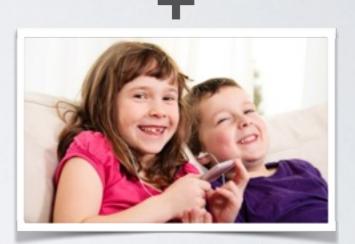
PLAYBRUSH

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PREMISE

- Brushing teeth is boring and uninteresting
- Children need extra motivation
- Gamify!
 - More fun and engaging
 - Indirectly teaches how to brush properly







THE GAME

- Brushing your teeth kills tooth baddies in the game
- In theory there can be many different games
 - The brush is just a stick with some sensors (a game controller of sort)
- Vibration can be used as a feedback mechanic from the game to the brush
- Use openFramework (or HAXE) to make the game
 - First prototype is done for Mac
 - The final target platform is an iPhone (also maybe Android)

SENSORS / COMPONENTS

- · Uses accelerometer to detect how fast and much you're shaking the brush
 - Memsic 2125, http://arduino.cc/en/Tutorial/Memsic2125
 - Number of strokes or amount of accumulated movement
- Gyroscope to detect the orientation of the brush
 - Sparkfun IXZ-500 breakout, http://wiring.org.co/learning/basics/gyroixz500.html
 - · Used to see what part of mouth is being brushed
 - · Calibration in done when resting on a stand
- Bluetooth to transmit brushing data to a phone (or computer)
 - Sparkfun Bluetooth Mate Silver, https://learn.sparkfun.com/tutorials/using-the-bluesmirf
 - Pairing Arduino+BT on Mac, http://www.rioleo.org/setting-up-the-arduino-pro-mini-and-bluetooth-mate-on-mac.php
- · Vibration motor to give feedback from the game to the controller
 - http://www.instructables.com/id/Robot-Snake/step5/Add-vibration-motor/
- · Pressure sensor, or bend sensor to detect how hard or light you're brushing
 - Force you apply when brushing (not too gently and not too hard)

FIRST PROTOTYPE

- Part of first prototype
 - Accelerometer and gyro to detect movement and get some data
 - The first prototype shows how this kind of data transmitted over BT can be used to control a game
 - Very simple game that runs on mac
 - Vibration feedback
- Not part of first prototype
 - · Pressure/flex sensor, complex gameplay, a phone

OTHER STUFF

Only the head of the toothbrush is replaceable

