doing a good job. If students are working with each other and teaching each other, I think it's better. ... If they can lead the class, then that's the best thing that could happen."
-
What types of interactive activities can you create to support learning?

Leadership - Learn

Convene a Board

Talk with directors from other local non-profit organizations to find out how they created their board.

Ask about their board's purpose, role, and/or responsibilities. Consider implementing their strategies to establish a board for your makerspace.

"I had a conversation with another board director... about setting the direction for the board, and it all comes back to board training and the board members."
-
How could an advisory board support the goals of your makerspace?

Leadership - Learn

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Set Goals

Establish goals for your makerspace related to identities, community, resources, and leadership.

Brainstorm ideas with other members, then collaborate to create a list of goals.

Create a plan to work towards goals — make each goal specific, realistic, and measurable, and assign a deadline.

"I think part of it depends on your goals. You still have to intentionally build community, and so for-profit places that become a job shop or machine shop are going to struggle in a way that's different than if you build a non-profit that is truly a makerspace, where you have the community as well as the knowledge and the makery."

-

What goals do you have for your makerspace?

Leadership - Grow

Name Your Mission

Create a "brainstorming wall" in your makerspace for members to write down their thoughts about the mission of your makerspace.

Schedule a meeting to discuss everyone's ideas and collectively draft a mission statement for your makerspace.

Post the mission statement prominently.

"You can ask yourself, 'Is this going to help sustainability? Is it going to help with our mission?' If you have a clear mission, then you pass every idea through that. Having a clear mission statement isn't necessarily going to filter everything out that needs to be filtered, but at least it does filter some of the ideas and help with focus."

-

How can an overall mission guide your decision-making?

Leadership - Grow

Make Connections

Create an inventory of resources in your area that help those in need. Gather brochures or fliers and make them available at your makerspace. Consider sharing information about these resources in a newsletter, on your website, or when interacting with those in your community.

"When people need more help than your resources can allow, think about what you can do to travel to them, whether it be Makerspace on Wheels or teaching classes. If folks have mental health issues though, recognize that you may be doing more damage than good if you're not a mental health professional."

-

Who in your local community can help meet needs that your makerspace cannot meet?

Leadership - Grow

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Know Your History

Find out who founded your makerspace, what motivated them to start it, where and when it began.

What identities were intentionally included? What identities were left out? Do these align with your surrounding community? How could history be celebrated along with change and inclusion?

"My group is primarily trans women of color and queer women of color, and it's led and made by and for that population."
-
How do the identities of your leaders impact who your makerspace serves?

Leadership - Grow

Affirm Contributions

Take time to affirm the contributions of members of your makerspace — verbally, via email, or with a written note of appreciation.

"I tell volunteers, 'Thank you, really. This is what it's about — contributing to the community. By participating, you're helping to maintain this.'"
-
How can you recognize and validate the contributions of volunteers, staff, and members in your makerspace?

Leadership - Practice

Incorporate Youth

Host a pizza night for young adults in your makerspace to learn about their interests.

Help them start their own club or organization by offering to be the sponsor or mentor.

"We have a youth steering committee and they wanted to do a hack-a-thon. So they planned the whole thing. They want to become entrepreneurs, and it's something they can put on their resume. We also help them find grants they can apply for."
-
How can your makerspace better serve young adults in your community?

Leadership - Practice

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Connect Makers to Work

Plan a career event aimed at young adults so they can learn about potential career fields related to making.

Invite makers who use making skills in their careers to present or provide information about their place of employment. Have a career and professional development presenter talk about the transferable job skills makers learn from making and your makerspace.

"For youth, it's about fun and discovery, maybe on an equal level, and then work as a last level, but not absent. There is an aspect where youth can start entrepreneurial endeavors so it's not as if these teens or youth don't think about how making fits into work."

-

What skills can people learn in your makerspace that could be translated to career skills?

Leadership - Practice

Focus on Retention

Ask members about what keeps them involved in your makerspace. Also, consider surveying or interviewing people who decide to discontinue their membership to learn what influenced their decision. Try new ideas - perhaps establishing a membership committee dedicated to welcoming new members or planning member events to keep people engaged.

"Incentivizing members to stay is important. As leaders plan for member increases, they have not necessarily always considered member retention."

-

What keeps a member involved in your makerspace?

Leadership - Practice

Teach and Learn

Invite local experts to visit your makerspace to share their work. Gather makers and community members to learn from their insights.

"We do quarterly meetups where we bring in both makers and outside experts. We've covered topics that range from conflict resolution to economic development. We bring in and connect state resources too. We also consult with towns and cities on how to get started and identify what resources are already there."

-

What knowledge or skills could you and local experts exchange?

Resources - Learn

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Secure Funding — *Resources - Learn*

Prepare a budget for your makerspace, including all assets, incoming resources and outgoing expenses required to maintain stability and accessibility for your community members.

Brainstorm a variety of possible funding sources.

"There has to be an underlying business model to be sustainable— for example, partnering with a university or some other sort of long-term funding source. A single grant will never ever make a makerspace, it simply will not happen."

-

What combinations of institutions, people, and/or businesses could provide funding for your makerspace?

Barter, Trade, Share — *Resources - Learn*

Talk with local community leaders and business owners about different kinds of resources. This might include knowledge, skills, space, people, events - see what a diverse group can come up with.

What are various ways of bartering, trading, and sharing? Discuss win-win scenarios that could result from combining efforts.

"It has to be give and take, and it's really important that energy and resources flow both ways."

-

What resources (beyond funding) are available and could be traded in your local community?

Contact Policy Leaders — *Resources - Learn*

Write a letter to your state policy leaders asking for the chance to speak with them about how your makerspace contributes to your local community.

"Our program director takes the student group to their state capital to speak to politicians. He's encouraging them to share some of their work and he's giving them an opportunity to have face-time with the people who make decisions about their communities."

-

Who are your local and state policy leaders? How does your makerspace align with their goals?

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Card title	Front of card: Action	Back of card: Excerpt quote from data + Reflection question	Category

Grow Sustainably

Consider organizing a sustainability drive for your makerspace where you ask members of your community to commit to providing monthly donations.

Set a fundraising goal and let community members know how their support will benefit your community.

"Our biggest challenge right now is that it's 100% volunteer, right? Now how do we find funding so we can actually bring on staff and scale up?"

-

How can you sustain the management of your makerspace?

Resources - Grow

Plan for Growth

Write a sustainable plan for increasing the amount of people involved in your makerspace. Ensure that your plan accounts for how you will support involvement after you bring in new members. Make sure to consider the overall capacity of your space, leaders, and current members.

"We have grown to a point where we have basically created systems for taking people on, but we don't have enough techs or shops to manage the number of members that we have and we haven't made enough money yet to actually hire more people."

-

What do you need to do before increasing your membership to ensure you'll be able to provide support to a larger body of members?

Resources - Grow

Mentor Volunteers

Volunteers are a valuable resource. Early on, find out what they enjoy doing, and what they hope to contribute and gain by working in your makerspace.

Discuss ways to support their hopes in whatever way you can (e.g., teach them new skills, work together on projects, connect them with others, etc.).

Find time to check in with them regularly.

"When I'm mentoring a new volunteer, what I usually do is I schedule the meeting for like 15 minutes before an event I have to go to. So I arrive 15 minutes early, and if they show up and we have the meeting that's their first step, right? I assign something small, and once something happens, then I can find another task that will be their own. We lay out a path and then we scale that up."

-

How can your makerspace support volunteers as valued resources?

Resources - Practice

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Take Small Steps

With makerspace members and those in your local community, brainstorm creative ways to support each other when funding presents a challenge.

Visit the BUILD Institute website to learn more about Detroit SOUP (www.buildinstitute.org/programs/soup/).

Could your makerspace adapt this idea?

"Pitch competitions can sound really terrifying. 'How could I ever go be in a pitch competition for 5,000 bucks?' Consider starting out at a low-entry level. Once you get comfortable doing low barriers to entry, then you can start to say, 'Hey, you know what? The patent office has a competition, and you can win 10,000 bucks for that.'"
-
How can a makerspace be a safe place for people to grow beyond their comfort zone?

Resources - Practice

Work with Local Businesses

Brainstorm a list of local community leaders or businesses you could reach out to. Then contact them to explore mutual interests, needs, and opportunities for collaboration.

"We go out to the local community, and get with all the shop owners for instance, and say, 'Okay, what would you like to do? Is there something a makerspace can go build for you?' And then I'll go back and say, 'Okay. They just need coasters' or 'They need wine glasses with their name on it.'"

What organizations or people in your local community have needs your makerspace could meet?

Resources - Practice

Community

By "Community" we mean people joining together. A makerspace can bring people together because of similarities like common interests and neighborhoods. They may also bring people together across differences like income, age, and profession.

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.

Identities

The term "Identities" covers a huge range of personal and public traits. For examples, consider the list of identity types in the Nation of Makers Core Principles.

Leadership

"Leadership" can take many forms. Our data shows that leaders in makerspaces listen to people, guide decision-making, make sure that stuff gets done, and take responsibility for logistics.

Resources

People and networks are some of the most valuable "Resources" for a makerspace. Space and tools are vital resources too, and of course we can't forget about money!

McNair, L. D. & Masters, A. S. (2023). *Building Inclusive Makerspaces*. Virginia Tech Center for Educational Networks and Impact. https://ceni.icat.vt.edu/makerspace.html.