

How2 design a wearable fitness device

What is a wearable fitness device?

A wearable fitness device is just what it sounds like – a piece of technology that you wear that can either measure your activity, or provide an incentive to exercise more – or both!

A wearable fitness device could be like a Fitbit or Apple Watch and be worn around your wrist. Or it could be around your neck, embedded in something you're wearing such as a sports shirt or even a pair of trainers. The device will link to a phone and record the data that the device captures usually through an app. Here all you need to do is design the device itself, how it will be worn and what it will do. And you can be as creative as you want to be!



Before you get started, do what all good designers do and check out what is already out there. You have heard about some of the fitness tech that people can already buy. Do a bit of research to find out more about these devices. See if you can answer these questions...

- Where does the user wear the device?
- What does it do that makes the user use it? Does it collect activity data, provide feedback on performance or give the user rewards for activity? Or perhaps all three? The Apple Watch gives users badges when they achieve certain things, such as exercising every day for a week, or hitting targets for time and calories burned up.
- Is there anything else the device could do that would give the user more information about their fitness? Does the device record all activity, or just walking, jogging and running?
- Is the device attractive? Would the user feel good wearing it? Is it obvious that the user is wearing it? Could it be hidden so that other people don't know it's being worn and used? Would this be important to some users?

Tips for good device design

- Designers always start by getting to know their audience – who is going to use the device and what are the things they like and dislike. So is your audience going to be the same age as you, or younger or older? What sort of things to this age group like? It's probably easier to design a fitness device for your own age group – you know lots about that age group because you're in it!



- What is your device going to do? This is probably the most difficult thing to decide! There are already lots of devices out there, so you need to try to think differently and come up with something that others haven't thought about. So perhaps it's where the device is worn, something that is perhaps less obvious than a wrist band. Or it could be embedded inside clothing and measure particular movements that are only found in certain activities. If you like martial arts such as Judo, Karate or Taekwon-do, perhaps your device could be made for those – to record the activity involved in those sports. Or you might be into gymnastics or even swimming – how could you build a device that would capture the activity involved in those sports? That could be challenging!
- When you have decided on your device – and working in a team could be a good idea for this – then start to think about the design. It needs to be small and fit into some form of case that can be worn somewhere, or maybe sewn into a sports garment.

How2

- Designing a device that isn't worn but is hidden away in clothing is easier because you don't need to worry about how it looks! There is something called **form and function** – this means that when someone is designing something that has a **function** (such as a wrist band that collects activity data) they also have to think about its **form** – what it looks like. It's just as important that it looks good as well as doing what it is supposed to. No one will buy a fitness device that does what it says it does but doesn't look very good!
- So perhaps your fitness device will be built into a garment – a swimsuit or a martial arts outfit (known as a gi in Karate). So your design will include the garment in it – not just the device. If you come up with something that is worn outside clothing, then you will have to think more about its form – what it looks like – to make sure the user will want to wear it.
- Create your design however you want to – either by drawing it or by using a computer. Make sure you explain exactly how it works and what you are intending it to do. Plus how it is worn – either embedded in clothing or worn somewhere on the body.
- And be prepared to share your ideas with your class or club mates!

