**Fitness friend plan**

**Introduction**

In this activity, students learn about the importance of regular activity then create a simple wearable device to give regular reminders to exercise.

**Time:** 50 minutes+

**Learning objectives**

* To understand the importance of regular activity to help prevent heart disease
* To write a pseudocode or flowchart algorithm for a 'fitness friend' wearable device to remind someone to exercise
* To program, create and test a fitness friend wearable device using the BBC micro:bit

**Materials needed:** lesson slides, large sheets of paper, MakeCode editor, micro:bits, battery packs, Fitness friend hex files

**Activity and heart disease (10 minutes)**

* Give groups of students large sheets of paper and ask them to share their understanding on why regular exercise is important to prevent heart disease **(slide 2).**
* Discuss their ideas as a class, then ask them to consider why many people don’t do more exercise and ideas for simple ways people can fit more activity into their day.

**A ‘Fitness friend’ device (10 minutes)**

* Introduce the idea of a ‘Fitness friend’ wearable device to help people remember to do some exercise **(slide 3).**
* Show a working prototype (the code running on a micro:bit) and discuss students’ ideas of how it is programmed to work.

**Fitness friend algorithm (10 minutes+)**

* Ask students individually or in pairs to write an algorithm to program the ‘Fitness friend’ using the micro:bit **(slide 4).**
* Depending on your student’ level you may need go through some of the concepts so they can write the algorithm (e.g. iteration, loops and selection – see example algorithms).

**Coding a Fitness friend (15 minutes+)**

* Ask students to write their program using the MakeCode editor and their algorithm, offering support where needed **(slide 5).**
* You may need to talk students through the MakeCode editor, depending on their experience. Example code is given and shown on **slide 6** (a basic version and one with start and stop buttons – note the reduced pause time for testing).
* Once they have a working program, students can download it to their micro:bit and try out their device.

**Sharing learning (5 minutes+)**

* Discuss what students have learnt from creating their ‘Fitness friend’ (slide 7).
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* Invite students to share any problems they encountered, how they overcome them and to consider any improvements they would like to make.