Project Name: Go baby Go Car

Big Idea: Inclusive Design

Essential Question: How can engineering and technology create inclusive play experiences for children with mobility challenges?

Team Members: Andre F, David G, Muhammad H, Said M, Grant T, Garrett T, and Amethyst W.

School/Organization Name: Dove Virtual Academy

Location : Warr Acres, Oklahoma, USA

Big Idea

Accessibility and Inclusion
Every child deserves equal access to play, independence, and joy — regardless of mobility challenges.

The Challenge

Most ride-on toy cars require foot pedal operation. Some children cannot use their legs to drive independently.

How can we redesign a toy car to meet the specific needs of a child with mobility challenges?

Why This Matters

Play builds:

- Confidence
- Independence
- Social connection
- Emotional development

Inclusion should not be optional.

Understanding the User

We designed for a child who:

- Could not operate a foot pedal
- Needed safe, controlled driving
- Required alternative access methods

We researched:

- Adaptive mobility devices
- Simple circuit modifications
- Remote safety systems

Engineering Plan

We mapped:

- Electrical rewiring
- Steering wheel modification
- Safety override system

Students used:

- Circuit design
- Wiring diagrams
- Problem solving cycles
- Prototype testing

Our Solution

We modified a battery powered ride-on car to allow hand-based driving.

Modifications Made

- Rewired the pedal system
- Installed push-button control on steering wheel
- Enabled hand-based acceleration
- Programmed remote safety control

Technology Used

- Electrical circuits
- Remote programming
- Adaptive design principles
- Iterative testing

We used and applied real-world engineering skills into our project.

Impact

The child can now:

- Drive independently
- Experience freedom
- Participate in play like other children

Students gained:

- STEM application experience
- Empathy-driven design skills
- Community leadership experience

Measurable Results

Functional hand-operated vehicle

Safe remote override system

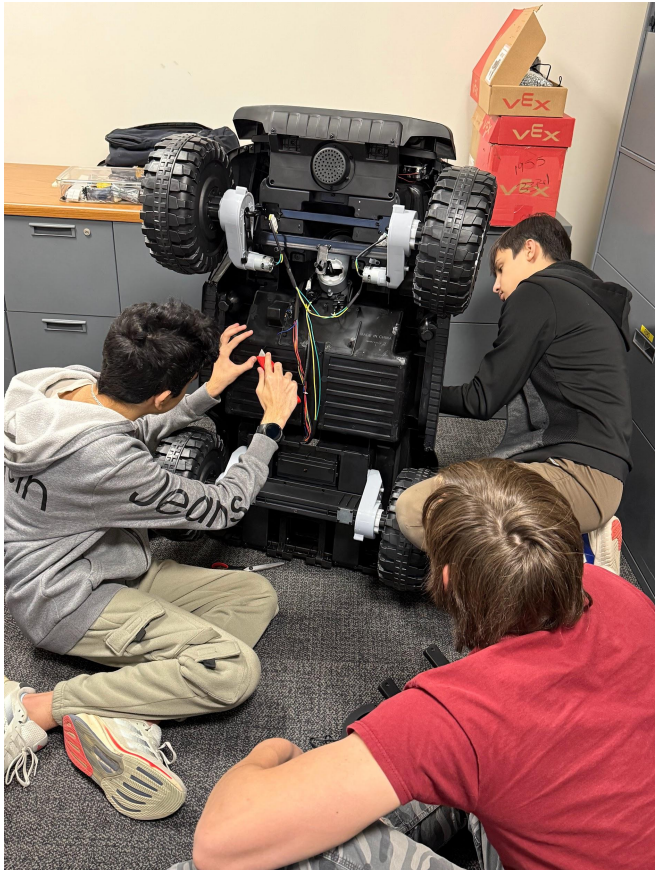
Increased independence for user

Delivering the Car Video from OU Hospital

NEXT LEVEL INNOVATION - Our Next Challenge

Our next build is more complex.

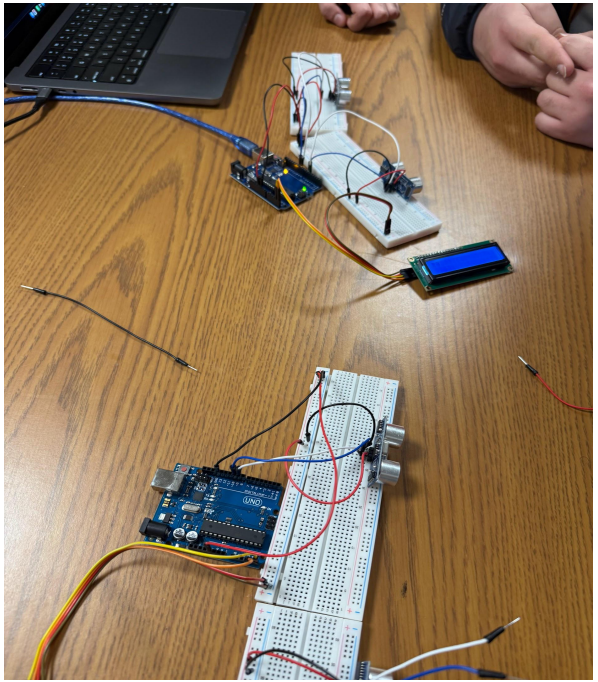
The child we are designing for has more significant mobility limitations.



Sensor Based Driving

We are developing a system that will:

- Use motion sensors
- Detect head movement
- Convert motion into steering and acceleration
- Maintain safety override controls



This will allow driving through head movement.

This pushes our students into advanced adaptive engineering and sensor integration.

Reflection + Future Vision

What We Learned

- Engineering starts with empathy
- Accessibility requires customization
- Inclusion is designed, not assumed
- STEM can transform lives

Closing

DriveAbility proves that innovation + compassion creates freedom.

“Ride Without Limits, Engineering with heart”