

<u>Teacher Name:</u> Sierra Gould	<u>Date:</u> July 27th, 2016										
<u>Common Core Standards Addressed</u> <table> <tr> <td>NBT.1</td><td>OA.2</td></tr> <tr> <td>NBT.3</td><td>MD.7</td></tr> <tr> <td>MD.10</td><td>MD.8</td></tr> </table> <u>ISTE Standard Addressed:</u> 2. Communication and Collaboration	NBT.1	OA.2	NBT.3	MD.7	MD.10	MD.8	<u>Driving Question(s)</u> Where can you search if you have a question? What resources can you use if you're stuck? Where can you look if you forget how to play an Investigations Game?				
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NBT.3	MD.7										
MD.10	MD.8										
<u>Connection</u> All year long we have been learning how to play different math games to help us practice the skills we have covered in class! But what happens if you forget the rules for how to play a game?	<u>Materials Required</u> <u>Day 1</u> <table> <tr> <td>Investigations hardback book with game rules</td><td>Game boards from chapters 1 - 5</td></tr> <tr> <td>Game Pieces</td><td>Dry Erase Markers</td></tr> <tr> <td>Dice</td><td>Numbered Cards</td></tr> </table> <u>Day 2</u> <table> <tr> <td>All materials from day 1</td><td>6 Makey Makey kits</td></tr> <tr> <td colspan="2">6 boxes with playdoh, pens, vegetables, cardboard, tin foil, plush toys, and paper</td></tr> </table>	Investigations hardback book with game rules	Game boards from chapters 1 - 5	Game Pieces	Dry Erase Markers	Dice	Numbered Cards	All materials from day 1	6 Makey Makey kits	6 boxes with playdoh, pens, vegetables, cardboard, tin foil, plush toys, and paper	
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<u>Lesson Overview</u> <u>Day 1</u> This lesson will last for 2 days. The first day will be dedicated to choosing a game based on the students' data, writing out their version of the rules for how to play, then creating a WeVideo of them explaining the rules, playing the game with a partner, and explaining how to win the game. Finally they will upload the video to Youtube. <u>Day 2</u> The second day will be dedicated to further exploring with the makey makey and a box of possible conductors. Students will link a picture to their youtube video and with one click of the makey makey, if a child needs math help, they can click on the corresponding keys to listen to a short WeVideo clip on how to											

play the math game.

Process

Day 1

Today I want to teach you how to create a how-to instructional video for other students to view if they need help with math.

First, in groups of 6, you will choose a math game based on your data.

Next you will discuss and then write out the rules for the game.

Then, one partner will create a WeVideo of you explaining the rules for the game.

Finally, I you will upload the video to our class Youtube page.

This is important because it shows that you understand game rules, but more importantly, the math behind the game, and also because this technology skill is one you might use in the future for a blog, youtube channel or for college.

I'll know you've met the standard when I see a Youtube video that shows you correctly explaining the rules for how to play the game, explaining how to win the game, and you actually playing the game and taking at least 2 turns with your partner.

Day 2

Today I want you to further explore with your makey makey kits.

You have 2 goals.

Goal 1 is to link a picture to your Youtube video.

Goal 2 is to connect your makey makey in a way that a student can click and be able to listen to your video.

You have 10 minutes to link the video.

Next, you will have 25 minutes to explore with your makey makey and discover which materials are conductors and will work with your makey makey.

You have an additional 25 minutes to connect your makey makey to Soundplant in order for other students to listen to your video clip.

I will know you have met the standards when you have completed all the requirements on the rubric.

Day 1: Assessment / Exit Ticket

Students' videos will be assessed using the following rubrics, depending on if they were actors or videographers.

Actor's Project Rubric	✓
I explained all the rules for how to play the game.	
I played for at least 2 turns with a partner.	
I explained how to win the game.	
I contributed and was a team player throughout the process.	

Day 2: Assessment / Exit Ticket

Students will be assessed on their product based on the rubric below.

Video / Makey Makey Project Rubric	✓
I linked my video to a picture	
I discovered and connected a material that conducts to my makey makey	
I properly connected my MM kit to the computer	
My link leads to my video when it is clicked	
I contributed and was a team player throughout the process.	

Support for ELLs

Videographer's Project Rubric		• Read aloud • Picture support • Non-speaking roles • Partner work • Translate game rules and create a video in their native language.
By collaborating with my team, I wrote the script for the video.		
I created a video of my team explaining rules for the math game.		
I helped upload the video to youtube and WeVideo.		
I contributed and was a team player throughout the process.		

Lesson Rationale

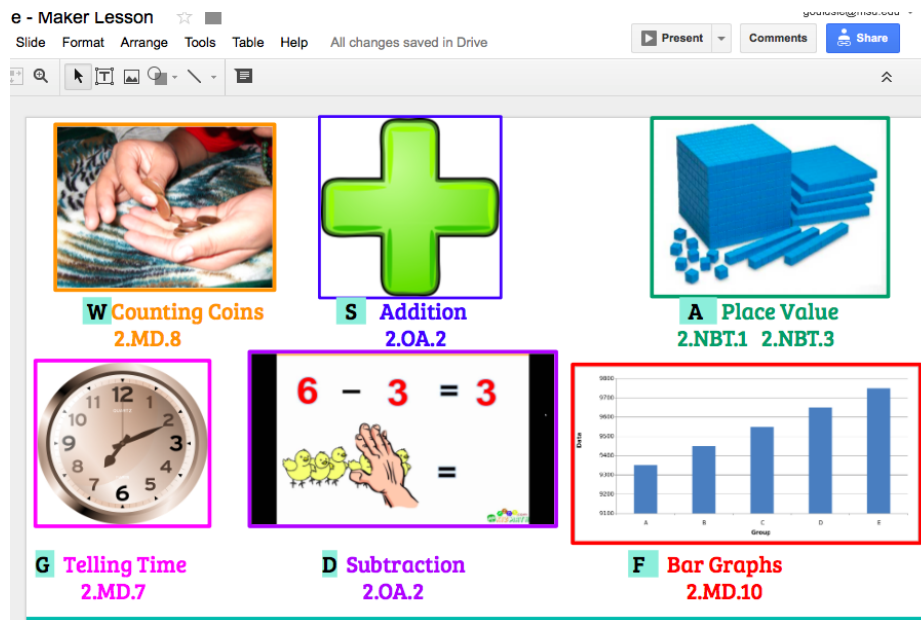
I chose to teach this lesson in this particular format, because research says that students retain more information and understand content more completely when they are asked to teach it to someone else (Everding, 2014). I decided to begin with the task of students teaching others how to play our math games. Sometimes students forget the rules, and need a reminder. This method caters to multiple modalities of learning and if students can play the game, in addition to computing equations correctly, they are practicing and reinforcing concepts thoroughly. I also chose to have students display their work in two ways (video clip, and an audio clip). By displaying their work in multiple ways, students are developing skills for future projects or careers and also, students will have an option to choose which modality they prefer.

Also, I serve a lot of students who are learning English. Because of this, they may not be able to read the directions for our math games. This is a potential problem because during workshop time, their task is to choose a game, based on their personal data, to practice and reinforce mathematical concepts taught in class. By touching a carrot, they now can watch a how-to guide for how to play the game. Since math is pretty universal, even if they don't understand the language, they will still be able to practice what they see. Based on my research, I found that one of the most effective ways for students to complete projects and retain information is to work together in collaborative groups (Kim & Tan, 2013). With this method, students are able to share their ideas and learn from one another. They are able to reason, accept differences in ability level and opinions of others, and build social communication skills essential for success in today's busy world (Kim & Tan, 2013).

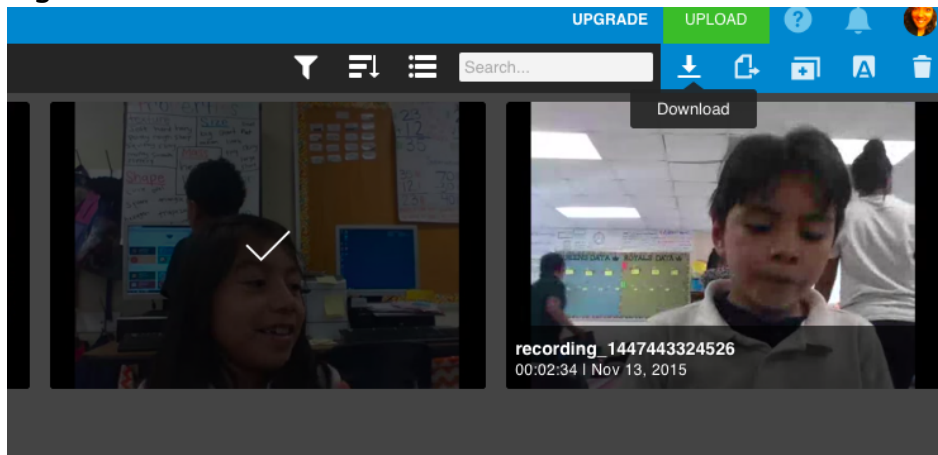
Because of the collaboration, technology incorporation, peer teaching and learning that is supportive of the maker movement, I'm excited to possibly implement this lesson with my class during the upcoming school year.

Step By Step Visual Aids

1. If you already know how to upload your WeVideo to Youtube, skip to step 2. If you need help uploading your video, click [HERE](#).
2. Choose a photo to represent your topic. Upload it to your group's Google Slide.



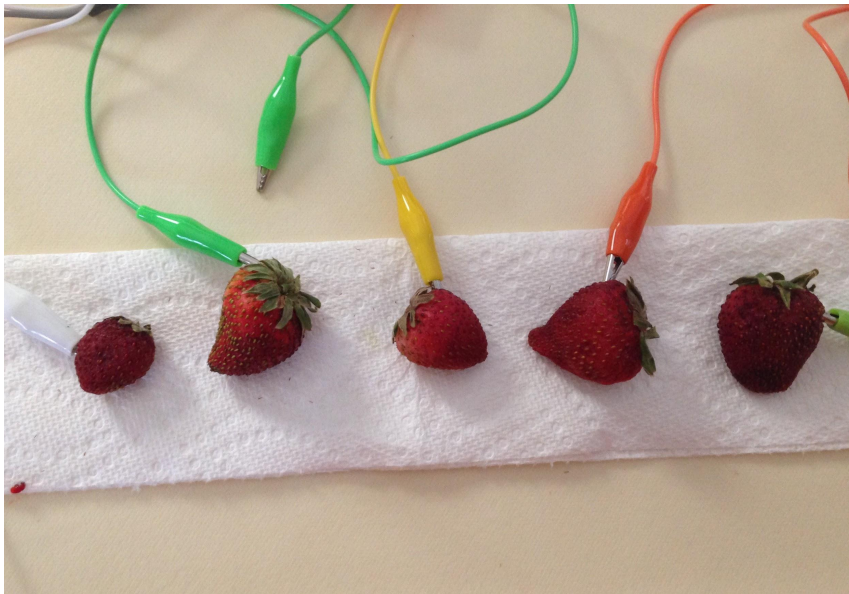
3. Link your youtube video to a photo relevant to your project. If you already know how to hyperlink a photo, skip to step 3. If you need help, click [HERE](#)
4. Download your WeVideo.



5. Upload your WeVideo to SoundPlant and assign your videos to each key. If you already know how to do this, skip to step 6. If you need help, watch the video [HERE](#).
6. Connect your white Makey Makey wires to the keys W, A, S, D, F, and / or G, depending on how many video clips your group is adding.



7. Connect the colorful alligator clips to the conductor your group chose from the box.
Ms. Gould chose to use strawberries. You might use something different, and that is okay.



8. Revisit your google slide. Type in the letters that match up with your Makey Kit. For example, if I linked "W" to my "Counting Coins" video, I need to write a "W" beside the "Counting Coins" picture.
***Look at step 2 for a reference as to how you should do this.
9. Lastly, click your links and make sure they work! (Both the WeVideo AND the Youtube Links!)

References

Everding, G. (2014, August 12). Students learn more if they'll need to teach others. Retrieved August 27, 2016, from

<http://www.futurity.org/learning-students-teaching-741342/>

Mijung Kim & Hoe Teck Tan (2013) A Collaborative Problem-solving Process Through Environmental Field Studies, International Journal of Science Education, 35:3, 357-387, DOI: 10.1080/09500693.2012.752116

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