Our team was stuck at home
No school.
No playdates.
No end in sight.

That's when we thought of the “Toothbrush of the Future!”

We wanted a way to KNOW if we had a virus.

Just brush your teeth and our toothbrush uses sensors to look for viruses like COVID or the flu in your saliva.

Was there something we ALL did every day that could help us test for viruses?

It talks to your doctors!

Watch how we made our idea come to life at: tinyurl.com/ExploraToothbrush
DOES IT STILL HELP YOUR TEETH?

We Researched Toothbrushes

- **History of the Toothbrush**
  - 3000 BC: Chew Stick
  - Earliest known brush: Bear Hair Brush (made in China)
  - 1938: 1st Modern Nylon Toothbrush (made popular by soldiers)
  - 1960s: Electric Toothbrush

We Decided it could look for COVID and CAVITIES!

And print braces, retainers & mouthguards with an added 3D-printer

Our model of the 3D-printer!
HOW DOES OUR TOOTHBRUSH WORK?

Sensors to Spot Issues
Sensors and cameras detect things like temperature, cavities, and viruses. Saliva is collected in special traps for testing by our toothbrush's CPU (that's the brain of our toothbrush!).

CPU (with A.I.) to Identify Problems
A.I., or artificial intelligence, is a program that helps the computer learn. If a computer saw a picture of a dog, it would not know it was a dog without A.I. But a computer with A.I. can learn which pictures are dogs! Our toothbrush's A.I. can learn to spot cavities and diseases.

WiFi to talk to our Doctors
Our toothbrush talks to our doctors and dentists through a wireless connection to the internet. The information travels on radio waves. Doctors and dentists can even talk back to our toothbrush--telling it what special tests to run.

3D-Printer to Print Retainers
The camera in the toothbrush sends pictures to the CPU. The CPU uses a CAD program to make a blueprint and sends that to the 3D-printer. The printer prints layer by layer until the braces, retainers, or mouthguard are done!