

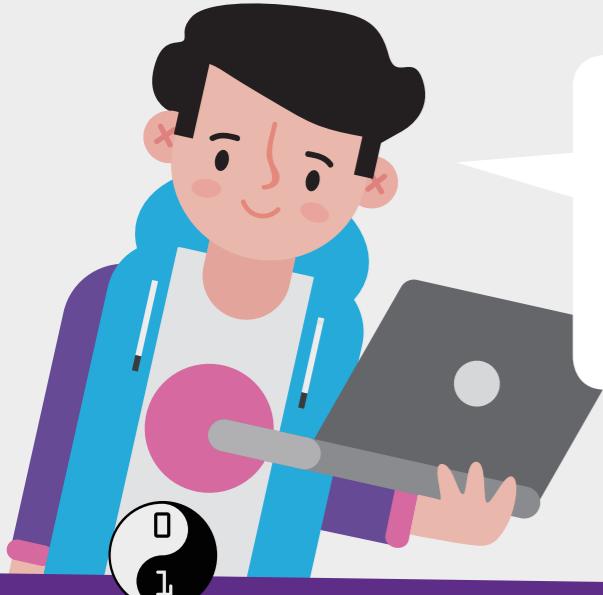
CoderDojo

# CoderDojo Champions Handbook



## Introduction to coding and Coderdojo

# What is coding?



Coding, or computer programming, is the skill of taking a problem and creating a set of instructions – which we call a computer program – for a computer to solve that problem. Computer programs can be anything from simple ones that add two numbers together, all the way up to complex websites, video games, or apps.



There are lots of good reasons to learn to code, not least of which are the economic and creative opportunities available to people with programming skills. However, CoderDojo's motivation is that digital technology has an ever-increasing role in how we live our lives, and most of us don't really understand how it works. The ability to create and design with this technology allows coders to shape the digital world rather than just living in a world built by others.

Learning how to code gives young people a new creative outlet, one which they can use to express themselves while developing their resilience, problem-solving abilities, and logical thinking skills. That's why at CoderDojo, we want every young person to have the opportunity to learn how to create with technology in fun, free, and social spaces.

**Don't force it**

Coding is great, but not everyone will love it. Just like any other hobby or skill, some young people will discover that they just don't enjoy it, and that's fine. At the same time, others may discover a lifelong passion!



# Common myths and concerns

Here are a few things you might have heard about computers or programming that really aren't true.

## Myth

You need to be a genius to program.

If I do the wrong thing, I'll break the computer.

I can't make a mistake in front of the kids!

You need to go to college to learn to code.

## Reality

Not at all! Anyone can learn to code.

Maybe...but unless you hit your computer with a bat, a techie mentor can probably fix it. Try things and learn

Seeing mentors make mistakes helps young people accept their own mistakes and understand that making them is necessary for learning.

Many great professional programmers, including CoderDojo founder James Whelton, are self-taught.

## What is CoderDojo?

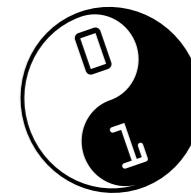
CoderDojo is a global movement of free, open, volunteer-led coding clubs (Dojos) where young people aged 7–17 (Ninjas) can explore digital technology with the support of their fellow Ninjas and volunteer mentors. CoderDojo's mission is to give young people around the world the opportunity to learn to code in a social and safe environment.



## The story of CoderDojo

The movement was founded by James Whelton and Bill Liao. James was an 18-year-old coder who was running a coding club in his school, and Bill was an entrepreneur and philanthropist who saw the positive impact James was having and wanted to expand his project. Working together, they founded CoderDojo and ran the first Dojo on 23 July 2011 in Co. Cork, Ireland.

Now, almost seven years later, CoderDojo's open-source model has helped the movement spread around the world: volunteers have set up more than 1650 Dojos in 80 countries, with new Dojos starting every day!

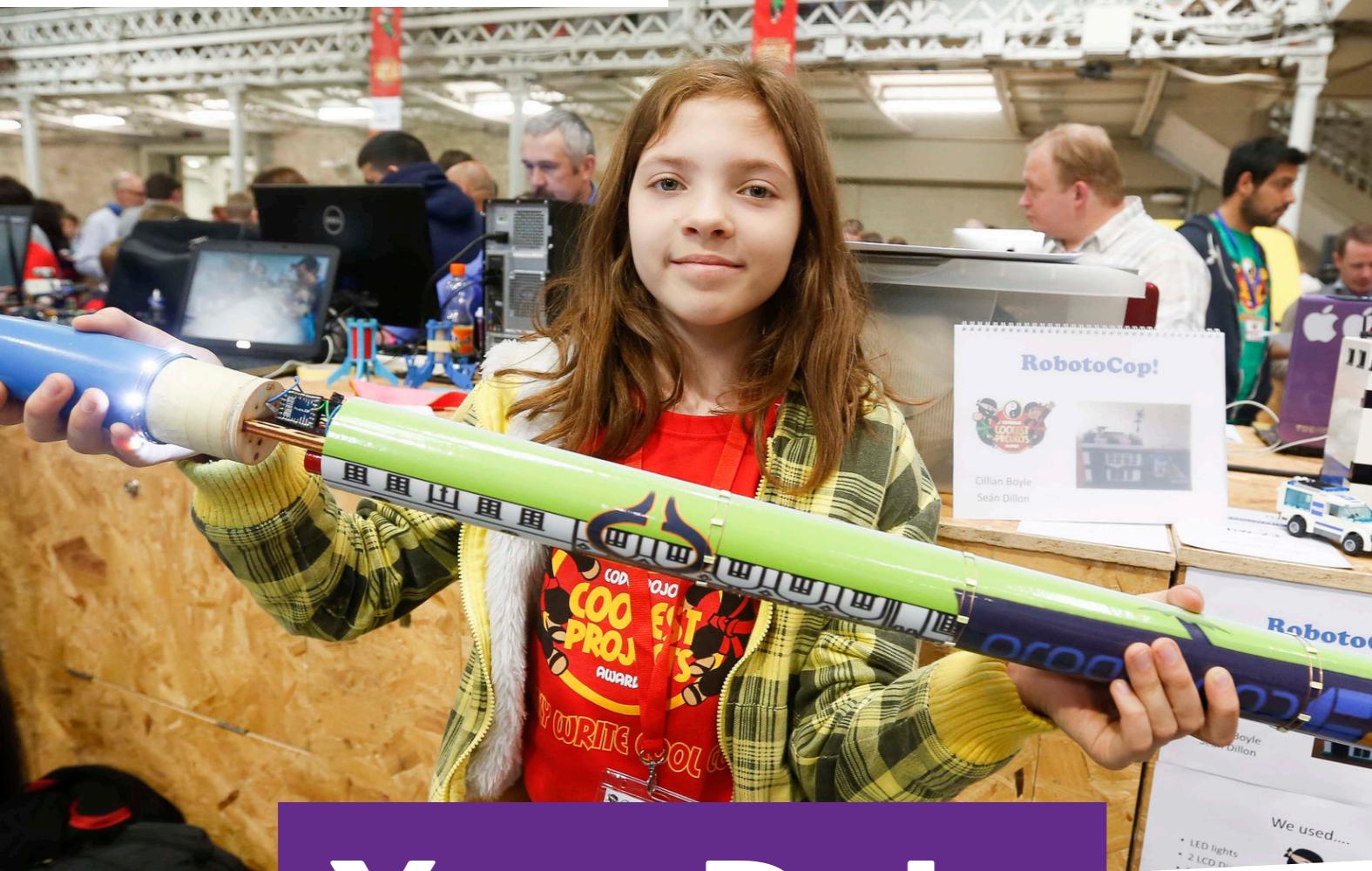


## The CoderDojo Foundation

The team at the CoderDojo Foundation supports the CoderDojo movement around the world and helps it grow. We provide tools, content, and assistance in order to connect Dojos, Dojo volunteers, and Ninjas around the world, and to make it easier to start and run Dojos. Each year we also back a number of CoderDojo community events, including DojoCon, the annual conference for volunteers, and Coolest Projects, the annual international showcase for young people's projects. To learn more about the Foundation and how we can help you set up and run a Dojo, see page [PAGE XX].



## Section 2: Your Dojo



# Your Dojo

## What happens at a Dojo

Too much structure and rigid organisation can stifle creativity. Most Dojos have a feel of organised chaos that's an energetic blend of imagination, experimentation, and learner-led skill development. At a Dojo, attendees learn by working on projects in an informal atmosphere, talking amongst themselves, and collaborating. Chatting and making friends is encouraged. mentors get involved only if the attendees can't solve a problem by using a search engine or by asking their peers.

# Members of a Dojo



## Champions

A Dojo organiser, either the original founder of the Dojo or someone who has subsequently taken on the role.

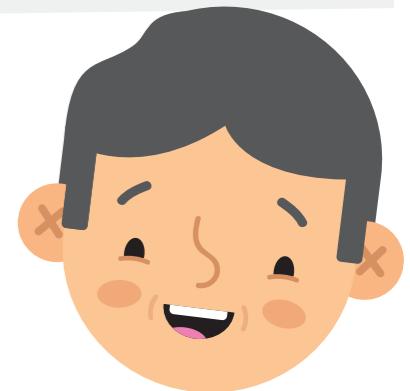
Champions make sure that everything comes together on the day so that the Dojo can run. A champion doesn't need to know how to code. They just need to have a passion for the CoderDojo mission and the drive to make things happen. Many non-technical champions have been running

successful Dojos for years!

We recommend finding a co-champion if possible, as this both shares the responsibility and ensures that someone is in a position to keep things running in case a champion has to move away or step back due to work or other reasons.

If you're reading this guide, we're hoping you'll join over 2000 past and present champions around the world to help young people in your community learn to code!

## Mentors

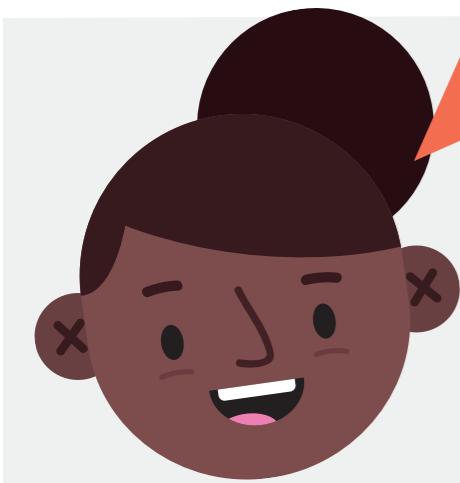


Volunteers who provide support, guidance, and encouragement to the Ninjas in completing their projects and developing their skills. Many mentors do not have technical skills, but that doesn't stop

them having a huge impact on the Ninjas at their Dojo. Anyone who is passionate about technology and shares the CoderDojo spirit can be a mentor.

The role of a mentor is not the same as that of a teacher or lecturer. Mentors help Ninjas work through problems and encourage their efforts rather than directly delivering solutions. Dojos benefit greatly from the generosity of these individuals who foster the learning of young digital creators and explorers.





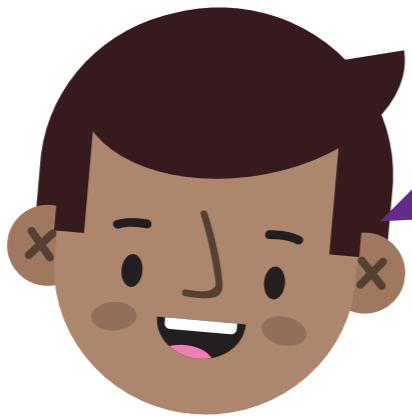
## Other volunteers

People helping out with the Dojo without taking on a champion or mentor role.

Champions and mentors are volunteers, and so are people who support the Dojo by helping out with ticketing, setting up Dojo sessions or tidying up afterwards, running social media, or anything else needed to make the Dojo happen!

Young people aged 7–17 attending the Dojo.

**Ninjas are the reason  
we run CoderDojos!**



## Ninjas



## Youth Mentors

Ninjas who are also mentors!

Once a Ninja has gained some experience at the Dojo, they should be encouraged to become youth mentors and pass their knowledge on to less experienced Ninjas. This can be one of the best ways to learn, as explaining something can help you improve your own understanding of it. This gives the youth mentor a fantastic opportunity to grow and develop while acting as a peer role model other attendees can look up to.



## Parents and guardians



Most Dojos either encourage or require parents or guardians to stay for the Dojo session rather than only dropping their children off and picking them up.

This is particularly true for parents or guardians of younger Ninjas, i.e. those under 13. Parents and guardians can be extremely helpful in case Ninjas forget a password or need an email address or website account as part of a project.

Since they're often at the Dojo anyway, parents and guardians are a great source of potential volunteers, mentors, and champions. As CoderDojo co-founder Bill Liao says,

**“CoderDojo is free, but it’s not a free ride!”**





# Starting a Dojo

## Register as a champion

The first thing you should do if you are thinking about starting a Dojo is to register your Dojo on the CoderDojo website so that our team at the CoderDojo Foundation can help you get set up. There are two steps to registering:

- Create a personal account on the CoderDojo website. Note that this is an account for you, not your Dojo. That means you should use your personal email address and your name. You can find out how to register an account at [LINK].
- Register your Dojo on the CoderDojo website. Don't worry if you don't have all the details for your Dojo yet! The point of registering early on is that we at the Foundation can then guide you and answer any questions you might have while you're getting started. Once your Dojo is registered, people looking for Dojos in your area can find yours, and you can set up additional tools like ticketing if/when required. You can find out how to register a Dojo at [LINK].

Once you've completed the registration, we will review your information, and you will either receive an approval or a follow-up email from the Foundation team within a few days. If there are any issues, we will help you work through them.

## Find a venue

Your Dojo needs somewhere to take place! Most Dojo champions successfully locate venues that meet the Dojo's needs and that the owners are willing to offer for free.

## Example venues

These are a few of the venues Dojos run in:

- |                         |                    |                     |
|-------------------------|--------------------|---------------------|
| ● Buses                 | ● Canteens         | ● Community centres |
| ● Conference centres    | ● Fields/festivals | ● Hotels            |
| ● Libraries             | ● Local businesses | ● Makerspaces       |
| ● Schools               | ● Shopping centres | ● Technology hubs   |
| ● Universities/colleges | ● Youth Clubs      |                     |

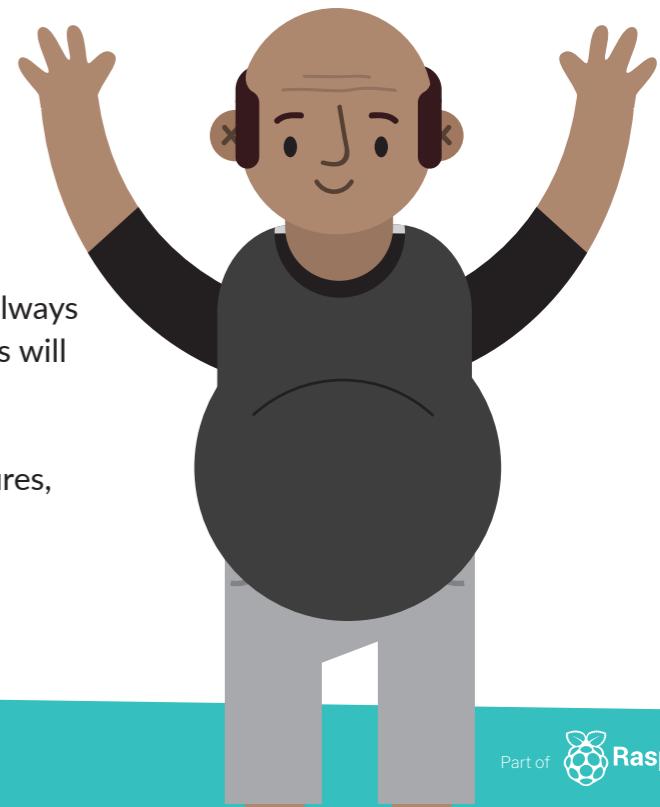
## Venue requirements

A venue for your Dojo needs to include a few things to be suitable, and there are a few other things that are optional but useful. Note that a Dojo cannot be run in a private residence.

## What your venue needs

- Tables and chairs for attendees.
- Power sockets for laptops.
- Suitable insurance coverage (e.g. public liability). You should always check, but many potential venues will already have this.

Suitable health and safety measures, including fire exits.



## What's nice to have at your venue

- **Internet access.** While it makes running the Dojo easier, many Dojos manage without it by using printed resources and distributing necessary files on USB flash drives.
- **Computers.** While you usually need computers at your Dojo, it's very common for Dojos to ask Ninjas to bring their own. However, if your Dojo has some computers, you can offer the CoderDojo experience to young people who do not have access to a portable computer.

## Possible venue costs

Wherever possible, you should try to secure a venue at no cost, as this means you won't have to worry about fundraising to cover such expenses. If you cannot secure a free venue, or the venue requires additional payments for security, public liability insurance, etc., you will need to find some way to cover those costs for your Dojo. You can find suggestions and tips on how to do so on [PAGE XX]. **Remember, it violates the CoderDojo ethos and charter to charge people to attend a Dojo.**

## Build your team

Running a Dojo alone is possible, but it's a lot of work! Having support is great, and how many other volunteers you need will depend on the size of your Dojo. Your top priority is finding mentors to help you support the Ninjas in their learning, but you should also be on the lookout for other volunteers who can help out with things like running the Dojo's social media, or dealing with the venue manager/owner. Ideally, you should also look for a co-champion.

## Volunteer recruitment materials

Feel free to make use of the volunteer recruitment letter (see page [PAGE XX]) and flyer (see page [PAGE XX]) included in this handbook.



## Finding mentors

Mentors do not need technical skills, as they can make use of educational content (see page [PAGE XX]) both to choose topics for the Dojo and to develop their own skills. However, it is helpful to have at least one technically skilled mentor at your Dojo.

### Where to find mentors

- Business centres
- Offices of technology companies
- Secondary or high schools
- Youth service organisations
- Community centres
- Public libraries
- Universities and colleges



## Why be a mentor at a Dojo?

You may need something of a recruitment pitch for prospective mentors. You can explain to them how mentoring at a Dojo can be a very rewarding experience, giving mentors the opportunity to help the young people in their community and to learn more, not only about themselves, but also about technology. Even if they are already experienced programmers, the Dojo environment can give mentors an excellent opportunity to explore different aspects of their tools, or learn entirely new ones!

If they have concerns about working with young people, there's an entire section of this handbook (see page [PAGE XX]) full of tips and advice that you can share with them!

Volunteering is not only a great way to give back, but it also looks good on résumés and CVs. Pointing this out can be particularly effective when recruiting students, as they will be eager to gain experience and build their networks.



## Turning parents into volunteers

Parents, guardians, or other adults associated with your Dojo's Ninjas represent an excellent source of prospective volunteers. If your Dojo follows the common practice of encouraging or even requiring parents or guardians of Ninjas to stay at the Dojo, then you're already halfway there!

It's quite likely that they have some skills that could be of use at a Dojo, even if they don't know it. If they have technical skills, that's excellent, but a lot of other skills can be useful at a Dojo:

### Surprisingly useful skill

Public speaking

Sewing

Music

Electrics/electronics

Art

Woodwork/metalwork/  
general crafts

### In-Dojo use

Helping Ninjas with end-of-Dojo presentations, or preparing for events like Coolest Projects (see page [PAGE XX])

Helping Ninjas with wearable technology projects, which often require sewing conductive thread into clothes

Helping Ninjas with a musical coding project, e.g. using Sonic Pi or Scratch

Helping Ninjas design or build hardware projects

Helping Ninjas design graphics, logos, etc. for their projects, or even entire websites

Helping Ninjas turn hardware projects from a jumble of wires and electronics into something that looks awesome (and is maybe a bit harder to break!)

## Using waiting lists to recruit volunteers

Dojos often become oversubscribed if there are more interested Ninjas in the local area than the Dojo can accommodate. When this happens, many Dojos introduce a waiting list policy: Ninjas join the Dojo as places become available, and Dojo tickets are only available to current Dojo members. Some Dojos that follow this policy have used it as a recruitment incentive: if an adult associated with a young person on the waiting list starts volunteering at the Dojo, then the young person can attend the Dojo regardless of their position on the waiting list.

## Plan your first Dojo

Once all the pieces are lined up, you need to plan your first Dojo! You should follow the outline of a sample Dojo session on page [PAGE XX]. Pay particular attention to the section on Dojos with lots of new Ninjas – since this will be your first Dojo, you'll probably have a few of those.

## Promote your Dojo

Once you know where and when your Dojo will be happening, you can start promoting it in your local community to find young people who want to be Ninjas. The following are a few of the most common promotional measures you may want to take.

## Keep your CoderDojo page up to date

When you register your Dojo on the CoderDojo website, a listing page will be created where you can share the Dojo's location, its current status (planning, open, full, etc.), details of upcoming events, and links to its social media accounts if you set up some. The listing page is usually the first place people will land when they find out about your Dojo, so be sure to keep it up to date!



## Be active on social media

Most Dojo champions set up accounts on the social networks popular in their area, for example Twitter or Facebook, to help members of their community keep up to date with the latest news related to their Dojo, and to share achievements of the Dojo and their Ninjas. Social networks can be a great way for prospective volunteers, Ninjas, and Ninjas' parents to become aware of your Dojo.

## Using pictures of your Ninjas

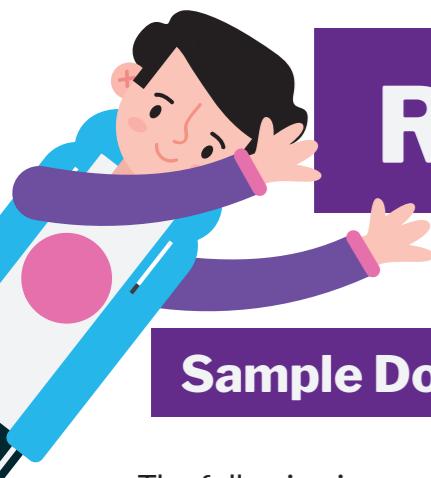
When promoting your Dojo, you may wish to use pictures of Ninjas participating in Dojo events. In most countries, you will require parental permission to do so. You must verify the requirements under local law and ensure that you meet them, for example by having parents fill in a waiver form.

## Attracting young people to your Dojo

When you're starting off, you will most likely have to actively promote your Dojo in order to attract young people to it. It's perfectly normal to start with only a handful of Ninjas and grow from there. The best way to do so is to reach out to existing groups and networks. You could consider contacting:

- Schools
- Youth centres
- Youth groups (e.g. local sports teams, Scouts/Guides, etc.)
- Parents groups
- Large organisations where many parents work

To help with this, you may wish to make use of the letters (see page [PAGE XX]) and flyers (see page [PAGE XX]) included in this handbook.



# Running a Dojo

## Sample Dojo session schedule

The following is an example schedule for a Dojo. It assumes a two-hour Dojo session, as most Dojos run for one and a half to two hours. Obviously, if yours is shorter or longer, adjust the timing or cut things as needed.

## Setup – 30 minutes before the Dojo

The champion(s) and other volunteers arrive at the venue and set up the space, including any equipment that might be required for the Dojo's planned activities. If your Dojo is not easy to locate — maybe it's inside an office building, or through one of several entrances — consider putting up signs, a poster, or a banner!

This is also a good time to review what you're planning to cover at the Dojo (see [PAGE XX] for details on how to pick topics).

## Dojo layout



If possible, you should set up your Dojo's space so Ninjas have the opportunity to collaborate and talk to one another. Depending on the kind of space you have available, you may want to divide the Dojo so that Ninjas who will be working on similar projects can work in the same area. The key thing is to avoid having a Dojo look or feel too much like a standard school classroom — even if it's taking place in one!



## Arrivals – 15 minutes before the Dojo starts

Ninjas will start arriving around now. Have one or more volunteers greeting them and helping them check in, find power, connect to the WiFi network, etc. You may want to consider:

- Issuing Ninjas and volunteers with name tags/stickers as they arrive
- Using different symbols on the name tags, or particular colours of lanyard or similar, to indicate things such as whether a Ninja's parent has given permission for them to appear in the Dojo's social media photos and videos, or whether the Ninja is a youth mentor

## Welcome – 5 minutes



Introduce yourself and the mentors to any new Ninjas. If your Dojo will be doing multiple activities (for example one group working with Scratch, another group using HTML), explain these and ask Ninjas to seat themselves accordingly. Depending on the space you have, this might be a matter of going to different tables, different parts of a room, or different rooms entirely.

## Icebreakers – 5–15 minutes

Ninjas at your Dojo may not know each other, or some may have formed friendly groups therefore don't interact much with Ninjas not within the group. To both introduce new Ninjas to other Dojo attendees and to create opportunities for Ninjas to interact with one another, we recommend running icebreaker activities whenever you have several new Ninjas at a session, and every so often even with established Ninjas.

These activities are usually games that cause the Ninjas and mentors in the Dojo to interact and, usually, to learn something about one another. This could just be another Ninja's name, or it could be their hobbies, pets, favourite music, etc.

It is not unusual for older ninjas (13 years or older) to sit out the icebreaker game. Alternatively, can you group teenagers together and encourage them to find out something interesting about each other.

Find some ideas for icebreaker games on [APPENDIX PAGE XX].

## Ask three, then me!

At CoderDojo we encourage established Ninjas to rely on themselves and their peers, rather than just on the mentors, for help with their projects. The "Ask three, then me" principle states that when a Ninja encounters a problem, they should first try to solve it by themselves, then look for a solution on the internet, then turn to another Ninja for assistance, before finally asking a mentor's help if necessary. This encourages peer-to-peer learning and the development of independent problem-solving skills.



## Make something cool with code – 30–90 minutes

Ninjas work with the support of mentors to produce something with code. This can be a project from the CoderDojo resources site (see [PAGE XX] for details), an online coding tutorial (see [PAGE XX] for a list of suggestions), or it can be something the Ninjas, with guidance from their mentors, have imagined and now want to create.

Ninjas can work together in groups or alone, depending on the nature of their project and their preferences. They should be encouraged to keep in mind CoderDojo's principle of 'Ask three, then me' and to help each other solve problems.

If a Ninja, or a group of Ninjas, is trying to plan a new project of their own design, they can make use of the CoderDojo design worksheet, which you can find at [LINK].



## Showcase your work – 10–20 minutes

If they wish, Ninjas can take the opportunity to demonstrate to the Dojo what they've created on the day or over the last few sessions. They can do this however they think is best, e.g. by coming up to the front of the room and demoing their project on-screen, standing up and talking about what they did and why, or gathering everyone around to watch a robot drive across the floor! Letting Ninjas showcase their creations serves to recognize their achievements and promote their confidence, it helps them develop their presentations skills, and it offers the other Ninjas the chance to learn and be inspired.

## Wrap up – 5 minutes

Thank everyone for attending, and remind them that they can keep coding at home between now and the next Dojo. If the next Dojo is already scheduled, tell attendees when that will take place and, if you're using ticketing, remind them to watch out for the ticket release so they can book theirs. Then Ninjas and parents leave.

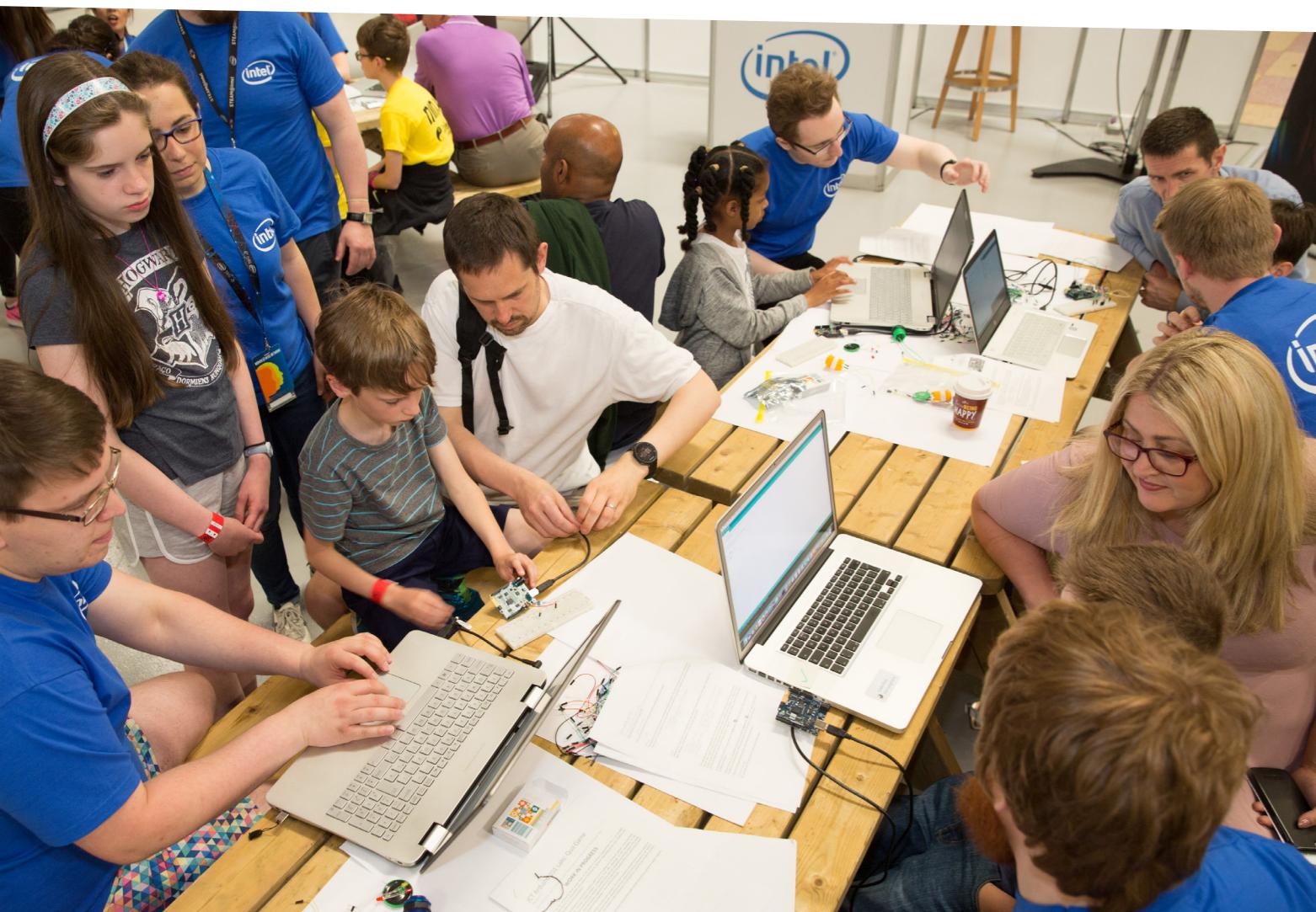


## Scheduling considerations for Dojos with lots of new Ninjas

If you expect a lot of new Ninjas at your Dojo, make sure to account for this in your planning! You'll need more time to welcome them, get them set up, and potentially troubleshoot issues with their computers. You should take time to introduce the concepts of CoderDojo and principles like "One rule: be cool!" (see page [PAGE XX]). To introduce the Ninjas to one another, you should also consider running ice breaker activities even if you normally don't.

## Using educational resources in your Dojo

In order to reduce the effort for yourself and your mentors, you should make use of educational resources at your Dojo. There are lots of websites where you can find such resources, and we've collected an appendix of them on [PAGE XX]. Moreover, the CoderDojo community and the CoderDojo Foundation produce freely available educational resources that are specifically designed for use in a Dojo.



## CoderDojo educational resources

You can find a collection of educational resources for a variety of programming languages and hardware projects on the CoderDojo resources site at [coderdojo.com/resources](http://coderdojo.com/resources). There are materials created by both our team at the Foundation and by the CoderDojo community on subjects including:

- **Scratch** — A simple graphical programming language that is an excellent first language for beginners, covering many of the key principles of programming.
- **HTML/CSS** — The core languages used to build webpages. This collection of resources assumes no prior knowledge and guides Ninjas from the basics through to building a relatively sophisticated website.
- **Python** — A popular and easy to learn text-based programming language used by professional coders for everything from websites to data science.
- **JavaScript** — This language is one of the most useful in the world and has a fast-growing user community. It's the key language for making interactive websites and a good topic for Ninjas who have experience with both Scratch and HTML/CSS.
- **App Inventor** — Another graphical tool, which Ninjas can use to build apps for Android devices.
- **Wearables** — Ninjas can learn to create pieces of wearable technology and write code to control them.
- **Unity** — A professional-level games development tool capable of creating detailed 3D games using pre-made models and textures. It is not suitable for beginners, but Ninjas who are familiar with some Python or JavaScript would be able to progress to it.

## Sharing resources

If you decide to create original material for use at your Dojo, or if you find a great tool or resource that we haven't listed in the appendix, please share it with the wider community by messaging the CoderDojo Foundation's content team at [content@coderdojo.org](mailto:content@coderdojo.org).



## Rewarding achievements



### CoderDojo badges

We create and maintain a collection of digital achievement badges (see page [PAGE XX] for a list). There are specific requirements for each badge, and when a mentor judges that a Ninja has fulfilled these, they can award them with the badge

via the CoderDojo website (instructions on how to do this are at [LINK]) and it will appear on the Ninja's profile.

Some Dojos also choose to turn the images of the badges (available at [LINK]) into pins or stickers for laptops to give Ninjas physical tokens of their achievements.



## Planning your Dojo's year



What follows are a number of things you may wish to consider when planning your Dojo for the year. You can also find a number of pre-planned topic progressions to use or modify as needed on page [PAGE XX].



## Ticketing

It is best practice to use ticketing for your Dojo. There are a variety of reasons you may wish to do so:

- Keeping track of who is coming to your Dojo and how often
- Limiting overall capacity of the Dojo due to physical space or mentor numbers
- Monitoring capacity of a specific "stream" of your Dojo e.g. Scratch, hardware, etc.



Marking a Ninja's achievement of a new level of technical skill can serve as both recognition and motivation for other participants. One way in which many CoderDojos do this is by awarding badges. Other Dojos use things like certificates, wristbands ("belts"), or other markers of achievement.

Different Dojos have found different solutions to this, however, the CoderDojo Foundation has created a ticketing system specifically for the needs of Dojos. It also has the advantage of sharing the same account as the CoderDojo digital badge system and community forums. By using it you will help the Foundation understand the needs of the CoderDojo movement as a whole, as it shows us patterns in Dojo attendance. You can find out how to use our ticketing system at [LINK].

If your Dojo is regularly over-subscribed, you could consider issuing tickets for a specific period, so that Ninjas can commit their time to the Dojo with confidence. Another alternative is to only allow new Ninjas to acquire tickets when established ones stop attending. If you choose this option, you may also wish to create a waiting list.

## Waiting lists

Some Dojos are so popular that they find the need to create a waiting list for Ninjas who want to join. Usually operating on a first come, first served basis, these lists can alleviate the pressure of Ninjas and their parents/guardians contacting you regularly about events. If you maintain the waiting list and contact people as openings become available, you can give a satisfying answer to interested attendees. Furthermore, as noted earlier (see page [PAGE XX]), allowing exceptions to the first come, first served policy for Ninjas who come with a volunteer can provide a strong incentive for parents/guardians to volunteer at your Dojo.



## Certificates

Many Dojos like to give Ninjas certificates in place of or in addition to badges, as these give the Ninjas something they can hold and show to friends and relatives. On page [PAGE XX], you can find a template to print out and fill in, and there is a digital version you can download and modify at [LINK].

## Topics for your Dojo

Depending on the interests and skills of your technical mentors and your more experienced Ninjas, you need to decide what topics you're going to cover. A topic can be something as specific as 'the Scratch Sushi Cards' or as broad as 'a space where kids can work on their own self-directed projects'.

If your Dojo is brand new, then it's worth considering starting with some of the 'classic' CoderDojo topics, as the community will have lots of experience and advice for you. However, if your technical mentors have particular areas of expertise they're enthusiastic and confident about delivering in the CoderDojo format, then definitely give these a shot! That said, what follows is a short overview of the top three starting points for a new Dojo. For all of these languages, the CoderDojo Foundation provides educational resources to get you started (see page [PAGE XX]), and there are numerous other projects and tutorials available throughout the web (see page [PAGE XX]).

## Scratch

Scratch is a visual block-based programming language created by MIT. It's excellent for beginners, as most of the options are on the screen in front of them and they can just dive in with little mentor support. If you do not have mentors with a technical background, this is the place to start.

### Pros

- Quick and impressive graphical results
- Block-based coding avoids typos and many errors
- Wide array of programming concepts covered
- Easy to pick up for mentors with no coding experience

- Scratch limits coders in ways most other languages do not
- Ninjas will need to progress to a text-based language eventually

### Examples

You can see some example Scratch projects at [LINK].

### Cons

## Web development

HTML and CSS provide the core of the visual layout of the web. They also offer a natural progression into JavaScript, which is a full-fledged programming language for making websites interactive. A non-technical mentor can pick up HTML/CSS by following tutorials and CoderDojo educational materials.

### Pros

- Used by professional web developers to build websites
- Quick, cool-looking graphical results
- Using HTML/CSS and JavaScript, you can build almost anything website-related

- A bit of a learning curve due to two (or up to three) separate languages and several files for even a small project

### Examples

You can see some example web development projects at [LINK].

### Cons

## Python

Python is an easy to read, versatile, and powerful programming language that is popular in fields like web development, hardware hacking, and data science. It is a fitting next step up from Scratch, and for older Ninjas it's itself a good starting point

### Pros

- Often looking similar to plain English
- Has many built-in features which make writing scripts quicker
- Teaches good habits of code layout that are transferable to other languages

### Cons

- Can be used online (e.g. via Trinket [trinket.io](https://trinket.io) or Repl.it [repl.it](https://repl.it)), but eventually learners need to move to using it offline with tools like the command prompt or terminal
- Many beginner-level programs will be text-only, as a few basics need to be understood before graphical interfaces can be introduced

### Examples

You can see some example Scratch projects at [LINK].



## Special events

You should consider organising or participating in some special events with your Dojo too. Being involved in events like Coolest Projects (see page [PAGE XX]) can give the Ninjas a fantastic opportunity to meet other young coders whose projects they can learn from and be inspired by, and to build their confidence by sharing their own projects. If there aren't such events in your area, you could join up with other nearby Dojos to do a project together, or hold your own project showcase!



## Guest speakers

A good idea to add some variety to your Dojo can be to invite in a guest speaker from a nearby company, educational institution, maker space, etc. They can show off some cool stuff, talk about how they made it, and generally give Ninjas an idea of where their tech skills could take them in future. When inviting adult guests into your Dojo, keep in mind that you need to make sure you're complying with local regulations around child safeguarding.

## Keep getting better

Once you've got your Dojo running and you've had a few sessions, take time to collect feedback from your Ninjas, volunteers, and parents/guardians. Find out what's working, what's not, and what you might want to change. As well as doing this regularly, keep in touch with the community (see page [PAGE XX]) to share what you learn in your Dojo and learn from others.



# Fundraising for your Dojo



## Can a Dojo fundraise?

Yes. The CoderDojo charter allows fundraising either by a single Dojo or a group of Dojos as long as they are clearly identified as such (e.g. 'CoderDojo Long Beach' or 'Dojos of California'). You are not allowed to fundraise simply as 'CoderDojo'. Inappropriate fundraising violates the CoderDojo charter.

## Should a Dojo Fundraise?

Sometime Dojos encounter costs and cannot find sponsorship to cover them. Examples might include T-shirts for the Ninjas, insurance for the Dojo, or youth work training (e.g. child safeguarding) for volunteers. It is preferable for Dojos to make an effort to operate without sponsorship. If Dojo-related costs do arise, try to find a supporter (such as a local business) that will cover the cost or purchase the supplies on the Dojo's behalf. Be aware that Dojos that accept cash donations must follow all applicable local regulations, which can create extra work for you.

## Can we ask parents/guardians for donations?

While **attending the Dojo must always be absolutely free** and no special privileges can be awarded to Ninjas as a result of donations, it is permissible to ask parents/guardians for donations. However, this must be done in such a fashion that those who are unable to donate do not feel excluded. A good way to achieve this is a general announcement about the purpose of the fundraising together with the location of a donation box near the entrance of the Dojo. Then parents/guardians are free to donate or not, in their own time and without any pressure. It is not acceptable to give every Ninja an envelope to pass on to their parents/guardians, or to put a donation box in the room in front of everyone.



## Fundraising suggestions

Many Dojos have found success seeking sponsorship from local businesses, governments, etc. We strongly encourage you to try this route before investigating direct fundraising, and we have produced some template letters you can use to reach out to prospective sponsors (see page [PAGE XX]).

### Dojo wish list

So that people who want to help the Dojo out but don't want to directly donate money can lend support, it is a good idea to create a wish list of things the Dojo needs (e.g. on a website like Amazon). Then donors can choose to purchase something on behalf of the club.

### Grants

Some dojos have secured funding from local governments, educational bodies, tech initiatives, etc.. You should determine whether any such funding is available in your area and whether your Dojo is eligible to apply for it. You can find a template letter to a government sponsor on page [PAGE XX].

### Corporate Sponsorship

There are also Dojos that have been able to secure either funding or direct donations of products/services from corporate sponsors. This could be anything from the cost of insurance or a software package all the way up to a number of old computers! You can find a template letter to a corporate sponsor on page [PAGE XX].

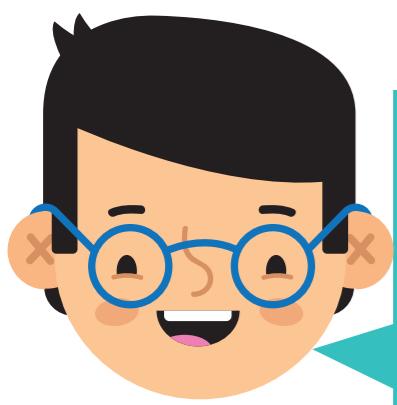


## Section 3: Working with young people



### Working with young people

This section contains some general advice for working with young people. You must ensure that you have investigated the requirements and laws regarding adults working with young people in your area and that you are fully compliant with them. Every adult who intends to regularly volunteer with CoderDojo should complete the e-learning module Safeguarding young people in CoderDojo, available at [LINK].



#### One rule: be cool!

This is the oldest of CoderDojo's principles and should be introduced to all Dojo attendees. In short, it means that we should behave well towards each other.

**"Helping, sharing, supporting, encouraging, cooperating, and being kind are all very cool. Bullying, lying, time-wasting, and disrupting the Dojo are all considered uncool!"**

— CoderDojo co-founder Bill Liao



CoderDojo

### Dos and dont's of working with young people

The following is a list of some key points from the CoderDojo child safeguarding policy you should keep in mind. It would also be useful to look over this list before your first CoderDojo event and whenever you or your volunteers need a refresher.

#### Do

- Do provide a safe secure environment for the young people attending the Dojo.
- Do ensure that there is always at least one adult per ten young people (1:10, adults: young people) at every CoderDojo activity.
- Do treat all young people as individuals, equally, and with respect, regardless of their gender, age, religion, socioeconomic background, or ethnicity.
- Do involve Dojo attendees in decision making where appropriate.
- Do offer constructive, age-appropriate encouragement, praise, and criticism.
- Do use material appropriate to the age and wishes of the group.
- Do have fun and encourage a positive and collaborative atmosphere.
- Do be aware of what is appropriate physical contact and engage in this contact only.
- Do respect the personal boundaries of others.
- Do discuss any uncertainties you have around child safeguarding with the Dojo champion or another adult volunteer.
- Do discuss discipline procedures with the Dojo beforehand, and be familiar with their policy.
- Do copy in parents on all email communication with any young person under 18 years.

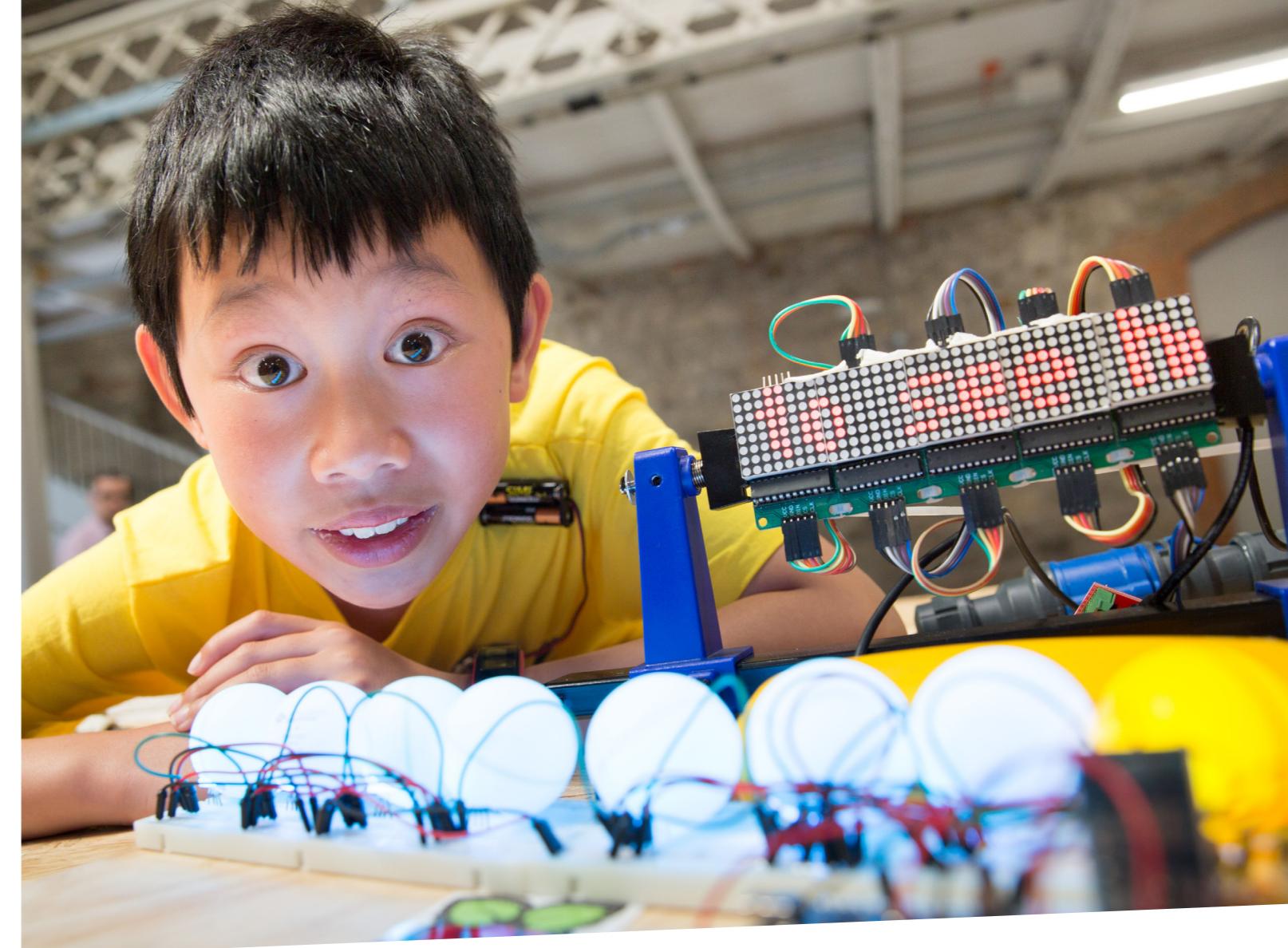


## Don't

- Don't spend time alone with children. If meeting with children individually, do so as openly as possible, leave the door open, and inform another responsible adult of the meeting.
- Don't use offensive or sexually suggestive physical or verbal language, and don't allow its use to go unchallenged.
- Don't single out any child for unfair favouritism, criticism, ridicule, or unwelcome focus of attention.
- Don't allow or engage in inappropriate touching of any form. However, there may be unavoidable occasions when physical contact is necessary, e.g. to provide comfort or reassurance to a distressed child. In all cases, physical contact should only take place with the consent of the child.
- Don't physically punish children or young people.
- Don't directly connect with Ninjas via social media. Only if appropriate should you engage with Ninjas in a group environment via social media.
- Don't engage in one-to-one online communication with young people under 18, instead always include a parent or guardian in the exchange.
- Don't socialise inappropriately with children or young people outside of structured official Dojo activities.
- Don't take children to your home.
- Don't take children alone on car journeys. If this is unavoidable, do so only with the full consent and knowledge of their parents/guardians and someone in the organisation.
- Don't do things of a personal nature for children that they can do for themselves.
- Don't allow allegations a child makes go without being recorded and addressed.

## Show you're still learning too

It helps Ninjas to see that you're still learning as well. If you can code already, they'll see what they might achieve, while also realising that there is no all-knowing, 'finished' expert. If you're a non-technical mentor, you can work through projects with the Ninjas and solve problems as a team!



## How to do this

- Let the Ninjas see that when you realise you don't know something, you react with curiosity and enthusiasm about learning, rather than with frustration.
- Try things, even if you're not sure they'll work.
- If you in fact always have the right answer, consider occasionally making a deliberate mistake so they can see how you go about identifying and correcting it.
- If you have a technology-related side project in progress, bring it to the Dojo and do a quick showcase, just like the Ninjas do at the end of a Dojo!

## Quality connection trumps expertise

While technical skills are helpful, forming a great connection with the Ninjas will help you have a far greater impact than any cool bit of code could. It will make your feedback more important to them and your encouragement more valued by them.

### How to do this

- Introduce yourself to new Ninjas by name. Have a conversation with them. Learn a little about them and what they're interested in. Really listen to them and engage with them. Their interests may lead to some awesome projects in time!
- When working with a Ninja on their project, don't stand over them. Get on their level by sitting next to them or crouching down.
- Be yourself, and share relevant and appropriate information about yourself in conversation.
- Be visibly interested in and enthused by the progress Ninjas make in their projects and skills.
- Keep coming back! Reliability will help you build up trust with the Ninjas.

### Try not to touch the keyboard!

**It's tempting to show Ninjas how to solve a problem, to reach over and just type the solution in for them. Resist! Helping them find the answer to the problem by asking leading questions will benefit them much more in the long term. If they aren't finding it and they're getting frustrated, you can tell them what the solution is. However, they should still type in the necessary code themselves!**



## Section 4: The CoderDojo movement



### The CoderDojo movement



#### The CoderDojo ethos

This section discusses the CoderDojo ethos – our approach to how we work together in a Dojo and in our community, and how we aim to impact the world.



#### Collaboration and teamwork

Different people have different strengths, and learning from each other is one of the great benefits of working in groups. We recommend encouraging Ninjas to self-organise into teams. This can help them to better understand their individual strengths, and to learn how to work with others and assist their peers.

An easy way to encourage this is to ensure that occasionally there are two/three Ninjas working at the same computer, taking turns at the keyboard.

#### Working in mixed groups

Teams do not have to be of the same age group or ability – mix it up and give everyone a chance to learn and grow with group collaboration! All Ninjas will have the opportunity to develop leadership skills and to help less experienced Ninjas at the Dojo. Ninjas are encouraged to make friends, and to become role models and mentors in their Dojo as their coding skills improve.

#### Gender

Diversity within teams is a well-known catalyst for innovative thinking and creativity. If possible, try to ensure that Ninja groups are not restricted to one gender, so that young people of different genders can work together. Encouraging Dojo attendees to work in mixed groups is a great way to promote diversity and inclusion.

CoderDojo volunteers around the world make a special effort to ensure that girls and young women have the opportunity to learn to create with technology. Encouraging girls to become youth mentors is very helpful for engaging more girls at your Dojo.

You can find out more about how to engage girls in the CoderDojo Empowering the Future guide available at [LINK].

#### Work with the CoderDojo community

Dojos should consider the possibility of establishing teams across Dojos and across geographic borders. Not only does this introduce borderless sharing and virtual learning, it also increases diversity within teams and emphasises the global nature of community.

# Changemakers

## Technology and coding as tools for positive change

Ninjas are encouraged to work on themes and projects that are of direct interest to them. Many young people are highly motivated by projects focused on protecting the environment, sharing knowledge, solving a social problem, supporting a community, and themes around physical and mental wellbeing. Consider introducing projects that have a positive social, environmental, or community impact to help Ninjas identify opportunities to positively influence the world around them.

## Empowering young people

In Dojos all across the world, Ninjas are being empowered with life skills that will help them succeed. As well as learning about teamwork and collaboration, Ninjas are encouraged to present their projects and support their peers to develop their communication skills. Ninjas build confidence and learn to trust in their own voices by directing their own learning and taking on the responsibility of peer-to-peer mentoring.

## CoderDojo is informal and fun

## Empowering young people

The atmosphere in a Dojo is fun and social, and Ninjas have the opportunity to chat and work together. Try to avoid having mentors give instructions at the front of the room with Ninjas sitting in lines and listening. Champions and mentors should try and encourage friendships

to form in their Dojo by pairing like-minded Ninjas and facilitating conversations between all young people.

CoderDojo clubs take place regularly, which enables frequent opportunities for skill development and socialisation, both of which are of great benefit to Ninjas. Not all young people will choose to attend every Dojo session. Some come once, some every once in a while, others become regulars. Young people are welcome to attend whenever they want to, although they are encouraged to come regularly.

All of the roles at a Dojo are relevant, and interaction between people in all roles is important. mentors, champions, and Ninjas are all in it together, and should support each other; everyone should have a voice, and everyone should be respected.

Ninjas are at the centre of all Dojos; their engagement and happiness should be monitored to ensure that they are all included and involved. Kindness is at the core of what CoderDojo is all about!

to form in their Dojo by pairing like-minded Ninjas and facilitating conversations between all young people.

## Feedback should be constructive and positive

Taking risks and making mistakes is vital to learning, particularly in coding. Failure is one of the best ways to learn how to put things together. Ensure that Ninjas are aware of this and know that even the best coders fail sometimes. Sometimes Ninjas can become frustrated and disappointed. That's OK – help them through it with advice, support, and encouragement. When giving feedback, consider whether it's best to do so on a one-to-one basis or whether it's appropriate to address the whole group.



## Self-led learning

At Dojos, Ninjas are encouraged to explore coding and creating with technology by applying these skills to their interests. They are encouraged to develop lifelong competencies and a passion for learning. Allow Ninjas to direct their skill development by choosing what they want to learn. Some Ninjas may need help discovering their interests: don't offer suggestions, instead ask them questions to encourage them to think about things and topics they like so they realise what they are passionate about. Encourage them to try to find the answers to their own questions on the internet, from their peers, and only then from mentors. Remember CoderDojo's principle of 'Ask three, then me' (see page [PAGE XX]): Ninjas should look to three other sources of help and information before approaching their mentors.

## Not curriculum-based

Ninjas are not required to follow a set learning path. They are introduced to certain concepts in programming and are then encouraged to experiment at their own pace. Ninjas set their own goals with help from mentors, who can also help them select learning resources to support these goals. Some Ninjas move from creating apps to websites to games, others like to explore different programming languages. Some Ninjas will be happy to stay working in Scratch for a year, others won't. Individual paths and journeys evolve, and this is a good thing. Many Dojos use rewards systems, such as digital badges (see page [PAGE XX]), to motivate Ninjas and reward them for diligence, persistence, and for attaining different skill levels.

## Learning through project work

Learning through project work is a different approach to following a curriculum. Ninjas are guided to learn the basics and then encouraged to work on their own projects. In this way, they further their learning based on what they want to achieve, rather than through following a prescribed path. In this way, their learning journey takes place at own pace and is shaped by their abilities and interests.

Likewise, Ninjas working from the same resource should feel free to make it their own and produce results that appeal to them: while many Ninjas may be learning HTML, every website can look and feel different. They will be themed according to what each Ninja is interested in, and may contain different functionality based on the Ninja's goals for their project.

## Inclusive and free

### CoderDojo participation is always free

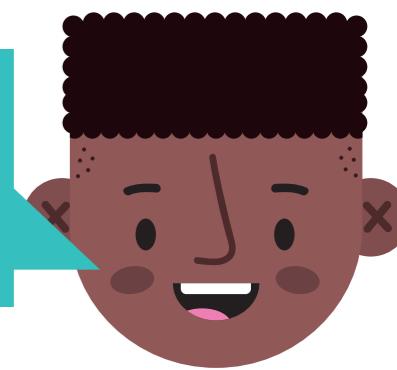
**It is fundamental to the ethos of the CoderDojo movement that attending any Dojo, anywhere in the world, is free of charge, so that Dojos can be open and inclusive to anyone who wants to participate. No one will be turned away or excluded because they can't afford access to a club where they could belong and learn.**

Mentors and parents give their time and resources on a voluntary, free-of-charge basis. This is vital to the atmosphere at a Dojo. In case your Dojo does need some funding for things like insurance, see the advice on fundraising on page [PAGE XX].



### CoderDojo open to all

**CoderDojo is fully inclusive and encourages diversity. All young people regardless of their gender, social status, religion, creed, race, or sexual orientation are welcome to attend Dojos.**



### Actively encourage girls to get involved in coding

**It is estimated that less than 20% of computer programmers worldwide are women. CoderDojo aims to encourage more young women to engage with programming and, through exposure to female role models, to consider a career in the field.**

For more advice on working with girls at your Dojo, see the CoderDojo Empowering the Future guide at [LINK].



# Open Source

## CoderDojo is open source

Since its inception, CoderDojo has been based on an open-source model: anyone anywhere can set up a Dojo as long as they operate according to the CoderDojo ethos and values. All CoderDojo volunteers are part of the global open-source CoderDojo movement and network. All are encouraged to share their insights and improvements with the community. See page [PAGE XX] for information on joining the community's discussions online.



## Use of open-source software

CoderDojo encourages Ninjas to use open-source software, which is free of charge. Through using open-source tools, Ninjas can learn to contribute to these tools as their programming skills develop, thereby giving back to the community and becoming an active technology creator.

# The CoderDojo community

## The CoderDojo community

The CoderDojo movement wouldn't exist without the CoderDojo community: volunteers around the world who generously give their time to run Dojos and help young people develop their skills. As a member of this community, you have a global network of fellow volunteers you can turn to for ideas and advice, whom you can meet at international CoderDojo events, and with whom you can organise local CoderDojo events for other volunteers and for Ninjas.

## The CoderDojo community

You can connect with the CoderDojo community online and share ideas and inspiration with your fellow volunteers by:

- Joining the live chat in the CoderDojo global Slack channel at [dojo.soy/slack](https://dojo.soy/slack)
- Joining the CoderDojo forums on the website at [LINK]
- Joining the CoderDojo Facebook group at [LINK]

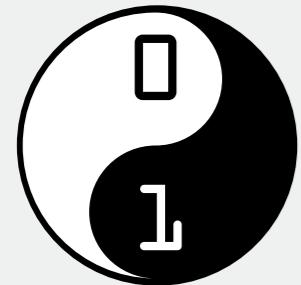
## Contacting a specific Dojo

If you want to contact a specific Dojo (maybe to thank them for a useful resource they've created), you can find their contact email address and social media accounts on their Dojo listing page, which you can search for at [LINK].



# Community events

The CoderDojo community organises two major annual events – Coolest Project and DojoCon – each of which has regional/national versions and an international version. If you are interested in organising a regional version of either, please contact the CoderDojo Foundation for details and assistance.



## CoderDojo

This is the annual CoderDojo mentors' conference, the purpose of which is sharing new things we have learned about the best way to run a Dojo, such as methods of mentoring, cool technologies, projects you may wish to investigate for your Dojo, and more.

Each year the international DojoCon is hosted by a Dojo, with that Dojo's volunteers taking on the responsibility of running the event. That means each DojoCon has its own unique feel and schedule!

For details of the next international DojoCon, see [dojocon.coderdojo.com](http://dojocon.coderdojo.com).

Coolest Projects is the annual showcase event for Ninjas, where they can exhibit the coolest thing they've built over the last year in their Dojo. It's a fantastic opportunity for them to meet members of the community, share ideas with other Ninjas, and, depending on the scale of the Coolest Projects event, potentially meet people from the software and video games sectors. For details of the next Coolest Projects International flagship event, see [coolestprojects.org](http://coolestprojects.org).



CoderDojo

# Regional Bodies

Regional bodies are collections of Dojos in a particular geographic area that work together to promote and support CoderDojo and to put on events (such as a regional DojoCon, Coolest Projects, etc.) in that area. Regional bodies can exist as either informal groups or formally licensed organisations.

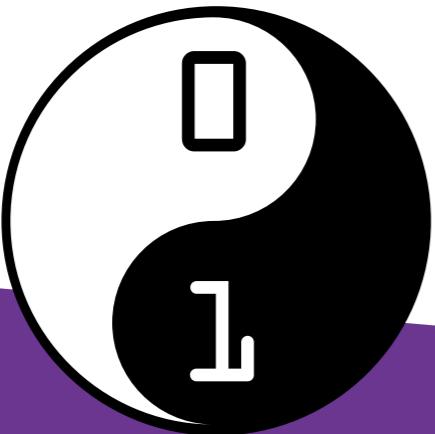
## Informal regional bodies

Groups which have signed a memorandum of understanding with the CoderDojo Foundation recognising them as the official body within that region, and which may be in the process of becoming a formal legal entity (e.g. to be able to fundraise to operate Dojos).

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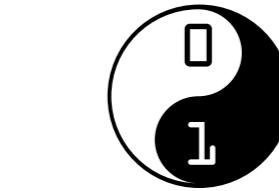
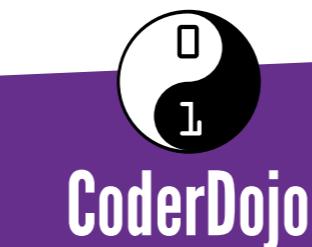


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## What does the CoderDojo Foundation do?

- We create resources for volunteers (such as this guide!) and educational content for Ninjas in Dojos (see [coderdojo.org/resources](http://coderdojo.org/resources)) so that you don't have to come up with projects every week
- We assist the CoderDojo community by handling support requests, by verifying new Dojos, and by listing them on the CoderDojo website so that prospective volunteers and Ninjas can find them
- We provide communications tools so that the the community can come together online (see page [PAGE XX] for details)
- We negotiate and manage partnerships with international organisations to build tools, resources, and support for Dojos worldwide
- We manage the CoderDojo brand, and work to spread the CoderDojo philosophy around the world!



**CoderDojo**

## Contacting the CoderDojo Foundation

You can reach us with any questions you have, great ideas you want to share, or even just a cool CoderDojo story you'd like to tell us at [coderdojo.com/contact](http://coderdojo.com/contact).

We would love to hear from you!

You also can find us on Twitter (@CoderDojo) and on the CoderDojo Facebook page, as well as on the community forums and in the CoderDojo global Slack channel (see page [PAGE XX] for details).

Find us on social media:



/CoderDojo



@coderdojo



@CoderDojo