

CoderDojo

CoderDojo Champions' Handbook

CoderDojo in the library

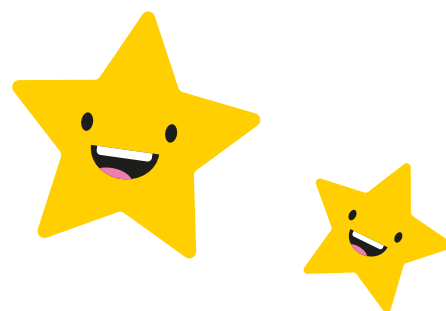


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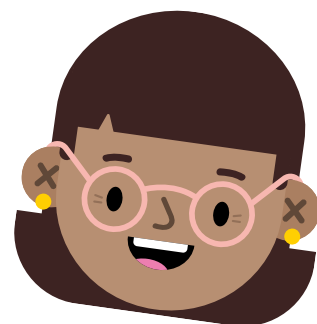


Why digital making is relevant to libraries



Offering digital making opportunities in your library will help you position your service as a key hub for learning crucial skills in our society. Public libraries are ideally placed within communities to support digital making for families and young people: they are safe spaces where children can be given the chance to access to the digital making tools and resources they need to develop skills for the 21st century while using their creativity. We recognise that libraries around the world are already running lots of programmes to engage their communities in STEM. This guide is aimed at libraries who wish to start a Dojo as a regular club for engaging youth in digital making, or to turn their existing activities into a Dojo and join the global CoderDojo movement.

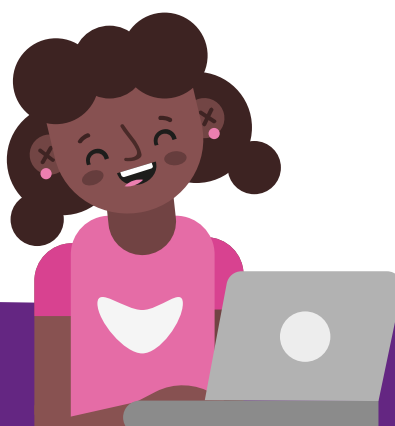
Benefits of starting a Dojo in your library



Engagement of young people

In the digital age, many libraries are finding it difficult to engage youth, as physical books are becoming increasingly replaced by electronic devices and online content. CoderDojo provides you with an opportunity to reaffirm your library's place as the heart of learning in the community.

Harnessing the potential of computers is a natural step that will help your library maintain its traditional role as a centre of knowledge. Running a Dojo is a great additional programme that will engage local youth and create a place where members of your community can gather together to learn, share knowledge, and connect with like-minded people.



CoderDojo is a fantastic offering and a well-known brand that is attractive to local authorities seeking to invest in community, educational, and youth initiatives or science and technology programmes, so running a Dojo can also help your library to attract funding. With CoderDojo, you can offer opportunities to learn technical, design, and social skills that will be a great addition to your library's range.

Flexibility

A Dojo is an informal learning environment, and the open-source ethos of the CoderDojo movement allows you to shape your Dojo to suit your specific circumstances. Everything from the time of day you run your Dojo sessions, to their frequency, to the material you cover is up to you and to the resources you have available.

A typical Dojo runs for one to two hours either once every two weeks or once a month. Many libraries have reported particularly high engagement at Saturday sessions. You are free to choose any day of the week and any time of day that suits your group, for example on Tuesday evenings after work, or after school on a Wednesday, or on a Saturday morning. Moreover, your sessions can have any length, from one to two hours, to three or even four hours.

Connect your library to a worldwide community

The CoderDojo movement is a global, open-source movement that is free and open for everyone to join. Anybody who shares the CoderDojo ethos can start a Dojo. The CoderDojo Foundation team will help you to get your Dojo registered and set up. We provide support to Dojos in the form of educational content, guides, and advice, whether they are new or have been running for a long time. Don't hesitate to contact our team if there is anything you need — we will do our best to assist you.



Your skills

Before we go any further, it is really important to note that you don't need technical skills to champion a Dojo.

The role of the champion, or organiser, is essentially to project-manage the Dojo. As a librarian, you already have a vast and valuable skill set for this. For example, you are comfortable engaging with your community, and you have the ability to recruit Dojo volunteers and promote your Dojo via your library's established channels.

You can be directly involved in facilitating the Dojo sessions if you like. As a librarian, you are well versed in directing people to sources of information. You don't need to know the answer to every question yourself — you can simply point young people to the right places to look for answers. When a young person at your Dojo encounters a problem, show them how to research the topic and search for an answer online; perhaps you know of some books in your library that will be of use.

It is important to remember that a Dojo is not the same as school. It is much more informal, with children learning by working mostly on their own, with occasional help from the mentors. The focus is less on teaching and more on helping kids find answers and promoting their independence. Therefore your role is not to be a teacher, but instead to be a facilitator.

Volunteers

Most libraries engage volunteers to help deliver a sustainable Dojo. The approach you take to recruiting volunteers in your Dojo doesn't differ from the way you would recruit other volunteers in the library. However, you can try specific avenues to find volunteers with technical skills.

One of the key features of any Dojo is the mentor team that supports the children. As mentioned above, no one (including you!) is expected to run Dojo sessions alone like a teacher in charge of a class. The more mentors you can gather, the better the experience for both the attendees and the mentors themselves.

The numbers of mentors you need will vary depending on how many Dojo spaces for young people you want to offer. Typically a ratio of no less than one mentor to eight attendees is recommended. Ideally, your team of mentors will include at least one person with a background in technology, and a number of other people eager to support young people and to learn while doing so.

Mentors are motivated by sharing their skills and giving back to their community – what better place to do this than in a library Dojo?

Finding mentors

Please see [page 15 of the Champions' Handbook](#) – dojo.soy/championshandbook for information about getting started with building your team and tips and resources for recruiting volunteers. Below are some further considerations.

Local community

For adults as much as it is for the young attendees, a Dojo is a place to connect and be a part of something bigger. Therefore, your local community is one place you should look for volunteers. In addition, it is a good idea to try to bring in mentors that are representative of the local population, because young people are more likely to keep returning to your Dojo if they have role models that they can identify with and relate to.

One way to do this is to encourage parents of attending children to help out. See [page 17 of the Champions' Handbook](#) for more information about involving parents in your Dojo.



Volunteer programmes

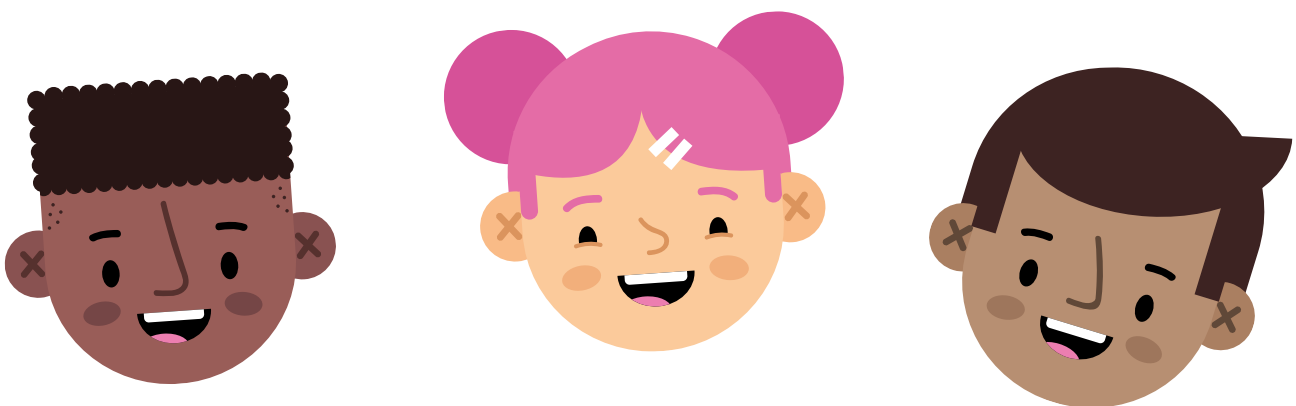
If you are struggling to attract mentors, try reaching out to nearby technology companies. It is not uncommon nowadays for companies to have paid volunteering time built into their employees' contracts. For example, an employee might have an allowance of two days per year that they may spend volunteering instead of working. When you break this down into hours, it could cover between five to ten Dojo sessions, depending on the length of yours.

Alternatively, why not use the volunteers you already have available through voluntary programmes within the library?

It is worth checking whether there is a government-supported programme in your area that can connect you to volunteers who have a background in science or technology, such as the STEM Ambassadors programme in the UK. These kinds of programmes are a great source of potential mentors, since the people signed up to them have already decided they want to donate their time, knowledge, and enthusiasm to inspiring young people to get involved with technology.

Pool your resources

If you are part of a group of libraries, you could consider pooling your resources and creating a 'travelling Dojo'. In this setup, the location of the Dojo moves among the different library buildings within the group. This way you can have the same volunteers mentoring in several locations. In order not to overburden the mentors with too many sessions, the Dojo could run less frequently in each individual library.



Preparing your mentors

Training

Although it is great to have mentors with technical skills, not every volunteer has to be a programmer. That being said, it is never too late to get coding, whatever your background is! You don't need to learn a lot to be able to guide children at least through the basics.

Some options for people who want to learn:

- The CoderDojo Foundation's Beginner Scratch Sushi Cards — dojo.soy/beginnerscratch - provide a good introduction for people new to programming and/or Scratch. If you can work through these, then you will be able to support most beginners in a Dojo. They are a great foundation, and for those wishing to explore further, there is also the Intermediate series — dojo.soy/intermediatescratch
- We are presently developing a mentor training course that will be available for Dojos to download and use.
- The Raspberry Pi Foundation offers a number of free online courses — www.futurelearn.com/partners/raspberry-pi - for learning Python with the aim of teaching it, including one course about transitioning to text-based programming from visual languages such as Scratch.
- In the UK, Ireland, and North America, we can offer training and familiarisation with coding and technology for volunteers who want to step up and join the people changing the world by being CoderDojo mentors. If you're interested in having the Raspberry Pi Foundation come to your area and deliver training for your group, please get in touch with us.
- A local technology company or any local business that employs technically skilled staff might be willing to send a person to provide one-off training to a group of mentors. Or indeed, the staff members themselves may be interested in volunteering their own time for this purpose.



Working with young people

If you or any of your potential mentors have questions about working with young people, see the [“Working with young people” chapter of the Champions’ Handbook](#) for some tips and advice.

Background checking

CoderDojo requires that all clubs comply with local regulations regarding child safeguarding. This may mean that volunteers in your Dojo need to have background checks. Note that in the UK, the STEM Ambassadors programme provides background checking for all its members for free; similar programmes in other countries may do this as well.

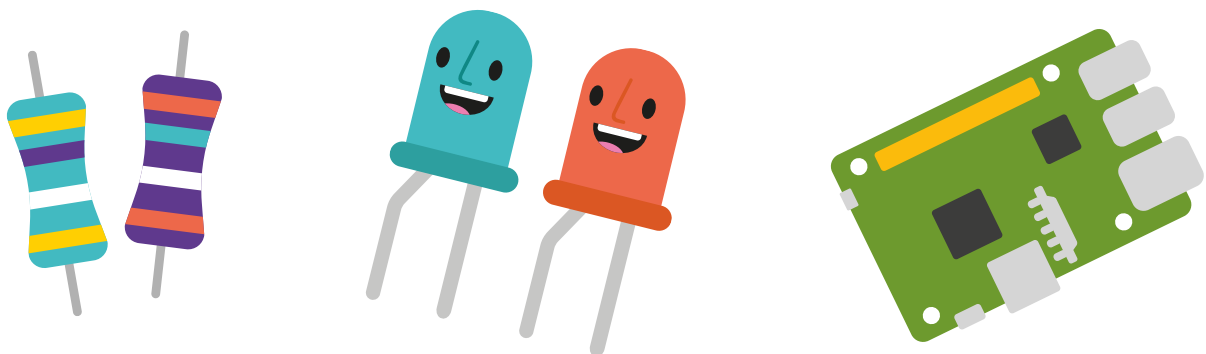
If your library requires an additional background check via your own system, this is perfectly fine.

Equipment

Do I need to provide computers at a Dojo?

It is very common practice for Dojos to ask attendees to bring their own laptops. Using their own computers has the added benefit of making it easy to save their work in between sessions if they are not using online tools to do so.

Of course, not everybody has their own laptop, so if you have some computers available, that’s great, but not having any isn’t a barrier to getting your Dojo up and running. If your library already has computers, then that is an added bonus as it allows young people to attend who otherwise wouldn’t be able to. Be sure to pre-book your library’s computers in advance of the Dojo sessions.



What kinds of equipment can be used in a Dojo?

There are many different types of computers and devices available today: laptops, tablets, iPads, Raspberry Pis, and more. If children are bringing their own equipment, you might be faced with a variety of different devices at your Dojo.

Laptop or desktop computers

Any laptop or desktop computer is generally suitable for Dojo use. Even very old laptops can be given a second life by installing Linux, thereby making them perfect learning tools for a Dojo.

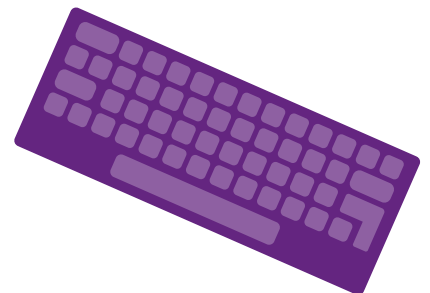
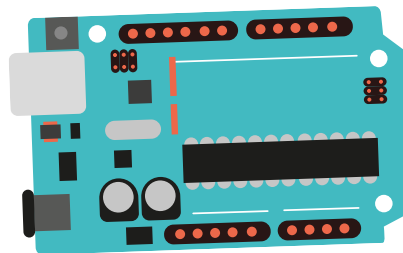
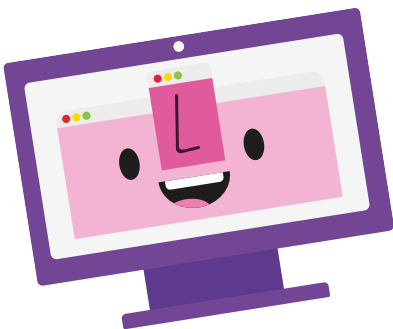
Raspberry Pi

The Raspberry Pi is just like any other computer and therefore can be used for many projects including Scratch, Python, and web development. A number of programming tools come pre-installed on Raspbian, the operating system that powers the Raspberry Pi.

The Raspberry Pi is also an excellent tool for building hardware projects, but you don't need any accessories such as LEDs and breadboards to do regular coding on it.

Tablets

Although not the ideal choice, tablets can be used in a Dojo. There is a limited number of free tablet apps, such as ScratchJr. For iPads specifically, there is also Swift Playgrounds, which lets complete beginners learn to code with Swift, the programming language created by Apple. If a keyboard and even a mouse can be connected, this may allow the tablet to be used for some online project work using more standard tools.



Sourcing equipment

If your library does not already have a number of computers available, it is often possible to acquire some equipment for your Dojo without having to make any purchases.

Donations

Many companies simply send their old computers for recycling. Therefore, it is worth getting in touch with local businesses to see if they are willing to donate old laptops and other equipment such as monitors, keyboards, and mice to your Dojo.

See [page 55 of the Champions' Handbook](#) for a template letter you can send to local companies to ask for such in-kind sponsorship. You can modify this letter to suit your specific needs. If there is a CoderDojo regional body in your region, you can also contact them to find out if it has any current partnerships with regional businesses.

Online

Websites such as freecycle.org can be a surprisingly good source of hardware peripherals needed for Raspberry Pis: monitors, mice, and keyboards. Often these items are not worth selling, but people are reluctant to throw them in the bin when they are not broken. Don't be afraid to let people know that the technology will be helping to give children new opportunities for free! On occasion, somebody getting rid of one item subsequently produced several more to give away when they heard that the items' new home was going to be a Dojo.

Raspberry Jams

The Raspberry Pi community events called Raspberry Jams can be another great place to meet people who might have spare bits of the types of hardware you need. These digital making events can be organised by anyone and are a fun activity for all ages; you might be surprised at the amount of goodwill to be found at them. Look for a Jam near you, or find out how to set one up at your library, at raspberrypi.org/jam.

Resource sharing

If you are part of a network of libraries, then chances are you already have a system for moving books between locations in place. Why not use this same system to move computers and other Dojo-related equipment around too?

Whether you are a standalone library or part of a network, another thing you could do is leverage the library's function as a lending facility and set up a CoderDojo equipment borrowing scheme. The purpose could be either to enable attendees of your Dojo to work on their projects at home in between sessions, or to share resources among Dojos if there are other Dojos in your area. In the latter case, instead of everybody needing to acquire and store their own equipment, members could loan what they need from your library and return it after each session. This would also be a great way to connect with other Dojos in your area, and indeed to encourage new ones to start up.



Case study: Rob Curran, Wilmslow Dojo

Libraries are definitely great spaces that have three key ingredients needed to get a Dojo up and running: space, power, and (often) internet connectivity. Libraries tend to be at the hub of a local community, and range from the traditional view of what a library might look like, right through to funky spiral architecture with a sense of fun and a load of noise! Regardless, libraries are also almost all blessed with power, and increasingly with good connectivity [...]. So there are three ticks in our boxes for the logistics of setting up a regular CoderDojo session where kids and parents can come along and explore what this wonderful world of coding, tinkering, and digital making is all about.

By running my Dojo and being involved with Society Chief Librarian events, I think I've identified the core fourth ingredient: passion! Libraries are staffed by incredibly enthusiastic and passionate people who are proud of the services they can offer, and who are keen to embrace the changes in our increasingly tech-powered world. [...] So here's a call to all librarians: grab a laptop, grab one of those great coding books we know you've got on your shelves, get onto CoderDojo — and get started!





Sanneke van der Meer: champion of CoderDojo Kennemerwaard, Netherlands

Librarian Sanneke took over as champion of CoderDojo Kennemerwaard, a group of five (now six) Dojos, in April 2016. The library originally received funding for a computer programming initiative and decided to start CoderDojos so they could join an existing global community.

How did you get involved?

My colleague who was in charge of the Dojo was leaving, and looking for someone to take over. Up until then, I had only visited the Dojo once; I had seen children programming with Scratch but not used it myself. For a few minutes I thought “I don’t know anything about programming,” but then I decided to jump right in!

What did you do to prepare?

My first thought was “Can I do it?” I am not a programmer. Translating Sushi Cards from English into Dutch really helped me to learn, since I naturally work through the steps myself in order to translate them. Every time we get a new robot, I get to play with it. That way I know how it works before showing it to the Ninjas.

My advice is: if you haven’t programmed before, start with Scratch.

Have you noticed any difference in the library since the Dojo started?

A lot of people knew me as a librarian and started to ask questions when they saw me with robots! The library has now started to run occasional computer sessions for adults, and this year we hope to develop this with external-party free courses for unemployed people to get into IT.

Do you have any advice for anyone thinking about starting a Dojo in their library?

It’s not scary. Just do it!



“I put a lot of time into CoderDojo, because it’s just so fun!”

About Kennemerwaard public libraries

- Kennemerwaard is the name of the group of libraries
- 14 branches
- Approx. 120 employees
- Deals with four councils, with a total of over 228 000 inhabitants across numerous cities and villages

About the Dojo

CoderDojo Kennemerwaard comprises six separate Dojos in Limmen, Castricum, Alkmaar, Heerhugowaard, and Bergen. Apart from me, there are five colleagues directly involved in our Dojo, and we have a total of 15 mentors. Some school consultants help out as well.

Between the six Dojos, there is a session every week, with 10–15 attendees on average. All Dojos run on Saturdays, except for one in the tiny village of Limmen that runs on a Wednesday afternoon. At each location, we try to have at least one library employee present in addition to four to five other mentors.

Funding

We were fortunate in having the money to buy robots and other material in the beginning. In addition, we receive money through donations:

- Members of the library can become ‘friends of the library’ and donate to one of three projects each year; this year, our CoderDojo project received the funds.
- We have a robot-shaped money box in the library where parents and children can donate directly to the Dojo if they wish. Before using this money, we ask the parents and children what they want it to be spent on.

To see more stories from Dojos in libraries, check out the videos at dojo.soy/libraryvideos



Top tips for making your Dojo sustainable

- **Build the community.** Create a place where people feel a sense of belonging and want to keep coming back.
- **Don't do it alone.** Ask somebody to be co-champion with you, or form a core team that will be in charge of running the Dojo, to share the workload.
- **Inspire Ninjas to progress and maintain their interest.** Find things that encourage them to continue learning, such as suggesting they participate in events and competitions like Coolest Projects — coolestprojects.org — or Astro Pi — astro-pi.org. Use digital badges or other methods of rewarding their achievements.
- **Value your volunteers!** This may seem obvious, but it is important to make sure they do not feel taken for granted. Let your volunteers be part of the decision making and session planning, check in regularly to see how everyone is, and thank them for sharing their time. Organising social events such as DojoCons — dojocon.coderdojo.com — or local meetups is a great way to help your mentors connect with other volunteers in the community and share experiences.
- **Plan your succession.** You may not be able to stick around forever, but the Dojo can live on if you plan it properly. If you have a thriving community and a passionate team, it will be much easier to hand over the reigns to another person that will carry on running the Dojo.



Marketing your Dojo

The simplest way to promote your Dojo is within the library itself. Advertise it on your notice boards and your calendar of upcoming events if you have one, and you could even tap into existing activities taking place in the library.

To reach a wider audience and potentially attract new people to your library, you can do a number of things.

Use existing networks

You can broaden your network, and therefore your reach, by joining various online forums and groups in your area. Aim for groups that aren't necessarily IT-related in order to connect with parents and children who might not have previously considered coding as something they want to learn.

Publicise events online

We recommend creating events for your sessions on the CoderDojo ticketing system – dojo.soy/usetickets. This will make them show up on your Dojo's listing page on the CoderDojo website. You can also use popular social media platforms such as Facebook to create event pages and make it easier for people to find your Dojo sessions. Make sure to promote your events on any social media channels that your Dojo or your library have, and ask others (e.g. your volunteers and staff) to share them as well.

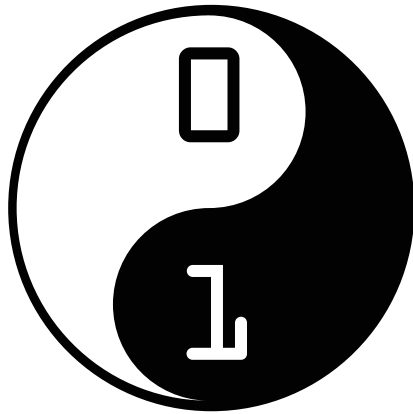
Host a promotional event

You could organise a roadshow-style event in a public place such as a shopping centre. This will give your Dojo high visibility and potentially spark interest in lots of passers-by. As well as attracting people directly, you will be able to make use of word of mouth by having something exciting or unexpected going on that people will talk about.

Find more tips on pages **18–19** of the **Champions' Handbook**. You can also find some promotional materials for your Dojo at dojo.soy/flyers







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