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| **Core Knowledge Map** | | | |
| Subject: Computer Science | Year: 8 | | Term: 3.5 |
| What are we learning? | | | |
| Systems architecture – What makes up a CPU?  Embedded and physical computing - What can computers be used for in everyday life?  E-Safety refresher – How to stay safe online | | | |
| How will I be assessed | | | |
| You will create a research article, and you will create an evidence PowerPoint showing screenshots of your work with the MicroBit MCU | | | |
| Big questions: | | | |
| How do computer processors work?  What is ubiquitous computing?  How do you program a Micro-Controller Unit (MCU) to performa specific task? | | | |
| How does this build on previous learning? | | How will this link to my future learning? | |
| This topic extends student’s knowledge of the CPU from the previous hardware unit to cover the internal workings of the unit.  This unit builds on previous scratch programming to program the BBC MicroBit microcontroller. | | These concepts are further explored in GCSE Computer Science and touched on in the year 9 physical computing and programming topics | |
| Core knowledge: | | Key vocabulary: | |
| What is a transistor?  The registers of the CPU  The connections (busses) of the CPU  Simple logic gates  Sensor technology and it’s uses  Embedded and wearable systems  MicroBit   * Introduction to Physical Computing * How to program the MicroBit * Downloading code * Creating a stand-alone device such as a pedometer * Expanding the MicroBit with connected sensors or devices | | Transistor  Register  Cache  Bus  ALU  Accelerometer  Compass  Gyroscope  LED  Sensor  Logic Gate | |
| Need more help? | | | |
| 1. [Micro:bit Educational Foundation | micro:bit (microbit.org)](https://microbit.org/) 2. [What is the purpose of the CPU? - The CPU and the fetch-execute cycle - KS3 Computer Science Revision - BBC Bitesize](https://www.bbc.co.uk/bitesize/guides/zws8d2p/revision/1) | | | |