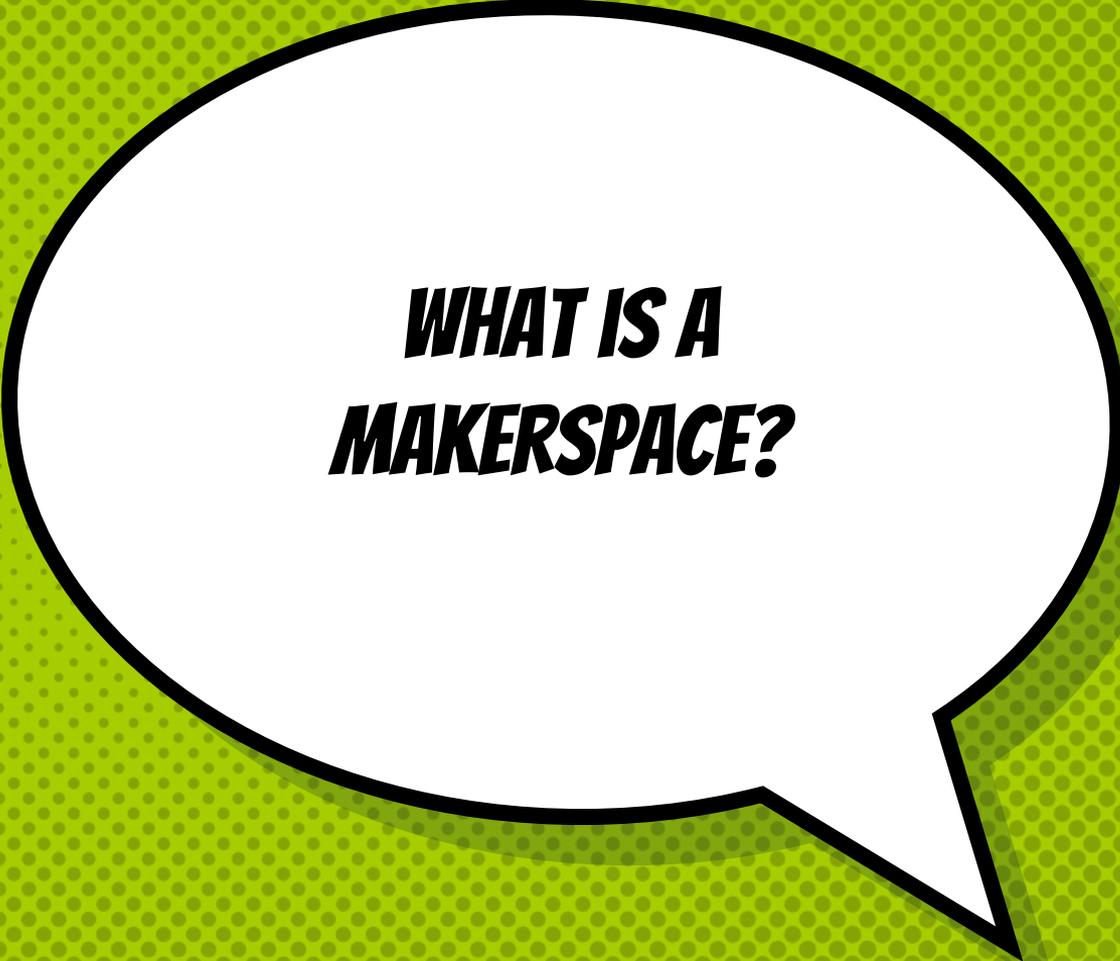


MAKERSPACES

Adnan Ezad, Barbara McCarty, Karen Cotter
October 22, 2017





***WHAT IS A
MAKERSPACE?***

ACCORDING TO THE NMC HORIZON REPORT 2017: K-12 EDITION:



is a physical environment that fosters opportunities for hands-on learning and creation, often enabled by emerging technologies.

***STILL NEED
MORE INFO?
WATCH THIS...***



ACCORDING TO THE NMC HORIZON REPORT 2017: K-12 EDITION:

**14X GROWTH IN
MAKERSPACES IN
THE LAST 10 YEARS**

**EUROPE IS HOME
TO NEARLY 40%
OF THE WORLD'S
MAKERSPACES**

**1,400
USER-REPORTED
ACTIVE SPACES
AROUND THE WORLD
AS OF 2016**



**MAKERS ARE
GENERALLY NOT
IN IT FOR THE
MONEY,
HOWEVER...**

**THE MAKER COMMUNITY
IS A COOPERATIVE MIX OF
CREATIVE AND TECHNICAL
PEOPLE, SUPPORTING EACH
OTHER TO SUCCEED**

**MAKERS SEEK
OUT
OPPORTUNITIES
TO LEARN**

WHAT MAKES A MAKER?

ACCORDING TO THE MAKERSPACE PLAYBOOK:

**MAKERS
SOMETIMES
START
BUSINESSES,
AND CELEBRATE
THAT**



**MAKERS BELIEVE
THAT EVERYONE IS
A MAKER AND OUR
WORLD IS WHAT
WE MAKE IT!**



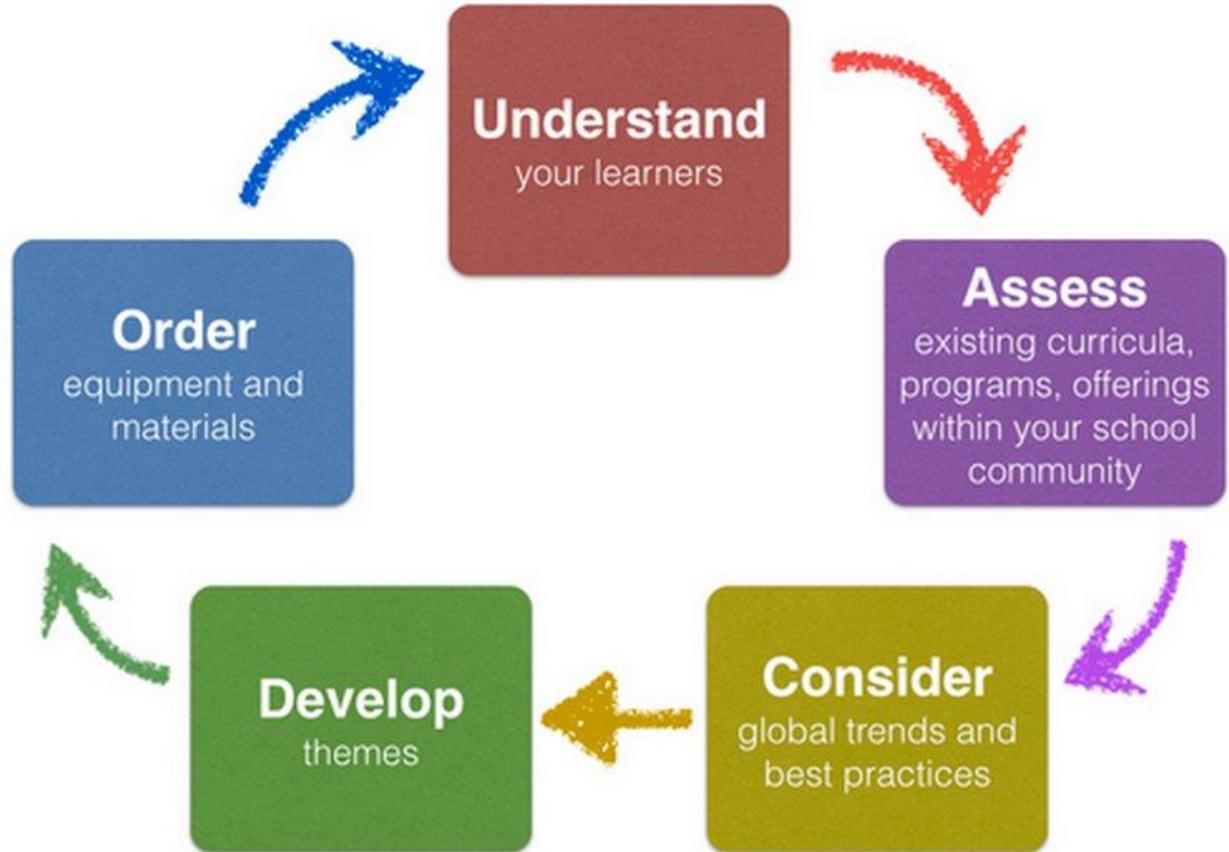
**STILL
UNSURE?
WATCH
THIS...**



**MAKERSPACES
COME IN MANY
DIFFERENT FORMS
DEPENDING ON THE
AUDIENCE, BUDGET,
FACILITY AND
PURPOSE.**

**THERE IS NO
ONE-SIZE-FITS-ALL
MODEL.**

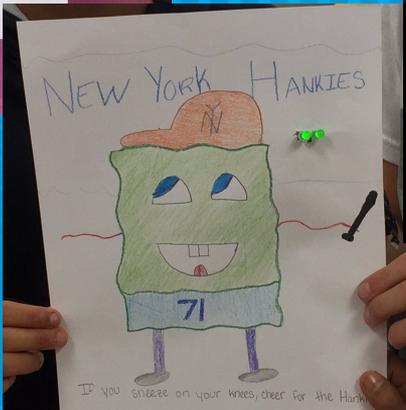
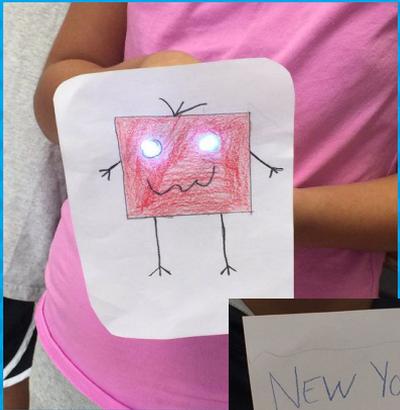
MAKERSPACE PLANNING





LAWRENCE INTERMEDIATE SCHOOL

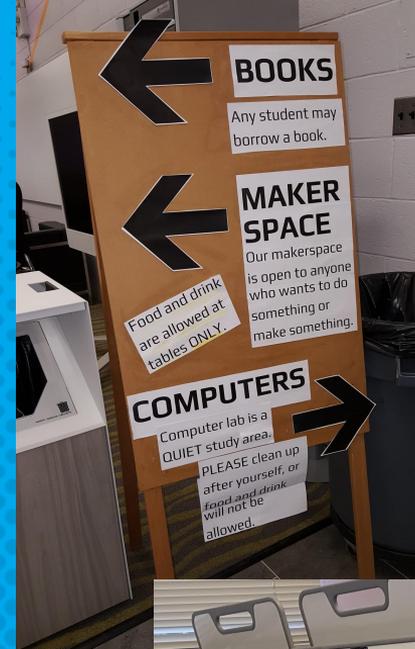
"LAUNCH LAB"



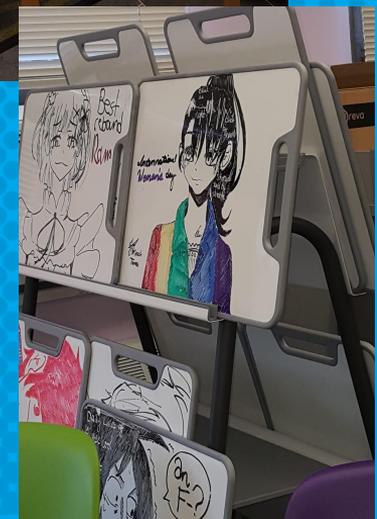


TIMBERLANE MIDDLE SCHOOL





NEW MILFORD HIGH SCHOOL



NEW MILFORD HIGH SCHOOL

WHAT DOES MAKING MEAN TO YOU?

***MAKING MEANS
PUTTING YOUR OWN
STORY INTO WHAT YOU
MAKE***

***MAKING MEANS THAT
YOU HAVE A MIND OF
YOUR OWN***

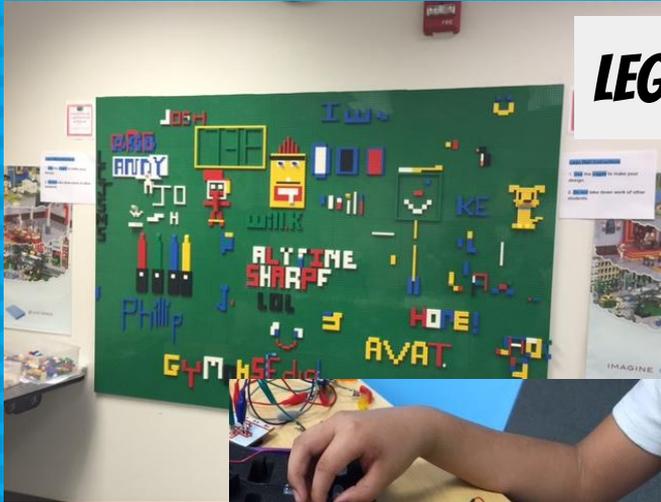
***MAKING IS SOMETHING
YOU ARE PROUD OF***

***AS A GIRL, MAKING
MEANS THAT YOU CAN
SHOW THAT YOU CAN
DO STUFF TOO***

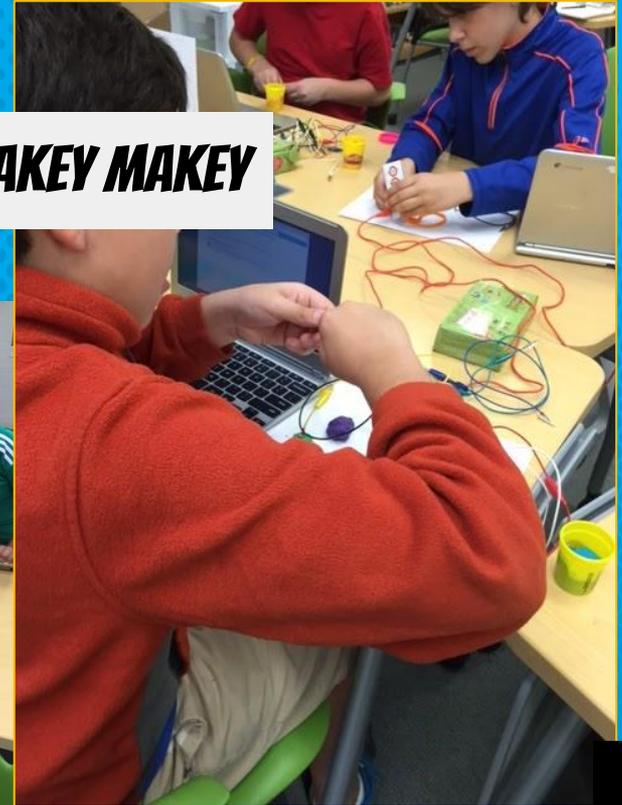
***MAKING MEANS TO
MAKE THINGS THAT
MAKE THE WORLD A
BETTER PLACE***

SAMPLE MAKERSPACES ACTIVITIES:

LCJSMS MAKER'S DAY 2017



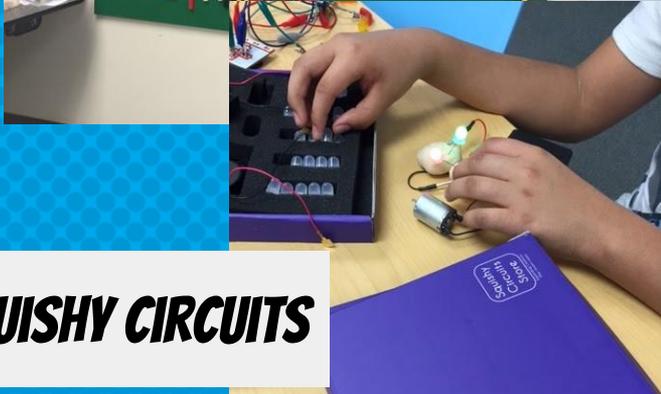
LEGO WALL



MAKEY MAKEY



LITTLE BITS



SQUISHY CIRCUITS



BENEFITS &



CHALLENGES



**TEACHES BASIC
PROBLEM
SOLVING SKILLS**

**ALLOWS, AND INSPIRES,
FURTHER INVESTIGATION
THROUGH TRIAL AND
ERROR WITH SUPPORT IN
FAILURE**

**STUDENTS ARE
ENGAGED IN
AUTHENTIC
EXPERIENCES**

BENEFITS OF MAKERSPACES

**GIVES STUDENTS
MORE CONTROL
THEY WORK TO
CREATE OR SOLVE A
PROBLEM**



**HANDS-ON LEARNING
EVOKES HIGHER LEVELS
OF THINKING IN
OPEN-ENDED QUESTIONS**

**ENGAGES
STUDENT MINDS
AND
ENCOURAGES
INQUIRY**

CHALLENGES

Students can become overwhelmed without direction and may need guidance to “unlock their creativity”

Schools do not think of it as an instructional tool

Isolation from curriculum could cause it to be a passing fad

Can be costly to replace consumables

Potentially need for more space and staff

***A LITTLE MORE ON
BENEFITS,
CHALLENGES, AND
INTEGRATING
CURRICULUM***



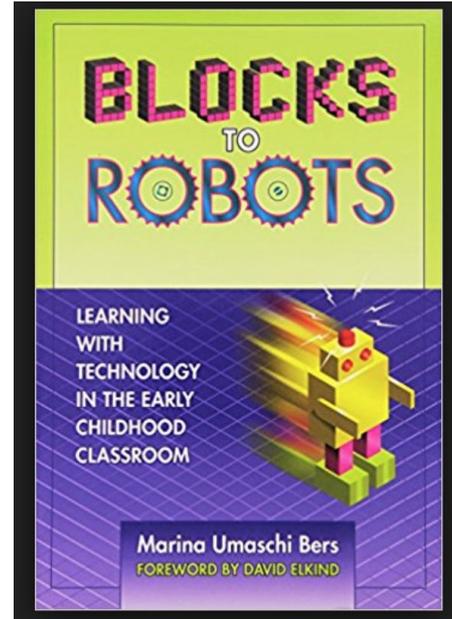
APPLICATIONS IN EDUCATIONAL SETTINGS

Including agenda for
future use.



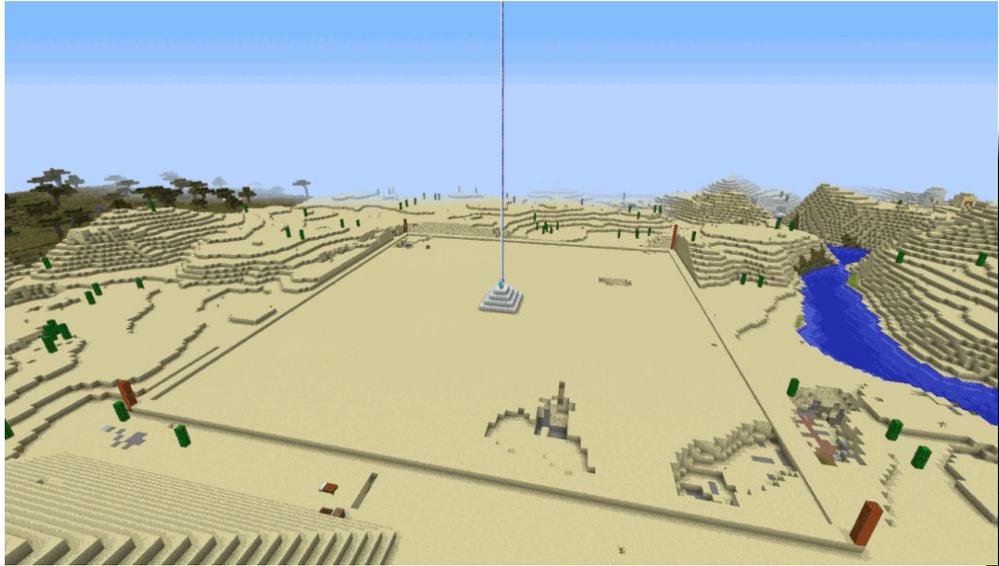
"INDEPENDENT LEARNING...

and discovery happen best when children can make, create, program, and design their own 'objects to think with' in a playful manner" (Bers, 2008, p. 4).



G-GMD B. VISUALIZE RELATIONSHIPS BETWEEN TWO-DIMENSIONAL AND THREE-DIMENSIONAL OBJECTS

“For...students...
abstraction is...very
much a struggle, so this
provides depth and
dimensions that they
would not otherwise gain
from a textbook”
(Cochran et al, 2016, p.
541).

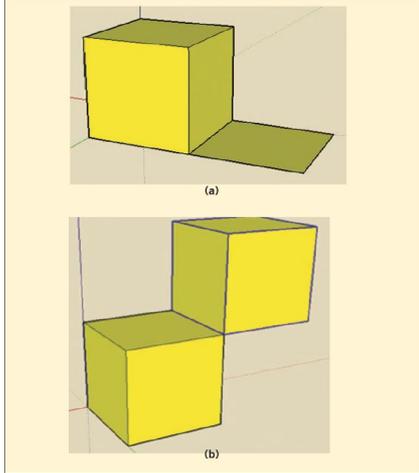


G-GMD B. VISUALIZE RELATIONSHIPS BETWEEN TWO-DIMENSIONAL AND THREE-DIMENSIONAL OBJECTS



MD. C. GEOMETRIC MEASUREMENT: UNDERSTAND CONCEPTS OF VOLUME AND RELATE VOLUME TO MULTIPLICATION AND TO ADDITION.

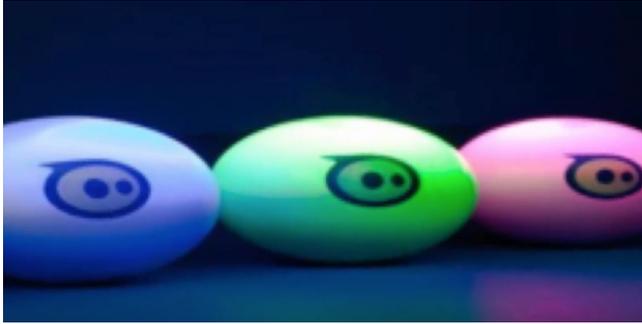
Fig. 2 Students learned that various designs that did not contain volume would not print.



“...students guessed that the printer would not attempt to print it or that “it might try printing, but it would be very weak and break off easily” because the connection between the parts, the one-dimensional line, had no volume” (Cochran et al, 2016, p. 538).



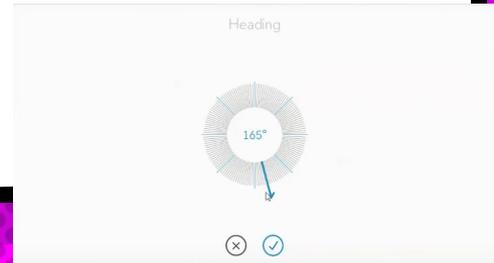
4.MD C.5



a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $1/360$ of a circle is called a “one-degree angle,” and can be used to measure angles.

On Start Program

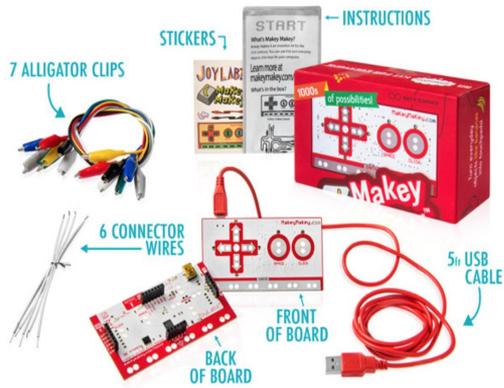
Roll	3s	38	90°
Roll	3s	34	180°
Roll	3s	33	270°



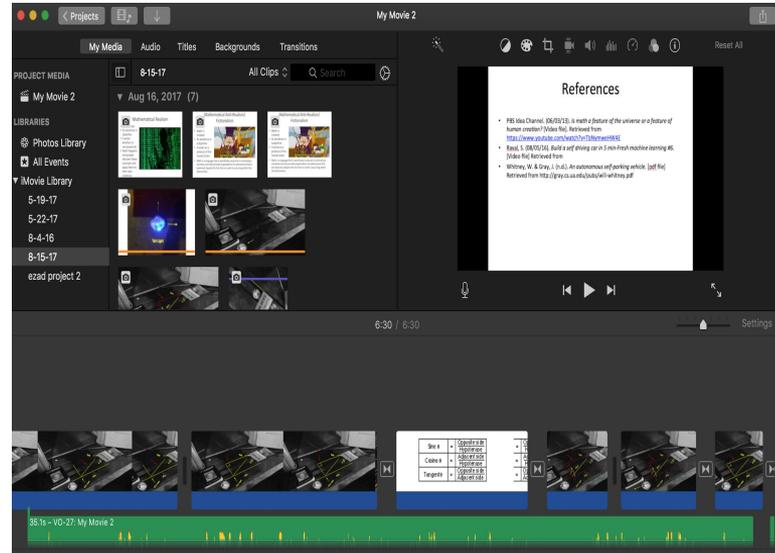
MAKEY MAKEY

4-PS3-2.

Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.



“The use of makerspaces for all types of academic disciplines should however be explored – ranging from “practical” disciplines to theoretical disciplines, and those with a strong combination of theory and practice such as LIS and communication science” (Fourie and Meyer, 2015, p. 521).





**WE ARE
ALL
MAKERS.**

INVENT
CREATE
DESIGN
LEARN
DREAM



THANKS!

We are looking forward to “chatting” with you
on the discussion board!

Adnan, Barbara & Karen



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