**Creative Computing with **

**Intro to Minecraft**

Get introduced to the controls, tools, and workspace to create virtual worlds!

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| **Title: Intro to Minecraft**  **Time: 1 hours 10 min**  **Level: Beginner** | | |
| Learning Objectives:   * Learners will be able to identify the controls in Minecraft and create simple creations | | |
| * Use sequence, selection and repetition in programs: work with variables and various forms of input and output | | **Standards:**  **UK National Curriculum** |
| L1:6 CT Computational Thinking   * Understand and use the basic steps in algorithmic problem-solving * Develop a simple understanding of an algorithm * Understand the connection computer science and other fields   L1:6 CPP Computing Practice and Programming   * Construct a program as a set of step-by-step instructions to be acted out * Implement problem solutions using a block based visual programming language | | **Standards:**  **US Computer Science Teachers Association** |
| **Warm-up: 10 min**  Split students up into pairs and ask them, “If you could live anywhere in the world where would it be? What would it be like? What would the weather be like?” Have students turn and talk to each other for to discuss. After the time is up have students share out where they would want to live and what it is like.  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! | | |
| **Collect Kanos:** 5 min  **Retrieve Computers, Turn On, Log In..** | | |
| **Exploration Activities: 35 min**  **Challenge 1:**Before we start using Minecraft we need to learn about keyboard controls and navigating in Minecraft. As each key is explained, try it out on your Kano!   * w = forward * s = backwards * a = left * d = right * e = inventory. Materials to build with * numbers 1 - 0 are for choosing different materials * Move mouse = turn around * left click mouse = build (or destroy) * Space bar = jump (repeated tapping will raise you into the air. Quick double tap while take you back down)   Let’s walk through accessing a virtual world in Minecraft. First, access Minecraft through the dashboard. Then,   * Click on ‘**Start’** * Click on ‘**Playground’** (The numbers are for a step by step interactive tutorial which takes you through the different features of coding Minecraft with blocks) * Click on ‘**Go’** * Click on ‘**Make’** (Orange button, bottom right)   Take a bit of time to explore the environment around you, trying out the new controls you learned!    We also want to periodically save our work while we are in Minecraft. To save your world click ‘**tab’**, menu, then “save.”  **Challenge 2:** The workspace, tools, making floors.  Minecraft is pretty cool, but how do we get to the fun part of making things? In order to create things we use the ‘**tab’** button. Click the ‘tab’ button, and we should see the workspace and tools on the left hand side:     * **‘Numbers’** includes blocks with single numbers, three numbers and three numbers which can include other numbers or blocks * **‘Setters’** includes blocks for creating 2D floors, creating 3D structures and setting the user's position * **‘Getters’** includes building materials and variables     Let’s try to make something. We will make a flower bed. As I do the steps, copy my instructions.   * Press ‘**tab’** to enter workspace * Click on ‘**Setters’** and drag the ‘**Set Floor’** block * Click on ‘**Setters’** and drag the single number block and connect it to the ‘**length’** connector * Click on the single number block and enter ‘**10’** * Click on **‘Setters’** and drag the single number block and connect it to the **‘width’** connector * Click on the single number block and enter **‘3’** * Click on **‘Getters’** and drag **‘Block Type’** and connect it to the **‘type’** connector * Click on Air **‘triangle’** to open up drop menu and click on **‘flowers’** * Click on **‘Make’**      * **Ask students:** *What do you currently see?* * Now walk for a little and the to press **‘Make’** again. **Ask students again:** *What do you see?* * Look for the first flower bed. **Ask students:** I*s it still there? What does this mean?*   + There is a correlation between the position of the user to the things you make and that whatever is on the workspace will be made if you click on **‘Make’**. * If time ask students to find some more space and to change the **‘type’of block** for water, grass, or ice. Make some more floors. * Students to save all of their work by clicking on **‘Menu, Save’.**   **Congratulate your students! You just wrote code to hack Minecraft!!**  **Challenge 3:** Using blocks and positions and adding text   * Close out of Minecraft and open it up again. We want to practice opening up our previously saved worlds. Once Minecraft is open click **‘Files, Minecraft - content** and clicking on the name of your**.xml** file. Alternatively you can click on the **‘Make Minecraft’** app and click on **‘tab’, ‘Menu’, ‘Load’** and open their **.xml** file * Now let’s learn some new buttons. * The **‘Reset’** button clears the workspace of code blocks which will ensure previous code is not replicated. Press “reset.” * Now, practice what you have learned by setting a block of grass.     **Challenge 4:**  Create a new 3D structure of your own! Use code to build the structure.  **Save your work and share to Kano World!** | | |
| **Sharing: 15 min**  Ask students what they have learned. What were some of the key phrases or words we learned (‘blocks, numbers, setters, getters, type, length, width, orientation, etc.’)?  What did you like? What did you not like? What was hard? What was easy?    Call students up to the board and have them draw something they want to create next time! | | |
| **Kano Cleanup:** 5 min  **Power down and put away the Kanos** | | |