SCIENCE NORTH SCIENCE NORD
SUDBURY, ONTARIO, CANADA

Maker Spectacular Post-Program **Grades 6-8**

Gamepad Generation

Assessment
Cross-curricular

Big Ideas

- The form of a structure is dependent on its function. (Grade 7)
- Systems are designed to accomplish tasks (Grade 8)
- All systems include an input and an output (Grade 8)
- Systems are designed to optimize human and natural resources (Grade 8)

Specific Expectations

- Use technological problem-solving skills to design, build and test a device that transforms electrical energy into another form of energy in order to perform a function (2.5 - Grade 6)
- Use a variety of forms to communicate with different audiences and for a variety of purpose. (2.7 – Grade 6
- Evaluate the impact of ergonomic design on the safety and efficiency of workplaces, tools, and everyday objects and describe changes that could be made in personal spaces and activities on the basis of this information. (1.2 – Grade 7)
- Use technological problem-solving skills to investigate a system that performs a function or meets a need. (2.4 – Grade 8)
- Investigate the information provided to consumers/clients to ensure that a system functions safely and effectively. (2.5 – Grade 8)

Materials

- Paper
- Drawing materials
- Modelling Clay (Optional)
- Wires (Optional)
- Aluminium foil (Optional)

Safety Notes

Introduction

- Students will use their knowledge of how the Makey-Makey™ circuits functioned to develop a more ergonomic version of the gamepad for their use.

Description

- Remind students of the Makey-Makey™ controllers, and discuss whether they found them easier/more comfortable to use than controllers usually used with games.
- Discuss how the field of ergonomics works to make different systems easier & more comfortable to work with.
- Explain the importance of having a controller with a ground which touches skin, and buttons which complete the circuit in the same way the Makey-Makey™ objects work.

Action

- Have students brainstorm ways in which the makey-makey controller could be made more ergonomic.
- Have students design and draw out a diagram of their newly improved controller, showing the paths of each wire, and where the makey-makey circuit would be located.
- Have students write a set of instructions for a person who will eventually use the controller.
- (Optional) Have students sculpt a model of their controller from clay, running wires through the clay to the button locations.

Extension

- Discuss the ways in which objects and electronics in everyday life could be changed to make them more comfortable & simpler to use.