Physical Computing with MaKey MaKeys

UON CS4PS

Presented by Daniel Hickmott

Session Plan

- Presentation: Overview of Physical Computing (~15 minutes)
- Hands-On Activities (~1 hour)

Presentation Contents

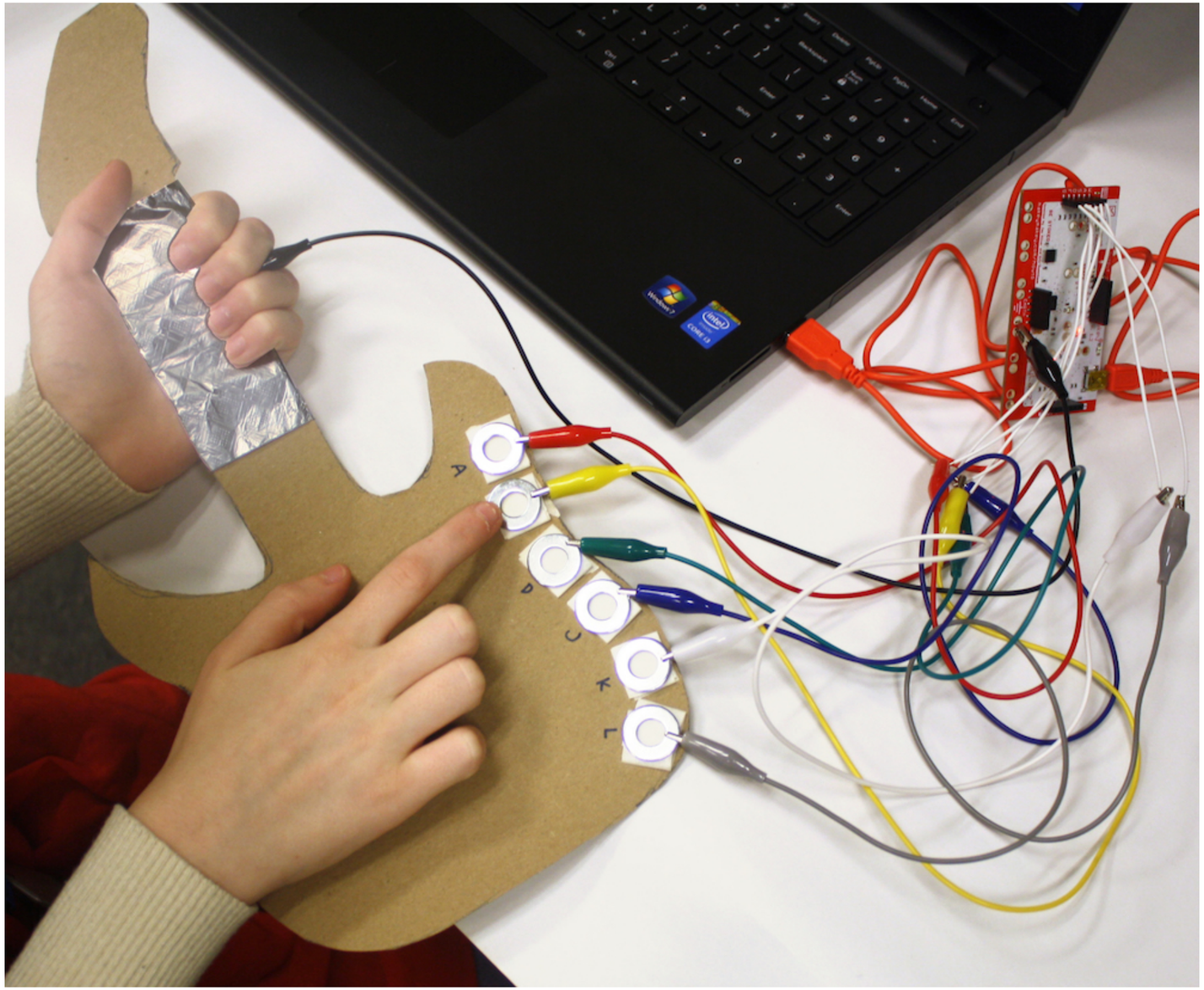
- What is Physical Computing?
- Physical Computing & the DT curriculum
- Examples of Physical Computing devices
- MaKey MaKeys
- Physical Computing Activities

What is Physical Computing?

- Usually refers to hardware or software that involves:
  - Physical interaction (not with a keyboard & mouse)
  - The use of sensors to collect data
- Interacting with a motion sensor (e.g. the Microsoft Kinect)
- Sensors can be used to record information, e.g. temperature, humidity and noise levels

Physical Computing in ACARA DT

- Years 3 & 4: "*Identify and explore a range of digital systems with **peripheral devices** for different purposes, and transmit different types of data (ACTDIK007)*"
- Years 5 & 6: "*Design a **user interface** for a digital system (ACTDIP018)*" **&** "*Examine the main components of common digital systems and how they may **connect together** to form networks to transmit data (ACTDIK014)*"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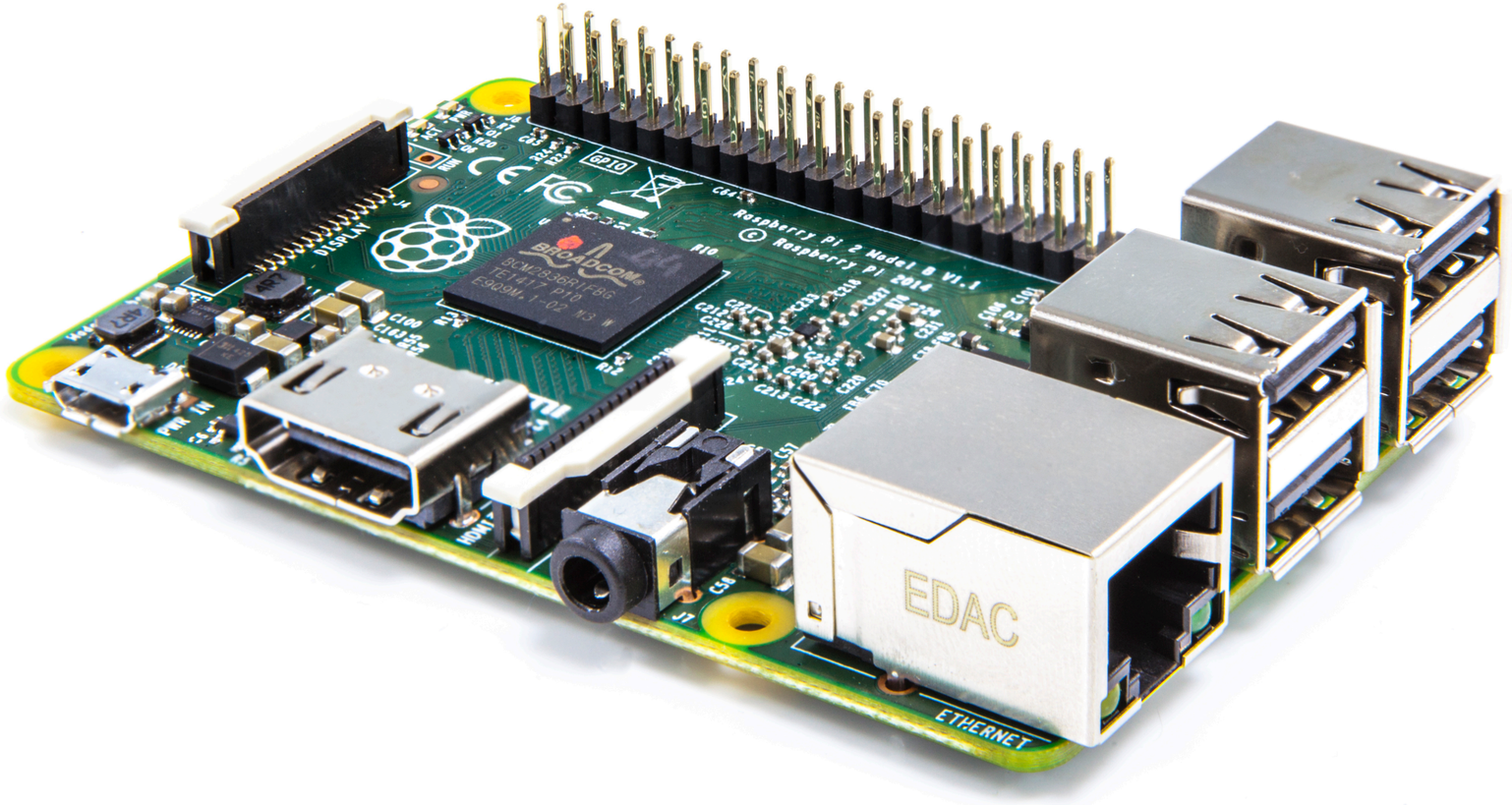
Examples: Raspberry Pi



Examples: Raspberry Pi

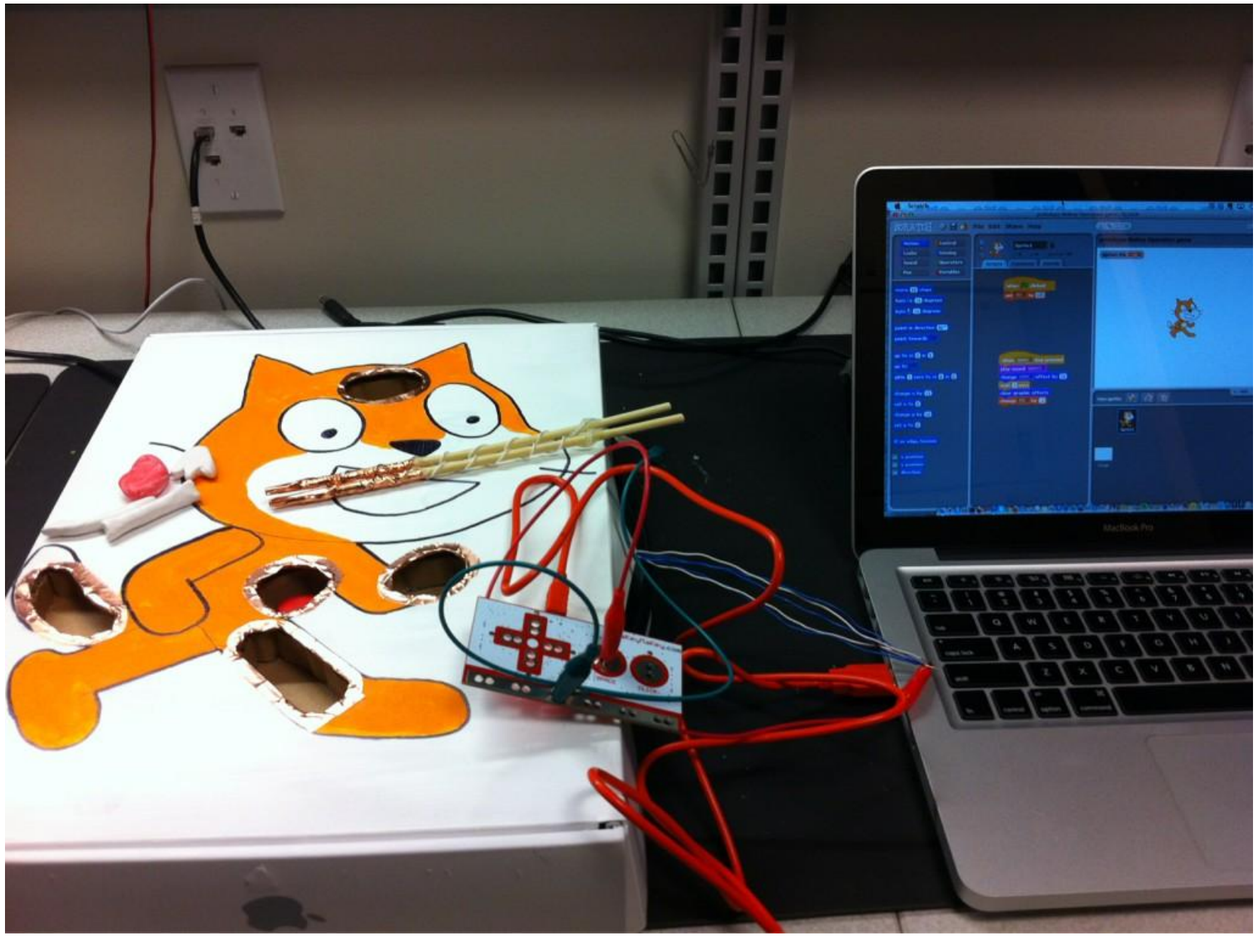
- A computer the size of a credit card
- Originated from the UK
- Can interact with sensors and cameras
- Has a big community - the Raspberry Pi Foundation

Examples: Wearables

Examples: Wearables

- Devices, like the Lilypad Arduio, can be sewed onto fabric
- Can be used for electronic textiles
- e.g. Clothing that have LED lights that change colours to music
- Growing area in research and industry

MaKey MaKey



MaKey MaKey

- "An Invention Kit for Everyone"
- Use everyday, conductive, objects to interact with your computer
- e.g. Make a Piano out of bananas or a game controller from Play Doh
- Can interact with all applications, but today we'll use it with Scratch

Physical Computing Activities

- Go to the Scratch website: www.scratch.mit.edu
- We have two tutorials for you to complete:
  - Making a Piano
  - Making an Interactive Quiz
- Let us know if you have any questions about MaKey MaKeys or the other devices we mentioned