

AUTISMFIT

Promoting the Inclusion and Wellbeing of Youth with
Autism



GAME 3

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Introduction to Makey Software for Game Creation

This document provides an overview of Makey software - a tool that enables the creation of interactive and accessible games, which also can be beneficial for youth with autism. Designed to support interactive learning, Makey offers schools and parents a direct way to introduce **STEM-based projects** into classrooms and homes.

Since its inception in 2010, Makey has become a popular platform worldwide, known for its simplicity and extensive resources that make learning projects easy to find and implement.

This document will walk you through Makey's key features and capabilities, highlighting its potential for creating customizable, interactive games. With a focus on sensory engagement and adaptability, Makey is a powerful tool for developing games that are both educational and enjoyable.



Why Makey?

Makey software is a platform that simplifies **game creation**, making it accessible even for those **without a technical background**. With its user-friendly interface, visual scripting, and sensory customization, Makey is an ideal tool for developing interactive, multi-sensory experiences with an aim to diverse cognitive and sensory needs.

Key Features and Capabilities

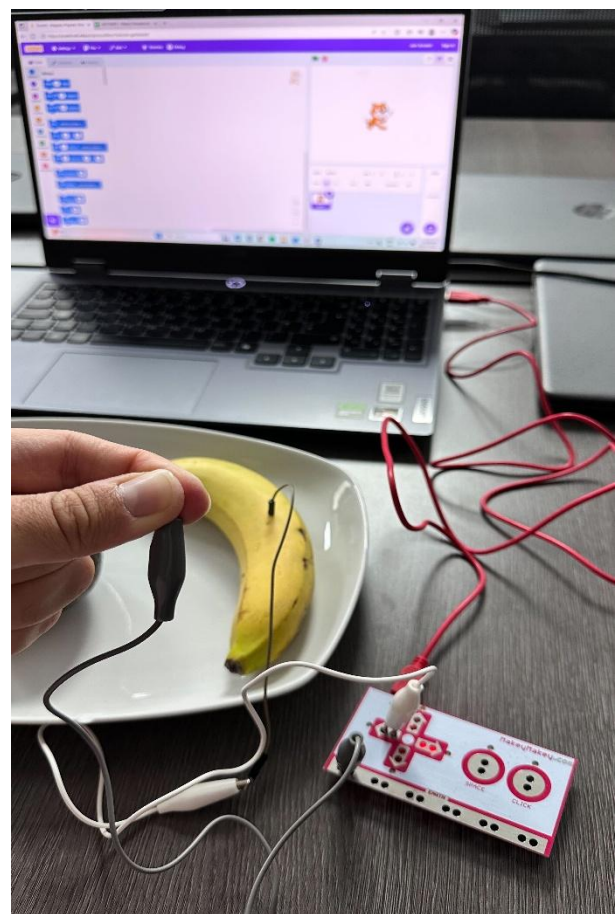
- **Customizable Sensory Inputs:** Makey supports various input types, such as sound, visuals, and touch, allowing us to adapt games to the sensory preferences of **youth with autism**.
- **Visual Scripting:** Instead of traditional coding, Makey uses visual **block coding**, enabling game creation through drag-and-drop logic blocks that simplify the design process.
- **Adaptable Game Elements:** Game components can be adjusted easily, sensory effects, and interactions, making it easy to create content that suits each **user's comfort level**.
- **Educational and Recreational Focus:** Makey supports a wide range of game types, from memory and matching games to interactive storytelling, all of which can be customized to improve development and social engagement.

Makey Makey: A Fun Tool for Learning Nutrition

Makey Makey makes learning about nutrition interactive and memorable. Transforming everyday objects like fruits and vegetables into touch-responsive inputs, allows young people to directly interact with healthy foods, strengthening recognition and familiarity.

This hands-on, gamified experience helps students understand **food groups**, **build balanced meals**, and **learn healthy habits in a fun**, engaging way that encourages long-lasting positive choices.

Setup Makey Makey



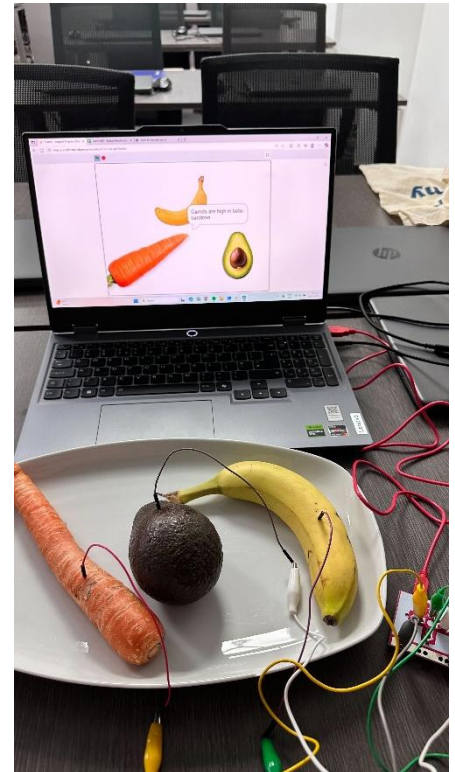
To set up your Makey Makey for this experiment:

1. Plug the Makey Makey into the USB port of your computer.
2. Connect one alligator clip to the **ground** (marked "Earth" or "GND" on the Makey Makey). The student must **hold or touch the ground cable at all times** for the experiment to work.
3. Connect the other alligator clips to the left, up, and right arrow inputs on the Makey Makey.
4. Attach the other end of each of those clips to a **carrot** (←), **avocado** (↑), and **banana** (→).
5. On the computer, open your Scratch project. When a fruit is touched, it sends a signal just like a key press!

Experiment 3: Food Group Sorting Game

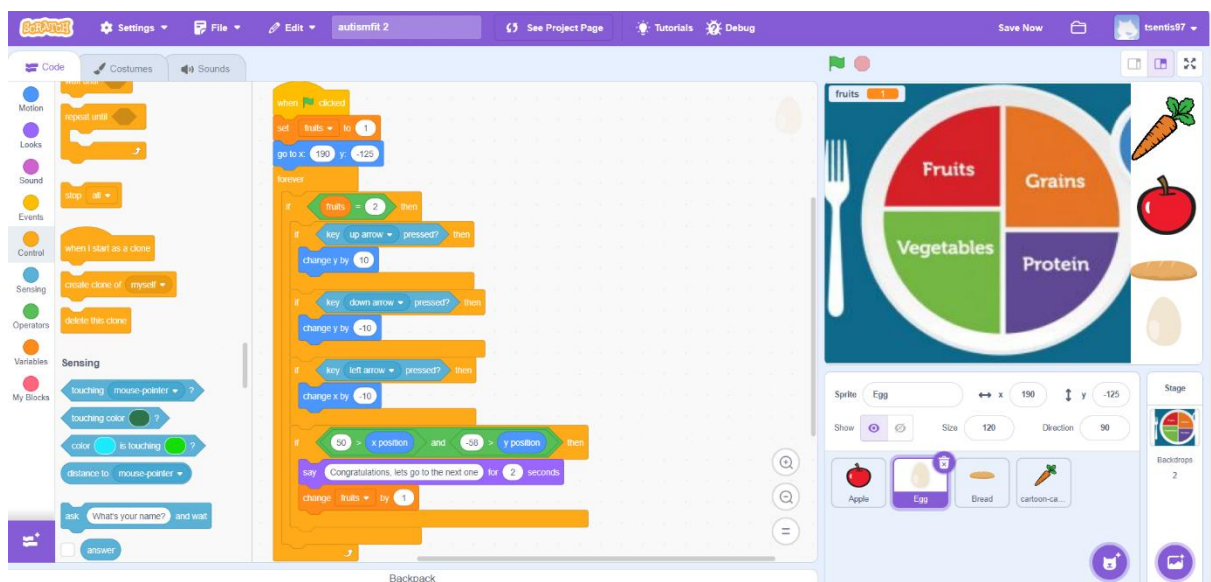
Experiment Explanation

- **Goal:** Help learners classify food items into correct groups (fruits, vegetables, protein, carbs).
- **Setup:**
 - Picture of a plate divided into 4 sections.
 - Apple, Egg, Bread, Carrot sprites.
 - Controls: Arrows ($\leftarrow \uparrow \rightarrow$) move each item to its spot.
- **Interaction:** When an item is moved to the correct section, a message appears: "Great Job!"
- **Why This Is Engaging:** Students enjoy moving objects on screen, and the reward message helps build confidence.



Coding Overview

- Arrow keys move items (change x/y).



- If touching the correct area $\rightarrow$ show congratulatory message.
- Use color sensing or sprite touching detection.
- Code includes motion blocks, conditionals, and visual feedback.

Three screenshots of the Scratch project "autismfit 2" showing the progression of a game where a character moves through a food pyramid.

Screenshot 1 (Top): The character is an Apple at (134, 24). The code sets the 'fruits' variable to 1. The 'when clicked' event triggers a 'go to x: 134 y: 24' block. The 'forever' loop contains: 'if fruits = 1 then' block with 'key up arrow pressed?' and 'change y by 10'; 'key down arrow pressed?' and 'change y by -10'; 'key left arrow pressed?' and 'change x by -10'; and a 'say Congratulations, lets go to the next one for 2 seconds' block. The 'fruits' variable is incremented by 1.

Screenshot 2 (Middle): The character is Bread at (190, -60). The code sets the 'fruits' variable to 2. The 'when clicked' event triggers a 'go to x: 190 y: -60' block. The 'forever' loop contains: 'if fruits = 2 then' block with 'key up arrow pressed?' and 'change y by 10'; 'key down arrow pressed?' and 'change y by -10'; 'key left arrow pressed?' and 'change x by -10'; and a 'say Congratulations, lets go to the next one for 2 seconds' block. The 'fruits' variable is incremented by 1.

Screenshot 3 (Bottom): The character is a cartoon carrot at (190, 120). The code sets the 'fruits' variable to 4. The 'when clicked' event triggers a 'go to x: 190 y: 120' block. The 'forever' loop contains: 'if fruits = 4 then' block with 'key up arrow pressed?' and 'change y by 10'; 'key down arrow pressed?' and 'change y by -10'; 'key left arrow pressed?' and 'change x by -10'; and a 'say Congratulations, you completed the activity for 4 seconds' block. The 'fruits' variable is incremented by 1.

The game interface includes a 'fruits' variable monitor, a food pyramid with four quadrants (Fruits, Grains, Vegetables, Protein), and a 'Backpack' containing various food items.

Outcome

- Students learn to connect real objects to code responses and identify fruits in an engaging way.
- For students with autism, this activity supports recognition, cause-effect understanding, and sensory engagement

