How Might We Create Items/Programs That Help Educate The Kids In Our Community?

By Michael E, Sienna P and Vivien O
Why we chose this project

- Vivien: I chose this project because I love playing around with different technologies and teaching other people things is something I really love to do. Also, I will be able to learn about different technologies and how they work, which is really important for the future.

- Sienna: I chose this question/project because 1. I love technology, and this project will hopefully help me grow with different types of tech. 2. I love helping others, so knowing at the end of the day that I have helped someone learn something is great.

- Michael: This project is worthwhile for me because I will be able to apply my knowledge of technology to this project. This is also worthwhile for me because I will be able to learn how to get along and work with others in a group.
The impact our project has had

We think wider community or school community because it will be on the internet so people can look at it pretty much anywhere and learn the stuff. Also, school community because we will be showing people what we have done at the expo.
What challenges did we face and how did we overcome them?

One of the challenges was the 3D printing malfunctioning and breaking while we were printing one of our items. We overcame this by sitting it out and waiting for the 3D printer to be fixed before we tried again, and the second time it worked! Another one of the challenges we faced was Michael was having trouble with game and we were running out of time to finish it. But Michael and his Dad fixed and figured it out and finished it.
‘Brain UP!!!’ (Michael’s game) code

Here are some photo’s of the all the different stages, plans, successes and fails in the game Brain Up!!
'Brain UP!!!(Michael’s game)

explanation

The game that I made uses two 3d printed blocks that have the words true and false on them. When they start the game it will ask series of true and false questions. The 3d printed blocks will be in front of the player and they need to hit either the true or false block to submit their answer. The questions will keep on asking until the 60 second timer is complete.

What happened while making the game:

My original idea for the game was to ask kids questions that are either true or false involving maths, spelling, reading and other subjects. But as I started to make the game I realised that it would take a long time to make and that I don’t have time on my side either. So I cut down just to maths and kept going. Then I was struck with another obstacle, I was getting to confused with my code and what I wanted to do. Even my teacher Mr Speranza was getting confused as well. After a while Mr S and I came up with a solution. Or so we thought. Symbols and questions kept coming up when they weren’t supposed to and it was all just getting muddled up.
‘Brain UP!!!’ (Michael’s game) 
explanation continued

I only had two weeks left before the expo and I was getting worried so I tried to make another game based on my original one. And you’ve probably guessed what happened then. And your right another problem happened, I started using new code that I hadn’t used before and I didn’t know how to use it and the tutorials weren’t making sense. Now there was only one week left and I hadn’t even finished yet! Then my Dad asked me how I was going with my work and I told him that I was stuck and that I didn’t know what to do. He then asked if he could see the original version of my game so I showed it to him and explained the problem. He just sat there and looked at the screen and code then he got a piece of paper and started drawing up a how to fix my problem. Then after the weekend Dad and I finally finished my game finally.
3D Printing 1st Time

For our project we had to 3d print two blocks for a game Michael was working on. They were supposed to look like the blocks in the right. But they turned out like this.
3D printing 2nd time

After many fails finally our designs were printed!

We made our designs smaller for the print so we could see how they looked. Now we have to print them bigger. These buttons are going to be part of Michael’s game that he created.
3D printing 3rd time

Vivien 3D printed some letter blocks that we are going to use to help some Preps with their reading and spelling. For example, if we wanted to spell cat, we would write out on a piece of paper C_T, and then they would have to find the correct letter to put in the space. This is our idea for now anyway. Here are some pictures of the letter blocks we made.

One of the blocks has rounded corners, and one doesn’t. We are also thinking of making a disc with the letter sticking out instead of going in.
3D printing 4th time

We also printed a tester letter disc that we are going to use for a spelling game. It is only our tester, so next time we will made it smaller so it is easier to use.

There are a few small holes in the disc that will hopefully not happen next time, and we think the letter ‘A’ should be bigger.
3D printing 5th time

When we were trying to 3D print the letter discs, the 3D printer malfunctioned halfway through, and the discs ended up as a big lump of plastic!

You can still kind of see the outlines of what the discs would of been!
3D printing 6th time

These are the letter discs that we 3D printed for the spelling game. For some reason the A turned out bigger than all of the other letters, but we will still be able to use it for the game.

There is also a little token we are going to use for our board game.
Spelling Game

We are going to make a spelling game with the vowel letter discs that we are 3D printing. There are going to be 3 different levels in the game, and here is the descriptions of them:

Level 1 - 2 or 3 letter words, with one letter missing from the word (that you have to fill in). You get 1 point for each word you get right.

Level 2 - Words with over 3 letters, with one letter missing. You get 2 points for every word you get right.

Level 3 - Words with any amount of letters, but with 2 or 3 letters missing. You get 3 points for every word you get right.

You can get a maximum of 100 points for the whole game, and we are thinking of testing it on our Prep buddies.
Spelling Game Words

Here is the list of words we are going to use for the game.

These words are based on the MIOOW words, which are the first words a child normally learns.

With our game, once they put the disc into the blank space in the word, we will probably get them to right the word on the back, just to make sure they know it.

Also, the underlined letter is the one that is going to be blank, so it’s the letter the Preps will have to put in themselves.
Interviewing our buddy after the game

Alicia’s Score: 23/58 points
Q. Was it fun?
Alicia: Yes
Q. Was it hard?
Alicia: Yes
Q. What was your favourite part?
Alicia: When I put the letters in.
Platforms we used

Scratch is the coding website that Michael used to make a game for our project. When you put certain code blocks in a certain order, it can make things happen, e.g. Make a character move, make a noise or make the screen change colours. It makes coding really easy and fun!

Tinkercad is a platform that you can design objects to be then 3d printed. It is fun to use and you can make awesome things using it. Last year someone used it to make a robot!
Special thanks to Mr Speranza!!
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