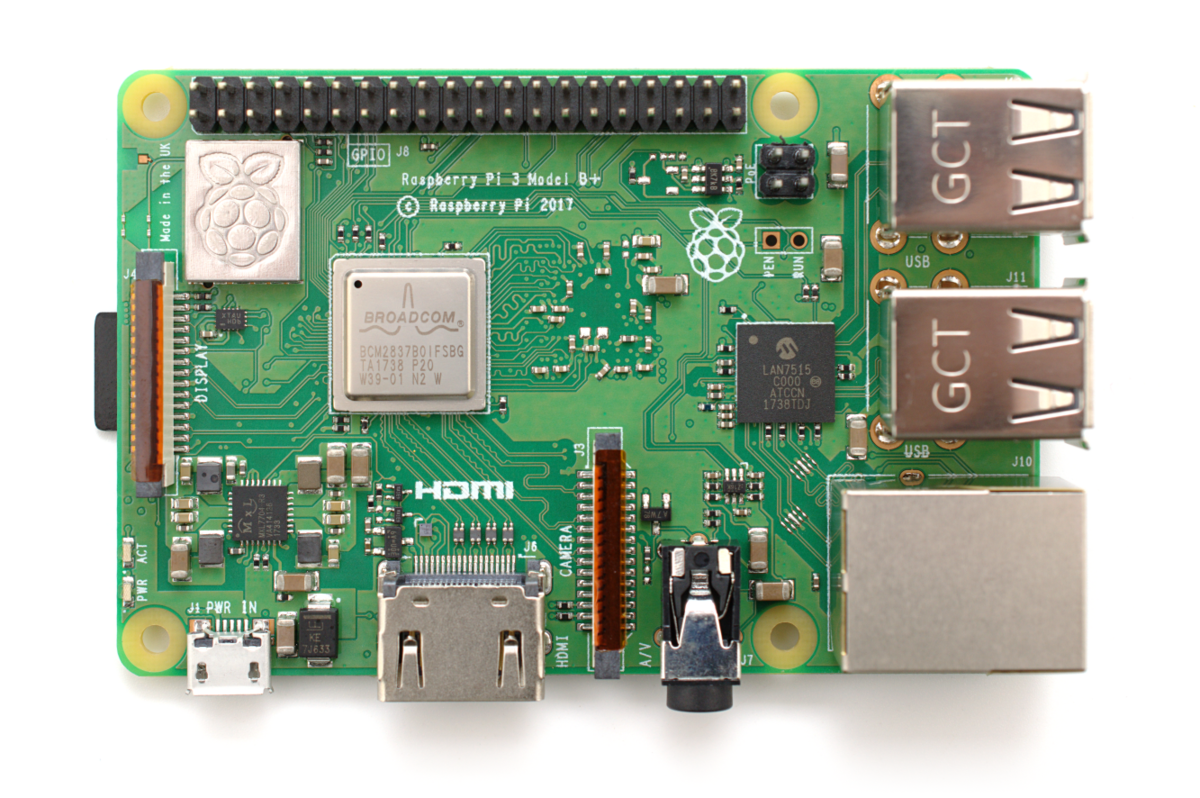
**How computers store Information!**



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| **Title: Explore More about computers and coding!**  **Total Time: 1.5 hours** |
| Learning Objectives:   * Learners will grasp the components of a computer. * Learners will understand how information is stored in computers. |
| **Discovery: What parts are in a computer? 10 min**  Computers have parts that are very similar to humans if you really think about it. Humans have the following characteristics:   * Think (We use our brains) * Communicate (We talk and use our hands) * Use Energy (We eat food as our energy source to be able to do all these things)   Image result for raspberry pi block diagram  With the instructor go through each part of the block diagram and relate it to a human being. |
| **Procedure: Match Game 10 min**  Match the following human characteristic with a computer equivalent:   |  |  | | --- | --- | | Mouth | Audio In | | Ears | Camera | | Eyes | Power | | Human Brain | Audio Out | | Eating | BCM2837 (Computer Brain) | |
| **Discovery: How do computers store information:**  Yesterday, we learned that computers understand 0’s and 1’s and that if we want to store numbers or letters we can group these 0’s and 1’s together. We do this so we can store this information in to memory.  For example: Lets store the following sentence:  “HELLO WORLD”.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | H | E | L | L | O |  | W | | O | R | L | D |  |  |  | |  |  |  |  |  |  |  |   Now add: “HAVE FUN”   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | H | E | L | L | O |  | W | | O | R | L | D | H | A | V | | E |  | F | U | N |  |  |   Notice how this information is stored. It does not read very well and the computer does not care.  **Discovery: Addresses**  How could we print the second sentence to the screen? Computers use addresses to understand where information is located. Ex: how does a mailman know where to deliver the mail?   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | *01* H | *02* E | *03* L | *04* L | 05 O | *06* | *07* W | | *08* O | *09* R | *10* L | *11* D | *12* H | *13* A | *14* V | | *15* E | *16* | *17* F | *18* U | *19* N |  |  |   **Procedure: Organize our memory - 10 min**  As a group, use the cue cards given to you to discover the message stored in memory. |
| **Procedure: Explore the Kano – Minecraft - 45 min**  Today we are going to learn how to use Minecraft. Minecraft is like a giant sandbox. Like in a sandbox, in Minecraft you can create anything from castles to mermaids. Minecraft is a virtual world where you can use different materials to create landscapes, buildings, and communities.  Your imagination is limitless! |
| **Kano Cleanup:** 5 min  Power off your Kano but leave it at your station. |
| **Evaluation: 5 min**  Once the computers are picked up, ask a few reflection questions:   * What was your favourite part about today’s session? * What was your least favourite part about today’s session? * What are 3 things you learned today? |
| **Test Time !!** 5 min |