



MAKE A FRIEND BOARD
The Make a friend board is a board that will reward people for making other people feel special. The make a friend board will show that kids can make friends and be recognized more easily.

The girls wanted to add lights to their Make A Friend Board. Initially, they created a series circuit, but it did not light enough lights to honor new friendships and kindness. They optimized their design by switching to a parallel circuit.

Defining the Problem: "Needing more sense of community"

We are going to address the problems of "needing more sense of community" and this is our rationale (reasoning):

- Lots of bullying
- Lots of gossip
- Lots of people being left out

1. Kids Results

What are the top 3 problems kids identified?	What percentage of kids cared about this problem?	Why do you think this is a problem?
Need to be more fun	54.05	I think that when teachers teach we need it to be more fun.
Need to do more things as a class to make a difference	45.85	We
Need more chances to do something in person	40.54	

2. Adults Results

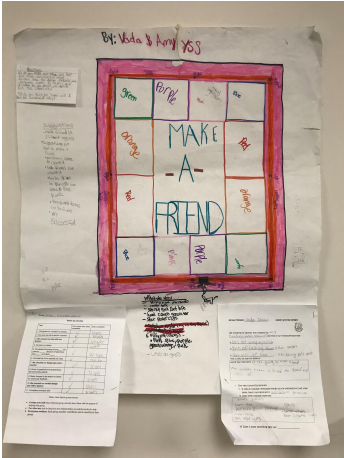
What are the top 3 problems adults identified?	What percentage of kids cared about this problem?	Why do you think this is a problem?
Need more sense of community	66.67	
Need to do more things as a class to make a difference	44.44	
Need more chances to do something in person	44.44	

3. Using the data above, what problem do you choose to fix?
Need to be more fun

Designing Solution: Make a Friend Board



Sketchup



Teacher and Students' Reflection on the Projects

Students'

Student: We named it "make a friend board."

Teacher: I like that name! How did you come up with it?

Student: Well, we thought that it wasn't fair that a lot of kids are left out, and that the ELL getting bullied and pushed around and nobody talks to them because they can't speak English. So we thought maybe if we made this people would start making more friends and we have these. These are the construction paper and we are going to have star paper clips and we are going to put on these, and when someone makes a friend, we're going to put these on the paperclips. It is going to say who made a friend and who their friend is, and it is going to have a handcrank, and when you twist it all of the lights will light up.

(...)

T: Could you put suggestions on how to make a friend. What if I am shy because I don't know how to make a friend...

Diane: We could write like, we could put suggestions around the board.

Victoria: Like take a risk and sit next to a new person at lunch, share your snack.

T: How many times do I get to crank it if I make a friend.

Victoria: We thought if you and Diane know each other, if you made her your friend. You would be able to crank but also A would be able to crank it. You both get to crank it together.

Teacher and Students' Reflection on the Projects

Teacher's

To make the MaF board they had to know about different energy sources and particular renewable ones, energy sources. They used the handcrank because they thought that would last longer than the other ones. They needed to know their purpose so they had to survey the school to learn more what was important. One of the things they thought was a problem in our school was getting to know people and meeting new people because we have a high population of immigrants and refugees. They wanted to reach out to new people and try to form friendships. This board celebrates that and when people meet a new friend that day and they can come and light up the board and they have these little coupons and they can put their names on it and put it around it and celebrate their friendship. They also took the time to go around to other classes to ask how to say friend in many different languages, so they have it in Arabic, Burmese, Swahili.

Make a Friend Board

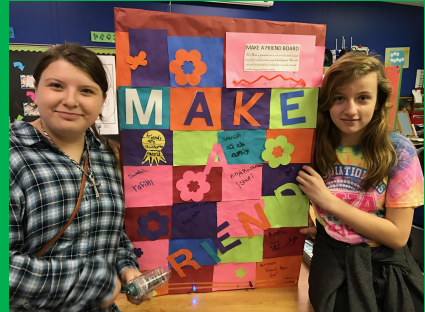
Story of the engineering invention:

We made this invention because people keep getting left out and some people are getting bullied.

We used the 2 LED lights and a hand crank generator. We also made this because people were getting left out from things like games and activities.

We first used a series then changed it to a parallel.

Ms. J said, "Your design is very cool and I have never seen a project like ours yet"



- About the engineers:

- Victoria is very nice and respectful.
- Diane is from another country.

- Materials:

Construction paper, led lights, copper tape, cardboard, hand crank generator

Reflection Rubric

1. What **knowledge** and **practices** did the students develop and use?
2. How were the students **recognized** for their expertise?
3. In what ways, did students have opportunities to take **action** in meaningful ways?
4. What outcomes were made possible by the combination of the students' knowledge/practices, recognition and action?

Write any questions you have that will help you teach this design cycle.