**MaKey MaKey - An Invention Kit for Everyone (Design Challenge – 100 pts.) – Due Thursday, April 6**

For this assignment you will be working in an engineering design team to explore the possibilities of the Makey Makey Invention Kit used with Scratch programming. Each team will create a teaching model invention to demonstrate to the class and a design brief outline and that can be used in your future classroom.

**Getting Started**

* Watch the video - <https://www.youtube.com/watch?v=rfQqh7iCcOU>

# Review the MaKey MaKey Quickstart Guide

# <http://makeymakey.com/howto.php>

# Optional – review the additional Quickstart Guide with trouble-shooting guide.

# <https://learn.sparkfun.com/tutorials/makey-makey-quickstart-guide>

* Explore the MaKey MaKey website <http://makeymakey.com/> and conduct some simple experiments using the device

**Going Further**

* You can also use an online program called Scratch (<https://scratch.mit.edu/projects/editor/>) to program the Makey Makey
* Review the basic instructions for creating a program for the Makey Makey with Scratch
  + <http://makeymakey.com/howto/makeymakey-scratch-handout.pdf>
  + Note: remember the software ideas such as the drums, piano, and games that you tried out on the Quickstart Guide – these were all created using Scratch.
* Review the provided Lesson Plans at <http://makeymakey.com/lessons/>

Now that you are familiar with the basics of using the Makey Makey and Scratch, you will work as a member of an engineering design team to develop an invention using the MaKey MaKey that could be used in your future classroom.

**Deliverables** – design brief (email submission of Word document), functional teaching model, and presentation and demonstration of design brief and teaching model.

**Design Brief Outline**

* **Title:** Unique title that hints at the task to follow
* **Grade Level:**
* **STEM Standards:** Include STLs and one other disciplinary STEM content area
* **Essential Questions:** What question or questions will the student be able to answer after completing the STEM scientific inquiry challenge?
* **Scenario:** Write an engaging scenario that will capture the attention and possibly intrigue the students. Fictional scenarios are entirely appropriate. A good scenario will place the students into the story or challenge.
* **Challenge:** In specific terms, identify exactly what the student teams are required to do to fully answer the STEM inquiry challenge
* **Tools, Materials, and Resources:** Identify all of the tools and resources that will be available to the students as they attempt to solve the challenge. Try to keep the list small, students need to know that in the work world, unlimited supplies are rarely available and there are benefits to solving problems as efficiently as possible.
* **Teacher guidelines:** Describe to the teacher how this lesson/activity will be carried out, what will the students be expected to discover Also, identify the parameters that the teacher should establish for the student teams to keep them going in the correct direction.
* **Other:** You are also welcome to add additional materials (i.e., literacy connection, additional standards from other fields, journals, worksheets, evaluation, etc.).