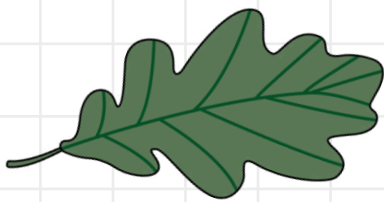


Digital Maker Stage 4 guidance for Scouts



Overview

In Stage 4, you will demonstrate that you can combine a variety of digital making skills to solve a problem or meet a challenge related to Scouting.



How to earn your badge:

- 1 Using a combination of programming, digital art, digital devices, electronic components, and other appropriate materials, create something that could serve a purpose in a Scouting activity.
- 2 Attend a digital making event and show your work, or help somebody else in your Section or another Section to work towards a Digital Maker Staged Activity Badge.

Terminology

Programming

The process of telling a computer to do certain things by giving it instructions using a programming language such as Scratch or Python

Digital art

Artwork that uses digital technology as part of the creative or presentation process, e.g. pixel art or digitally drawn graphics

Digital devices

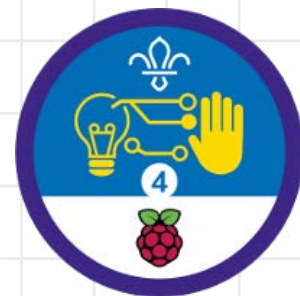
Devices such as a micro:bit, Raspberry Pi or Arduino

Electronic components

Components that can be connected together to make circuits, e.g. LEDs, buttons and sensors

For more information on terms like these, refer to the Raspberry Pi Digital Making Curriculum and its glossary at rpf.io/curriculum.





Your project idea

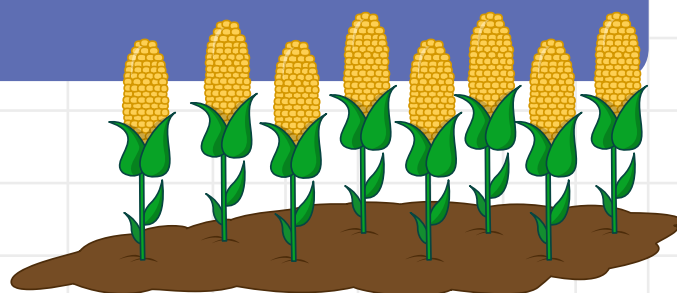
For Stage 4, you have to think of an idea for a project you can make that serves a purpose in a Scouting activity. This means that you could make a game or a piece of interactive media that's used as part of an activity that your Scout group does in your meeting or at camp. The project must combine programming, digital art, digital devices, electronic components, and other appropriate materials — so it's going to be quite complex. You might find it best to work in a team!

First, think about the activities that you do in Scouts and at camp — games, puzzles, climbing, ropework, wide games, and maybe even zorbing! Think about how a digital technology project could be used to help in some way. It could be as simple as building a digital scoreboard for a game you play, or you could do something more advanced and build a whole interactive game of your own.

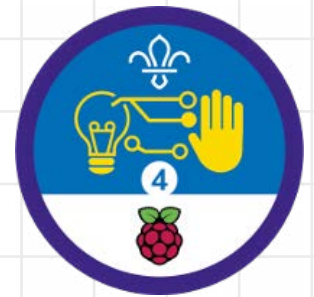
It's important for your idea to be realistic. For example, building a scoreboard for a game is realistic, but building an app that can recognise knots using computer vision is far too advanced! Think about the technology you've used, what it can do, and how to access the solutions to potential problems. If you discover part-way through a project that it might be too difficult, ask your Leader for their view. You could also ask for advice from any techies you know. You can always modify your plan, or even change your idea completely.

Write down all of your project ideas, what problems they solve, and how they could be used in a Scouting activity. When you have an idea you want to proceed with, start to plan its components and how it will work. Think about the following questions:

- **What devices and components do you need to build this?**
- **How will it be programmed?**
- **How feasible is the idea?**
- **What do you need to manufacture to create the finished build?**
- **What help will you need?**



Digital Maker Stage 4 guidance for Scouts



To ensure that you have all the components you need, copy out this table and replace the examples (for a game scoreboard system) with the information for your own project:

Component	Your project
Digital devices	Raspberry Pi and micro:bit
Programming	Python and MakeCode
Digital art	Digital graphics for the scoreboard, pixel art for the micro:bit
Electronic components	LED strip, big push button, speakers
Other materials	Woodwork, perspex

Print the components sheet and fill it in for your project.

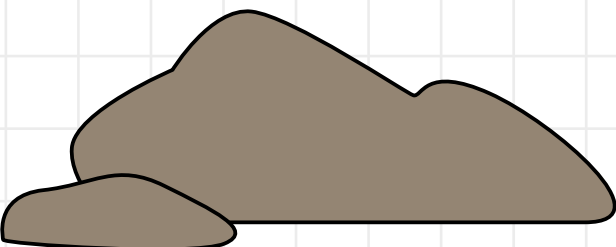
Build a digital making project



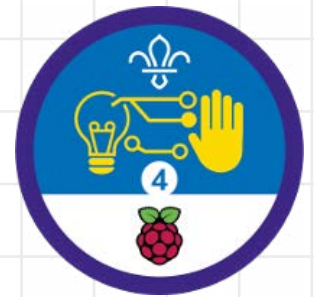
Make a plan for how you're going to complete the project. It's best to start with a prototype that shows a proof of concept. This shows what you're trying to achieve. You don't need to worry about presentation or completeness. Show a Leader or another adult your prototype, get feedback early, and once you've validated your idea and demonstrated that you have everything you need to complete the project, it's time to crack on with the build.

Make a plan for how you'll make your project, and prototype everything first. If your team members are going to work on different parts, make sure you keep good communication and stay on track.

Remember, you can get help — ask your Leader, and any techies you know, for their advice and support along the way. If you're working with electronics, fabrication tools and other machinery, make sure that you have adequate adult support and supervision for safety.



Digital Maker Stage 4 guidance for Scouts



Use your project in a Scouting activity

You should have a Scouting activity in mind from your planning phase. Your project might be for an activity run by someone else (like a Leader) or your project team might be running the activity.

Speak to your Leader to arrange when you can do the activity. This might be in your regular meeting or at camp. Plan it all so that everyone involved knows what's going on, and give it a trial run to check that everything will work.



Attend a digital making event

Once you've made and tested your project, it's time to find an event to attend to show people what you've made. You can submit your project to a show-and-tell event like **Coollest Projects**, **Maker Faire** or **MakeFest**, or something smaller like a **CoderDojo** or **Raspberry Jam**. There are also Scouting-based events like **JOTI (Jamboree on the Air)**, and many other options you can choose from.

Alternatively, you could deliver a session at another Scout group or Section. If you're in Scouts or Explorer Scouts, ask your District's Beaver or Cub Leaders if you can run a Digital Maker Stage 1 or 2 badge activity for them. See the example resources on the **Scout resources website**, or you can create your own.

Get the badge

Once you've fulfilled both requirements, fill in the assessment form and present it to your Leader to check.

Congratulations!

Congratulations! You've now achieved Digital Maker Stage 4. Are you ready for Stage 5?

