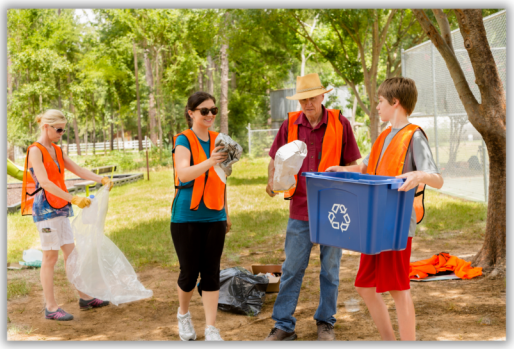
Smart litter bin

Litter can harm animals and the environment. Can you use your coding skills to help protect nature?

Challenge 1: Design a smart bin that uses the micro:bit to detect when rubbish is added and shows how much has been collected. Use a swing top bin or box with a flap.

Challenge 2: Create a micro:bit app for a litter pick that tracks the amount and type of rubbish. Reward the user for helping clean up!



```
on start
set recycling to 0
```

```
on shake
change recycling by 1
```

```
forever
show number recycling
```

```
on button A+B pressed
set recycling to 0
```

This code works for the swing top bin / box with flap. Use A and B button inputs for a litter pick. E.g. Press A for recyclables and Press B for non-recyclables.

```
on button A pressed
change Recyclables by 1
```

```
on button B pressed
change non-recyclables by 1
```

Extra challenge: Adapt this code to reward people for using the recycling bin or litter pickers for reaching a target. Turn it into a competition. When the litter picker reaches 20 items, a sound alerts them that they have met their target. How else could you encourage litter to be put the bin for recycling?

Smart litter bin 2

Here is the code for a bin that rewards users with music when the bin reaches a recycling collection goal!

```
forever
    show number Recycling
```

```
on start
    set Recycling to 0
    set goal to 5
```

```
on shake
    change Recycling by 1
```

```
on button A+B pressed
    set Recycling to 0
```

```
forever
    if Recycling ≥ goal then
        play melody ringtone until done
        pause (ms) 5000
        set goal to goal + 5
    if Recycling ≥ goal then
        play melody ringtone until done
        pause (ms) 5000
        set goal to goal + 5
    if Recycling ≥ goal then
        play melody ringtone until done
        pause (ms) 5000
        set goal to goal + 5
```

Design Challenge: Design a bin for a public place to encourage people to recycle their rubbish and / use the bin.