Alternative Access:

Building a Robotics Program in an Alternative School

Dr. Pedro Albizu Campos High School

Alternative Schools Network

Instituto Abayarde Robotics Program

Instituto Abayarde, a 21st CCLC program

The teachers: Corinna Christman and Diamond Montana

The students: Tony Williams, Christian Botello, and Jessica Morales

The Site Coordinator: Rodolfo Gonzalez

The Program Director: Michael Hannan

A Gumdrop Challenge

A Gumdrop Challenge

THE GOAL: Build a pedestal to display a ball

THE RULES:

No more than 75 toothpicks

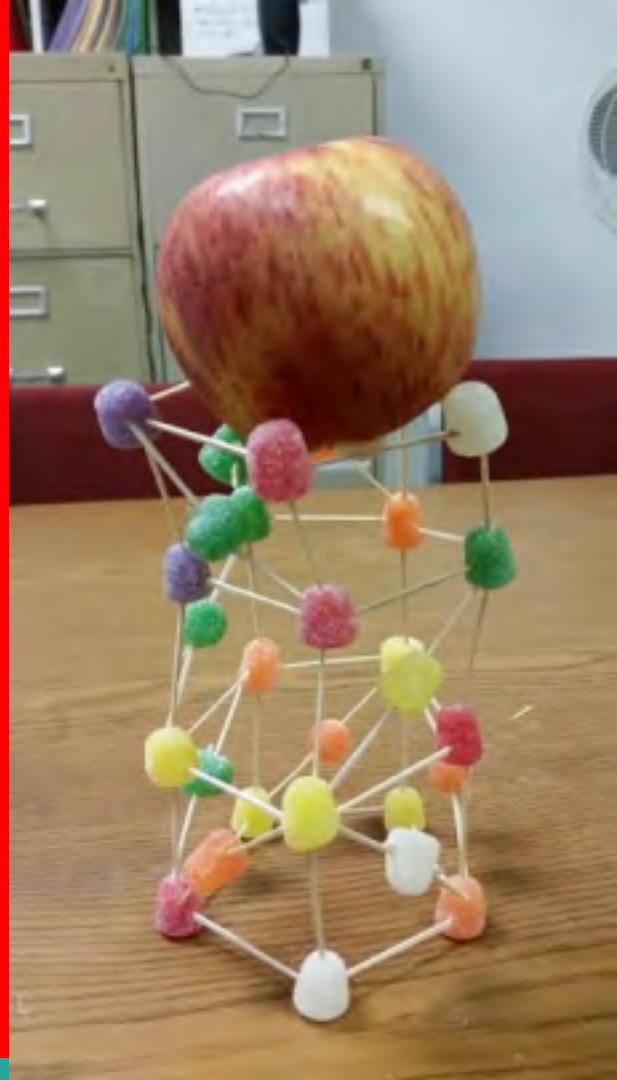
No more than 50 gumdrops

Must support the ball for at least 30 seconds

The tallest stable pedestal wins

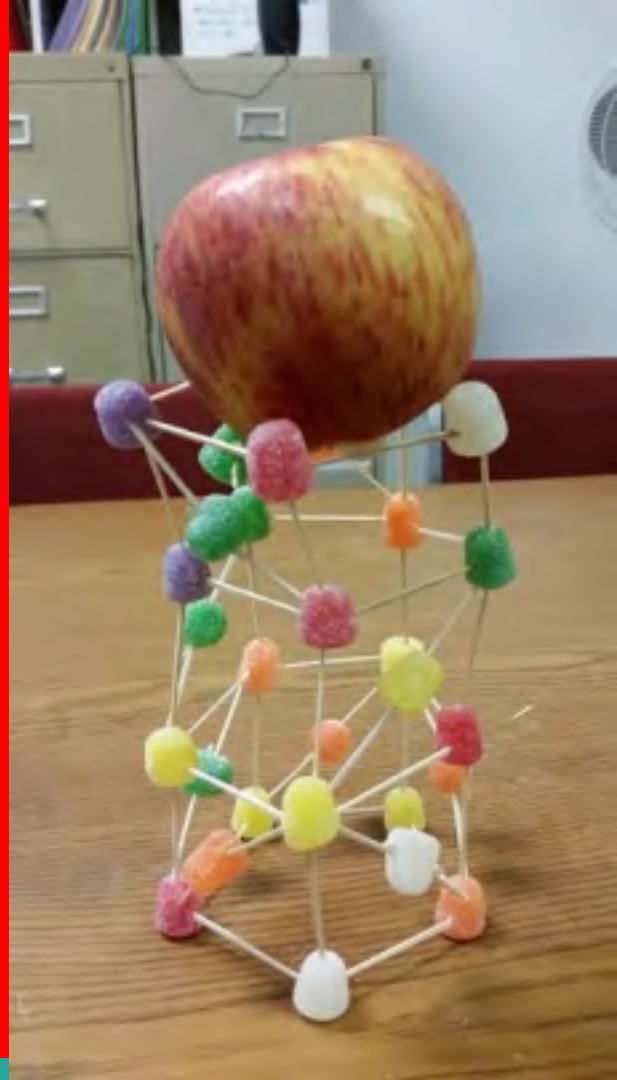
<u>WINNER GETS TO DRIVE THE STUDENTS' ROBOT</u>

Why should I care about gumdrop engineering and robots?



What students like...

- Hands on
- Teamwork
- Collaborative atmosphere
- Discussion and debate
- Tech experience
- Working toward a goal
- Passionate instructors
- It’s fun



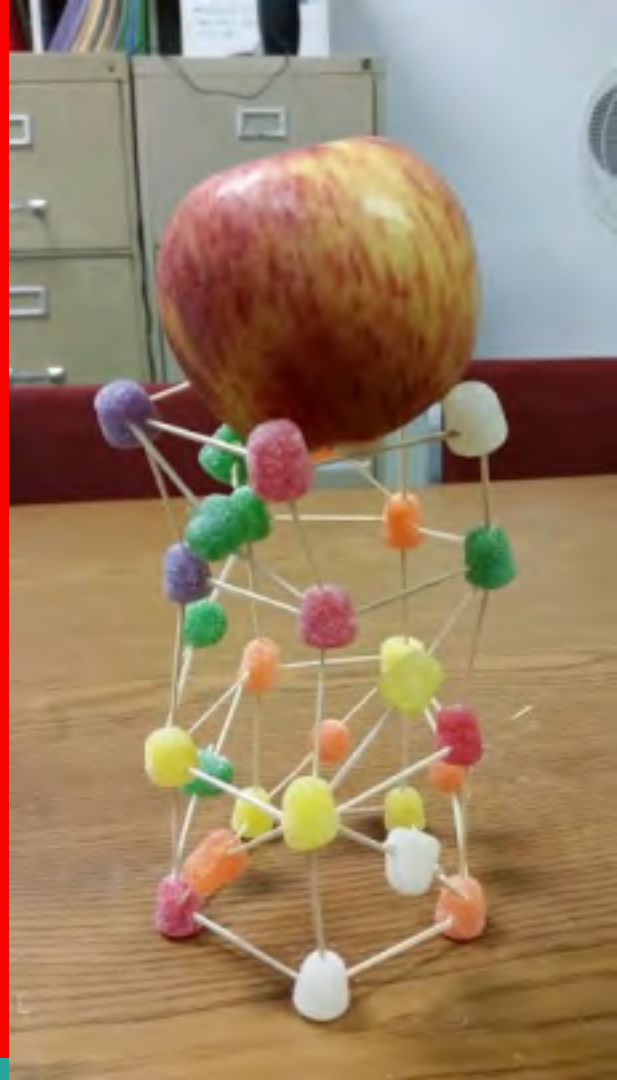
21st Century Skills

Learning Skills	Literacy Skills	Life Skills
Critical Thinking	Information Literacy	Flexibility
Creative Thinking	Media Literacy	Initiative
Collaborating	Technology Literacy	Social Skills
Communicatin	Productivity	Leadership

- See more at: https://k12.thoughtfullearning.com/FAQ/what-are-21st-century-skills#sthash.vFaTslNG.dpuf

Next Generation Science Standards

- defining the problem
- developing possible solutions
- improving designs.



Alternative Schools Network

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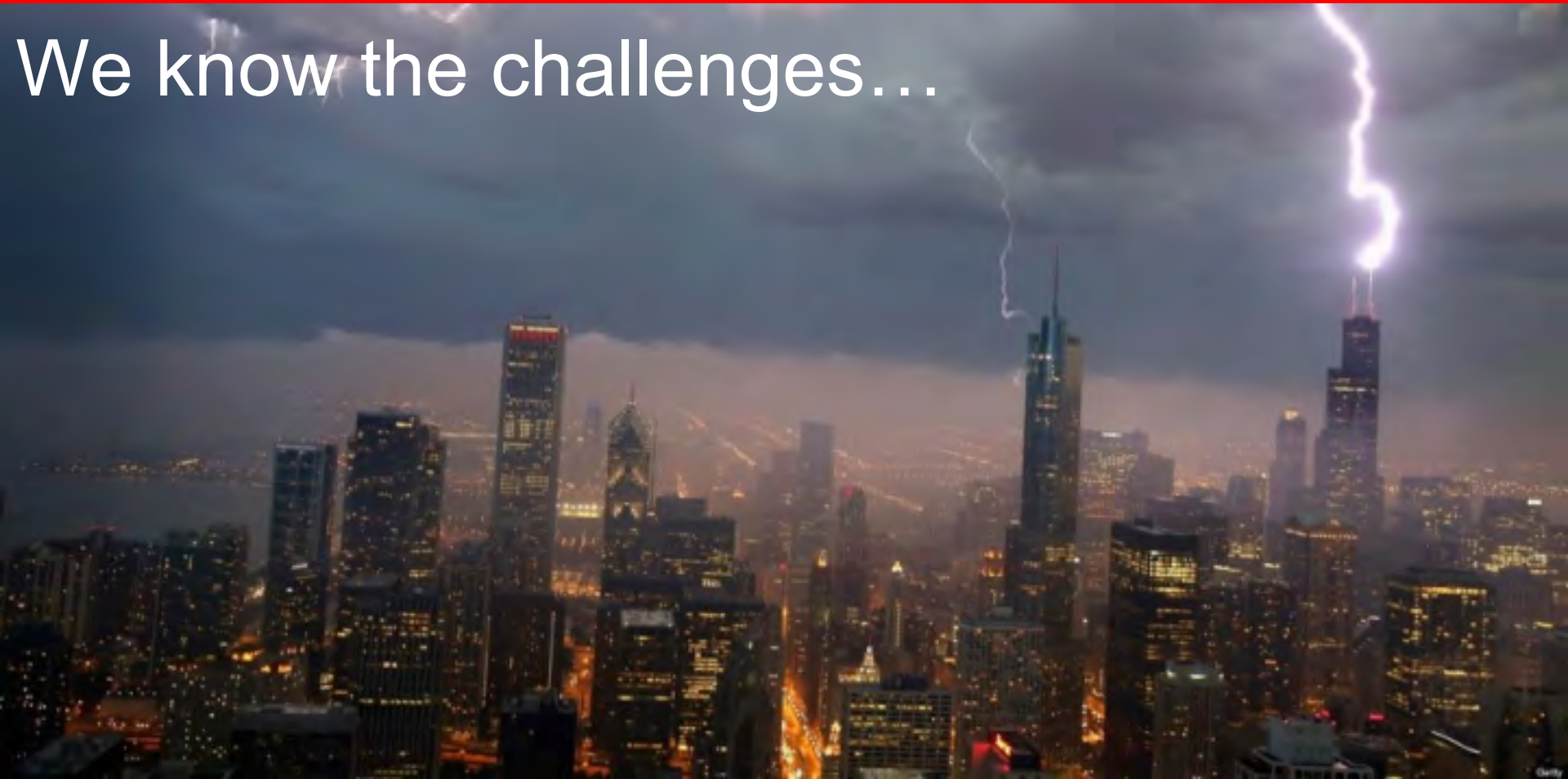
- Partner to 24 schools across chicago
  - Resource development
  - Technical assistance and training
  - Advocacy
- 150 - 300 RE-enrolled out-of-school youth
- Mentorship, social-emotional support programs
- Out-of-school time programming

What is an alternative school student?

Alternative Schools Network

We know the challenges…



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But what about the possibilities?

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Founded in 1972

Dropout rate of 71%

Chicago's West Town/Humboldt Park Neighborhood

1972: 20 students, church basement

Today: 185 students

Dr. Pedro Albizu Campos High School

MISSION: Provide a quality educational experience that empowers students to engage in critical thinking and social transformation, from the classroom to the Puerto Rican community, based on the philosophical foundation of self-determination, a methodology of self-actualization and an ethics of self-reliance.

Motto “La educación rompe las cadenas”

Education breaks chains.

Dr. Pedro Albizu Campos High School

Robotics comes to PACHS!

A passionate teacher: Curious, active, learning

A 21st CCLC program opportunity--ASN

A partner: Center for College Access and Success

Student survey, student interest

Time, persistence, and patience

Defining the problem

Defining the problem

Students work together to identify the goals and challenges for the project.

Developing possible solutions

Devoloping possible solutions

Students work independently—individually and in teams—to research solutions to the challenge…

Improving designs

Improving designs

Students continuously use trial and error, debate and research to improve their robots.

Always a work in progress…

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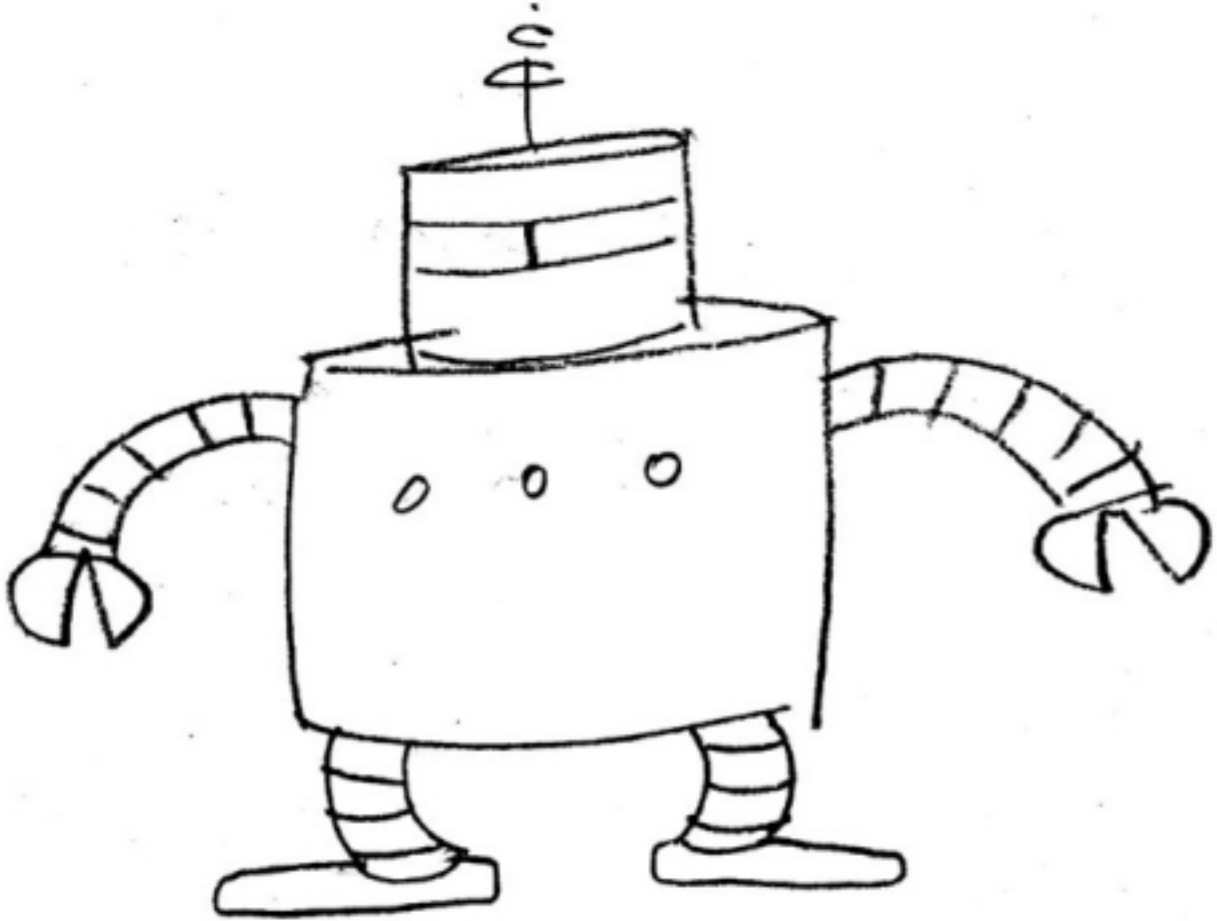
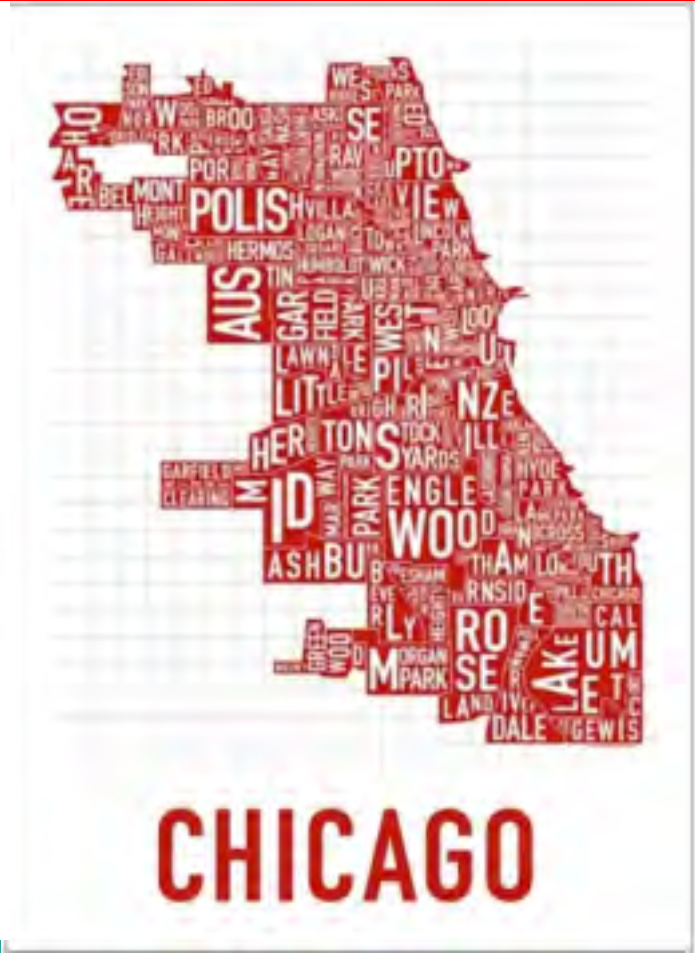
Always a work in progress…

What’s next?




POLIS
AUS
LITTLE
HERMOSA
ENGLE
WOOD
ASHBURN
ROSELAND
LAKE
CHICAGO

What's next?

- Seeking additional funds to replicate
- Working with NEIU to develop funded collaborations
- Looking for hands-on programming models
- Seeking instructors that can lead this learning