COURSE

INTERNET OF THINGS
COURSE

Apps
for
Good

SESSION 1

LAUNCH -
MICRO:BITS &
JAVASCRIPT
BLOCKS

MODULE 1

CRASH
COURSE

Objectives

CORE

- Understand what is meant by the Internet of Things (IoT)
- Be able to write a simple program for a microcontroller

CHALLENGE

- Appreciate the potential benefits and risks of IoT

Session activities

1.1 – What is the Internet of Things?
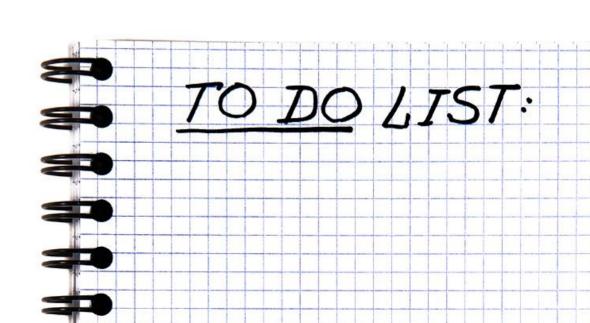
1.2 - Benefits and risks of IoT

What is the micro:bit?

Programming the micro:bit

Programming extension

1.3 - Homework

What are the risks?

Welcome to Apps for Good

Over the next few weeks, you and your team mates will set up your own startup company.

You will work together to design an IoT project that solves a problem.

You will back up your idea with market research and you will consult potential users.

After this you will create an IoT prototype and pitch your design to investors.

Apps for Good

Activity

In your workbook write down what you think the Internet of Things means.

Can you give any examples of Internet of Things devices in day to day life?

Questions to answer before you watch the video

Have you heard of the term Internet of Things?   YES / NO
If yes what do you think it means?

After you have watched the video

What is the Internet of Things?

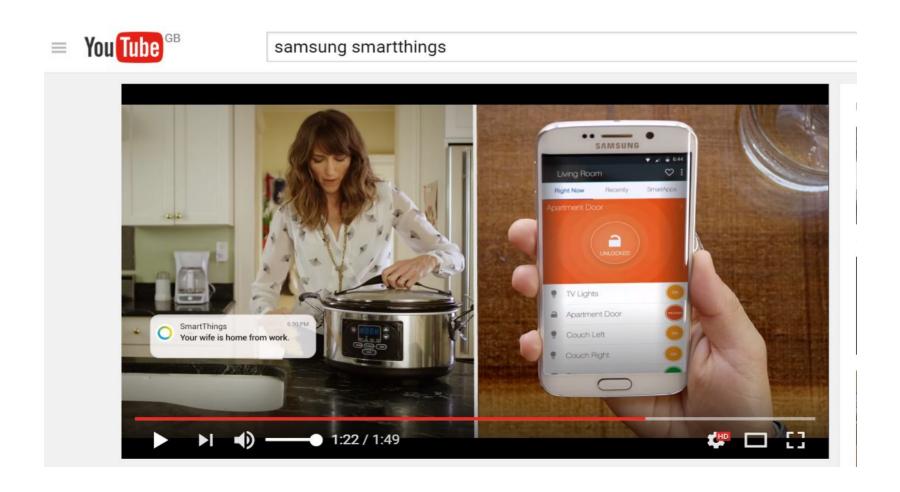Give an example of an Internet of Things device from the video?

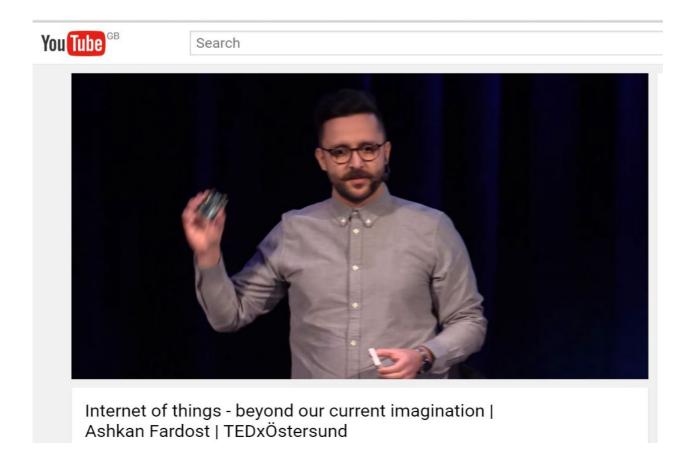Extension - What has made the Internet of Things possible?

Understanding what IoT is and how it functions should help you recognise where you are interacting with IoT devices in real life.

NAME

Apps for Good

1.1 What is the Internet of Things?

Watch this [Video](#) "No matter how you live, SmartThings brings your home to life." (1 min 49s)

Watch this TED Talk video: "Ashkan talks about internet of things, what we can expect in the future and how far the development has come." (16 mins 57, the most relevant section is from 8 mins 47)

Internet of things - beyond our current imagination |
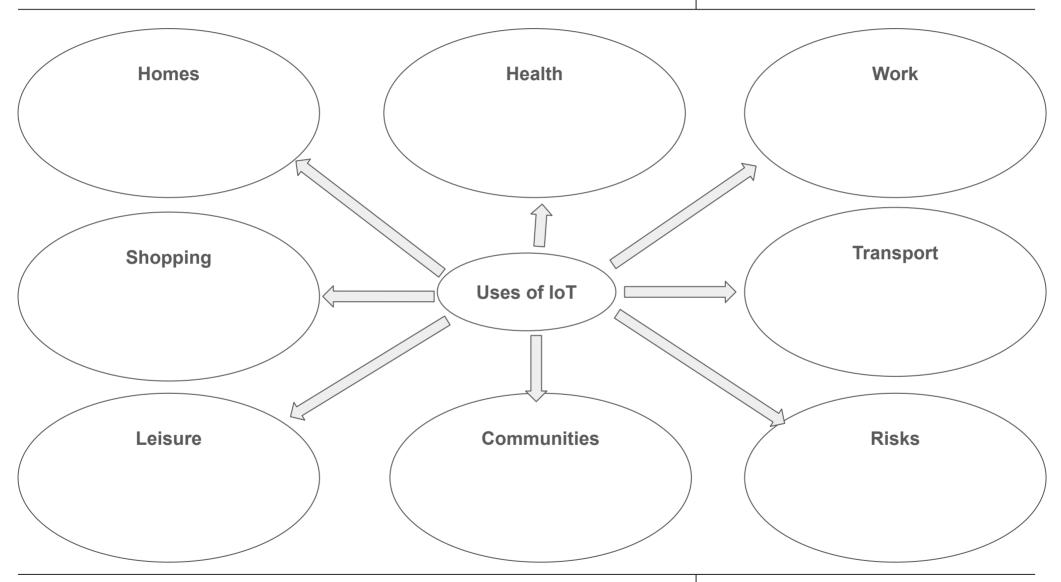Ashkan Fardost | TEDxÖstersund

1.2 Benefits and risks of IoT

In your teams, create a mindmap of all the **potential benefits** of IoT you can think of. This could include the impact on:

- Homes
- Health
- Work
- Shopping
- Transport
- Leisure
- Communities

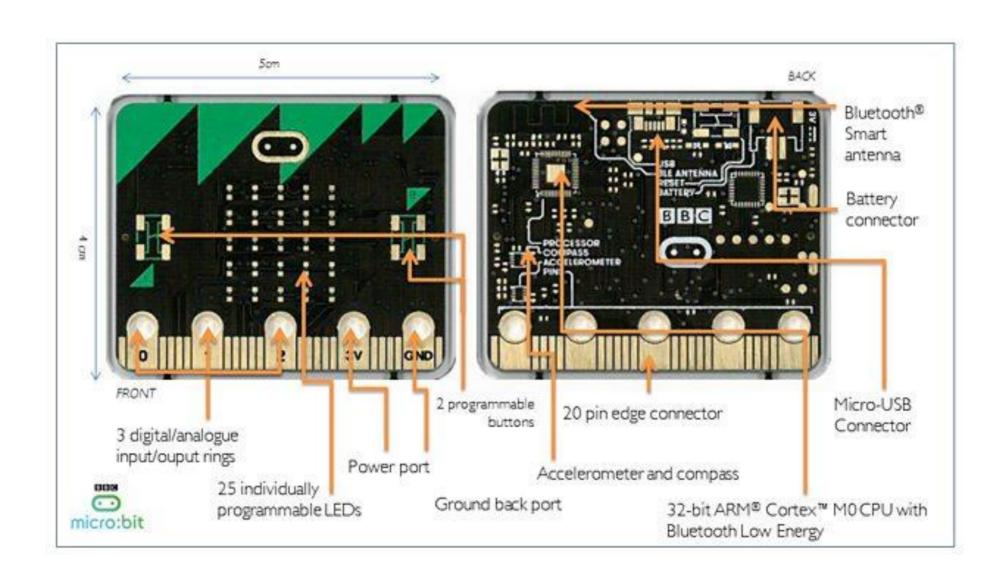Can you think of any **potential risks** of this new technology? Add these to your mindmap.

Homes

Health

Work

Shopping

Uses of IoT

Transport

Leisure

Communities

Risks

What is the micro:bit?

Apps for Good

This short video (1 min 40) introduces the BBC micro:bit
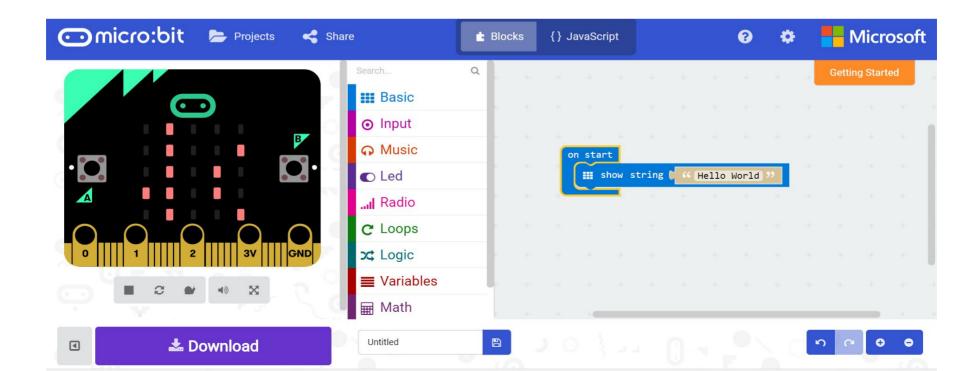
What is the micro:bit?

Programming the micro:bit - MakeCode JavaScript Blocks Editor

The MakeCode editor can be found here: https://microbit.org/code/

Drag the Show String block from **Basic** and drop it into the **On Start** Block. Right click on the **Forever** block or drag it left to delete. To load your code onto the micro:bit click on download and then drag the hex file produced from the download folder to the micro:bit
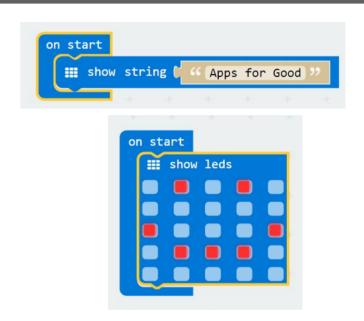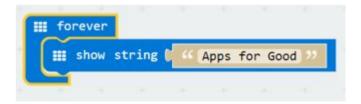
Micro:bit programming extensions

1. Add your own script to '**show string**'

2. Use the '**show leds**' block from the *Basic* menu to create patterns on your micro:bit

3. Use '**forever**' loop to keep the script scrolling

4. Use '**on button**' or '**on shake**' from *Input* to display your script if a button is pressed or the micro:bit is shaken

1.3 Homework

For homework, each member of the team should conduct internet research on IoT products currently available.

Find at least 3 devices available on the market and record:

- Name of device
- What it does
- Who makes it
- Price

Be prepared to share your research with the rest of the team next lesson.

IoT device 1	IoT device 2	IoT device 3
Device name	Device name	Device name
What it does	What it does	What it does
Who makes it?	Who makes it?	Who makes it?
Price	Price	Price

NAME

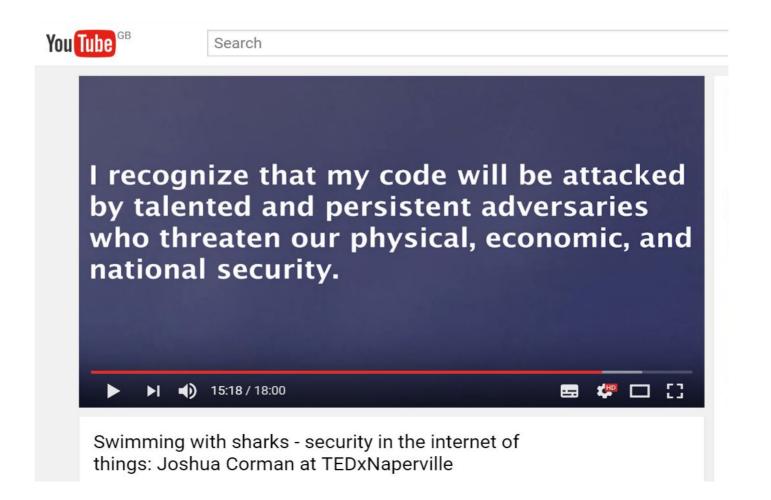Use this page to record you homework research

Apps for Good

Extension - What are the risks?

This TED video (18 mins) explores the potential risks of an interconnected world

Apps
for
Good

SESSION 2

SENSORS AND BOARDS

MODULE 1

CRASH COURSE

Using these materials