Ener-G use

This activity is designed to get you thinking about g-force and energy use.
Do you think more or less energy would be used if you jump higher, spin faster or accelerate quicker? Send data via radio between two BBC Micro:bits and see the results in real time.

Time: 30 minutes

Kit list:

2 x BBC Micro:bit 2.0
2 x USB cable
2 x battery packs
2x AAA batteries
1 Laptop/ tablet/PC
A partner to work with

Solutions for helpers:
Sending microbit
Receiving microbit

Video: Watch the video to see the activity and get extra tips!
tinyurl.com/ gforce-activity

Instructions:

1. Using one of your Micro:bits one team member follow this link to create the "sender" program
2. Using the other micro:bit the other team member should follow this link to create the "receiver" program
3. Plug each Micro:bit into its battery pack
4. Receiver, get ready!
5. Sender, think about how you're going to create that g-force. Jumping high? Spinning on a roundabout? REMEMBER to secure your battery pack so it won't break
6. Sender, press the A+B buttons to start sending data. Listen how the pitch of the receiver device changes as you jump. Does the pitch go higher or lower when you put more effort in?
7. You can view your results from your experiment in a graph. Go to your files and find the Micro:bit drive. Double click on MY_DATA.HTM then "visual preview" to see the graph. Can you see the spikes when high g-force is applied? How much g-force did the Micro:bit experience?

Think and talk about
Challenge question: if a driver in a car accelerates fast, are they using more or less energy? What might that mean for emissions?

At home:
How else could you send data between Micro:bits using radio? If you send dots and dashes you can talk to your friends using Morse code!

Next steps:
Gaining your amateur radio Foundation licence is an industry-recognised award. Visit rsgb.org/getting-started for more information

Career options:
Using Micro:bits is a form of coding which can lead into a wide variety of STEM careers such as a game developer, software engineer, computer programmer, mobile app developer or data scientist.