

Learning *with* Technology



Preparing the Workforce for
the Modern Workplace

What content, skills,
& habits should all
students master?



Chattanooga



Chattanooga



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ooga



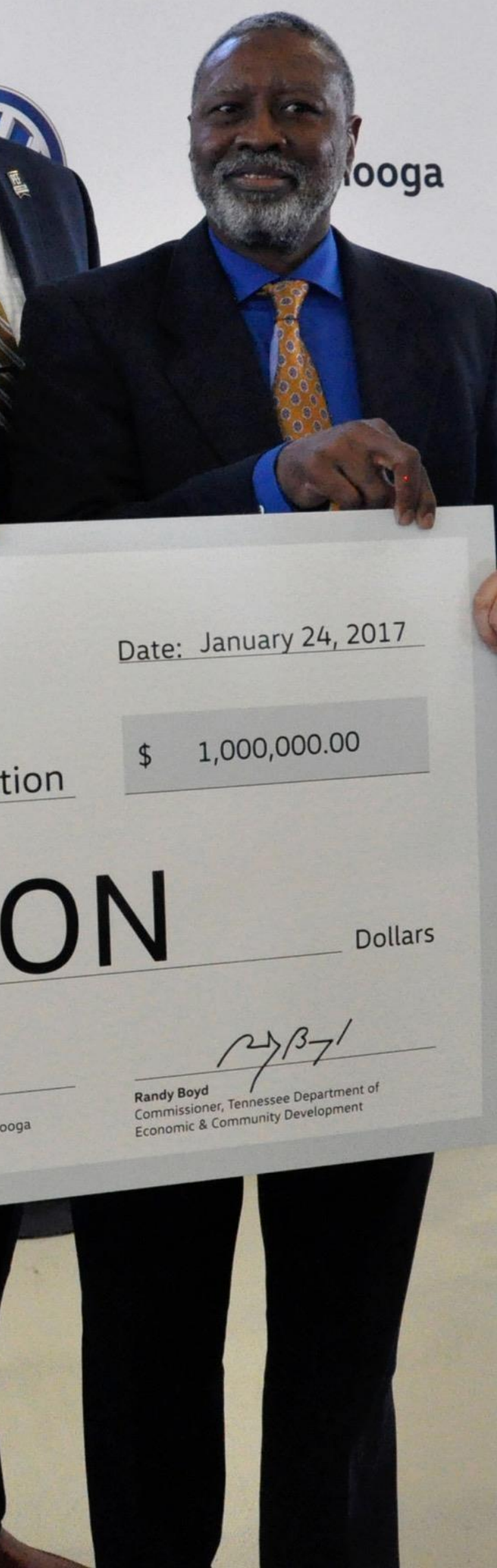
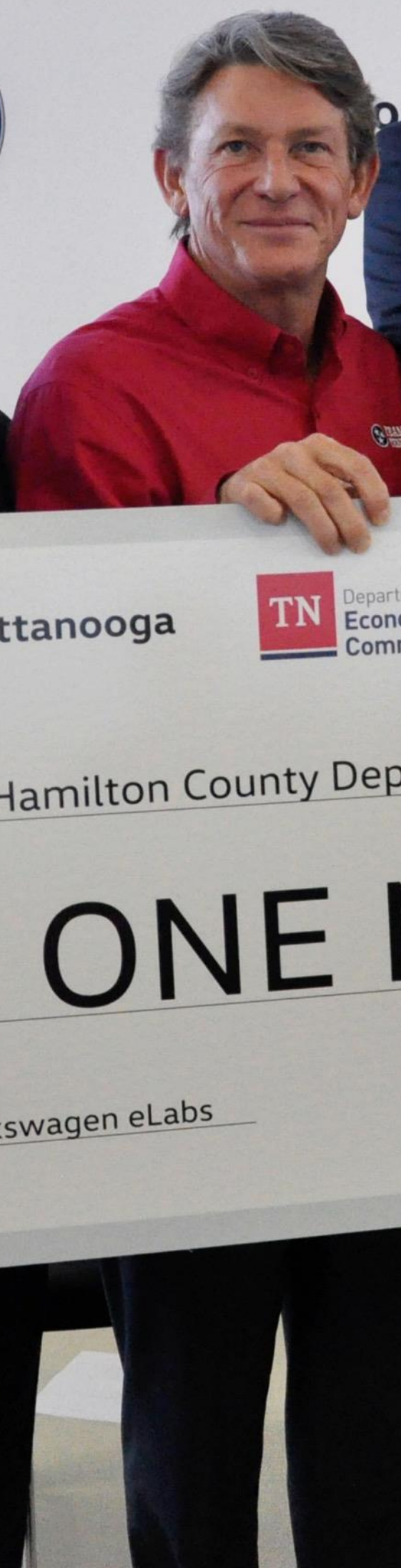
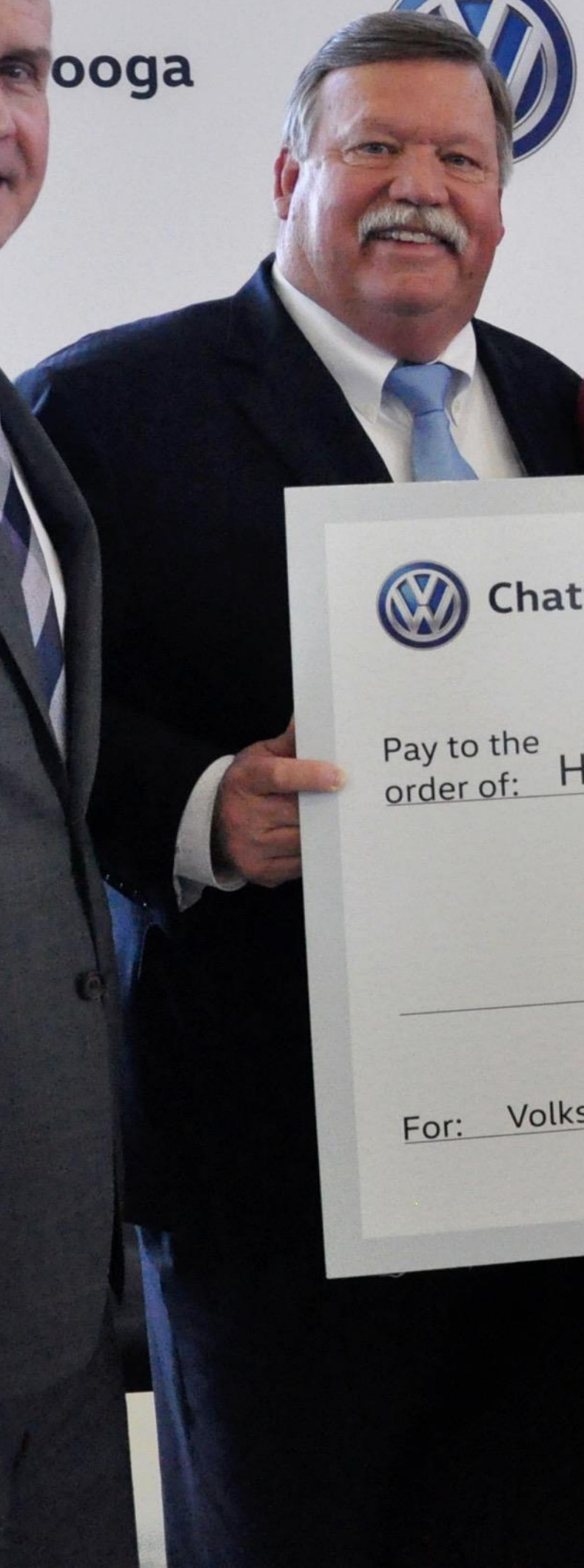
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eLab

IN PARTNERSHIP WITH THE STATE OF TENNESSEE

TOP OF THE WORLD

HAMILTON COUNTY BECOMES GLOBAL LEADER IN FABRICATION LABS, AND IT AIMS TO ADD MORE

[+1 more](#) BY MEGHAN MANGRUM | STAFF WRITER

Walter Rice has created a lot of things in Dalewood Middle School's Volkswagen eLab.

The eighth grader has worked with his classmates to program tabletop robots, design and build electric race cars and print and sell Dalewood school spirit apparel and accessories.

His favorite project was a solar-paneled boat he made using the digital fabrication lab's 3-D printer, CNC router and other

supplies.

"Anything that you can think of that you want to build or create, we have the tools here in the

that can trace designs and cut wood and more.

Hamilton County was recognized Wednesday as a world

Hamilton County was recognized as a global leader in digital fabrication education...

clude state-of-the-art technology and tools like 3-D printers, vinyl or laser cutters, routers

crease if the school board approves a \$5.7 million budget amendment at Thursday's



Dalewood Middle School student Walter Rice explains the development of different vehicles in the school's Fab Lab. Below: Sherry Lassiter, president and CEO of the Fab Foundation at MIT, recognizes Hamilton County Schools as a leader in digital fabrication education. See a gallery of images on timesfreepress.com.



their lives and they are inspired and empowered to create their own inventions."

Since the labs were launched schools have used them in different ways during the school day and the community and the Public Education Foundation have leveraged them through bigger partnerships. The foundation has hosted the Chattanooga Fabrication Institute for educators across the country for two years in a row, students use the labs to build electric cars through the Chattanooga Green Prix program and students have even worked

Dalewood Middle School student Walter Rice explains the development of different vehicles in the school's Fab Lab. Below: Sherry Lassiter, president and CEO of the Fab Foundation at MIT, recognizes Hamilton County Schools as a leader in digital fabrication education. See a gallery of images on timesfreepress.com.

school board meeting.

Superintendent Bryan Johnson

STEM School

Chattanooga



What should we focus on to ensure
our graduates are employable?

**0 out of 100 industry leaders
polled identified a particular
content area as a focal point**

Industry Wants Process Skills

Innovation

Critical Thinking

Collaboration

Scaffolding Process Skills

	Innovation	Critical Thinking	Collaboration
12th	Invent	Expert Knowledge	Networking
11th	Desirability	Prototyping	Time Management
10th	Failure Redefined	Evaluation	Peer Accountability
9th	Originality	Personal Ownership	Diversity

The New Problem





OFFICIAL MEMBER OF THE

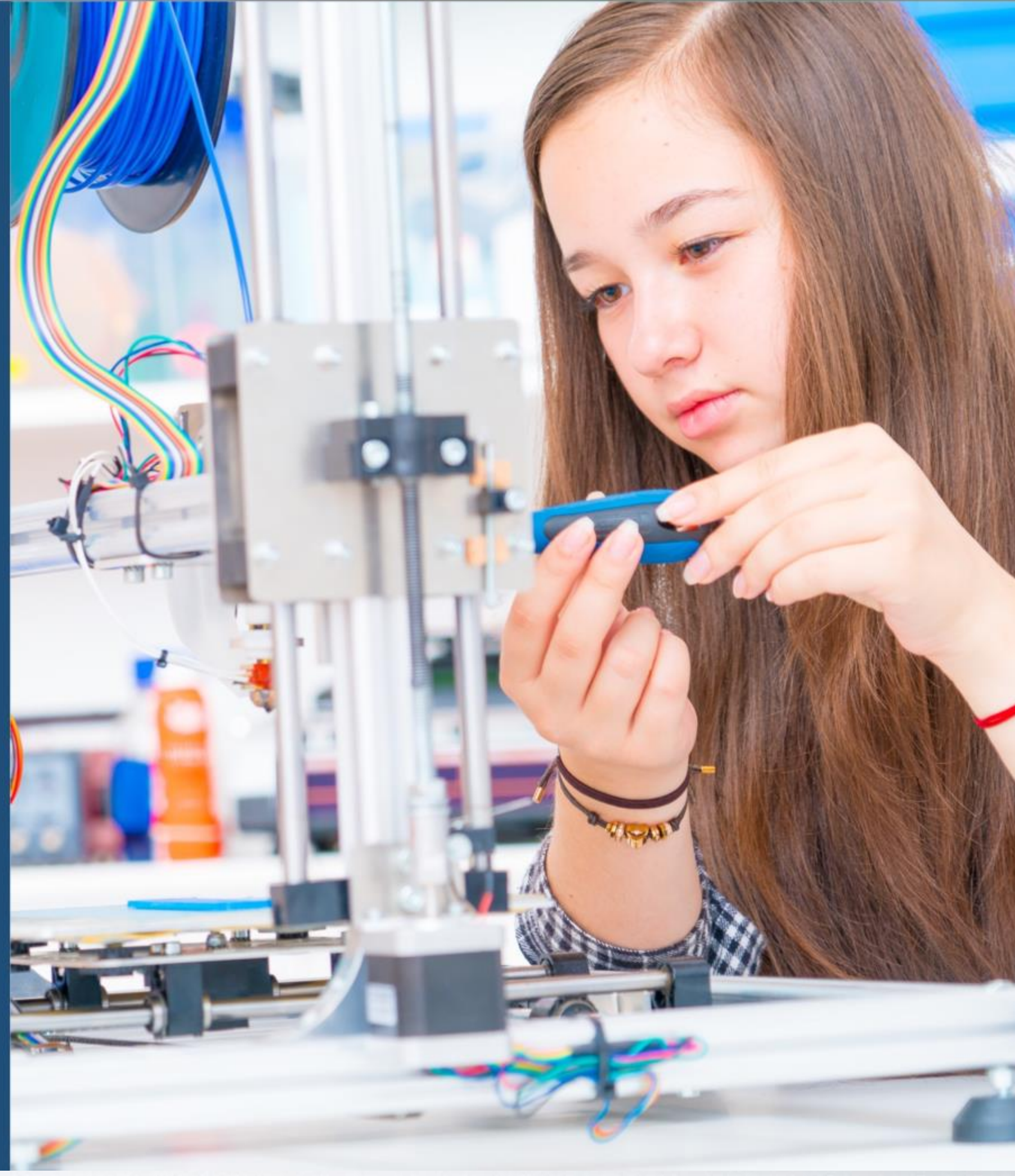
FABLAB

INTERNATIONAL NETWORK

Digital Fabrication

Using computer-controlled tools to empower students to create functional solutions to authentic problems.

Empower students as adaptive problem solvers skilled in **collaboration, critical thinking, creativity, and communication.**

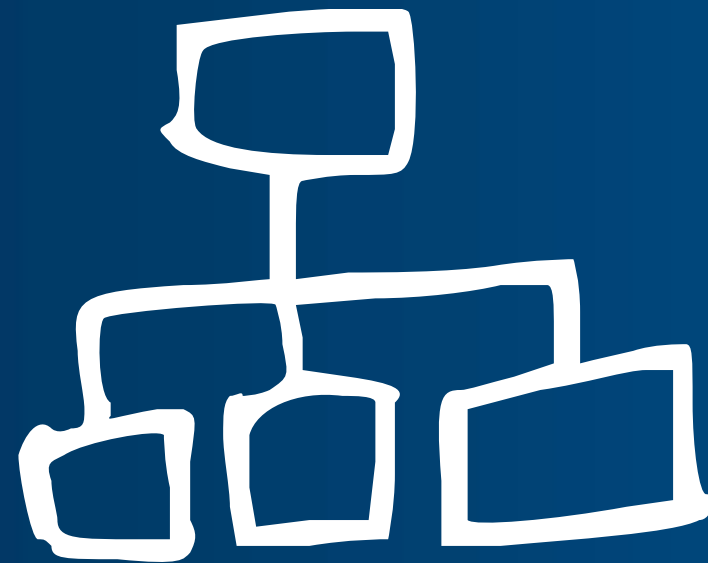




Identify a
Model



Articulate the
Core Values



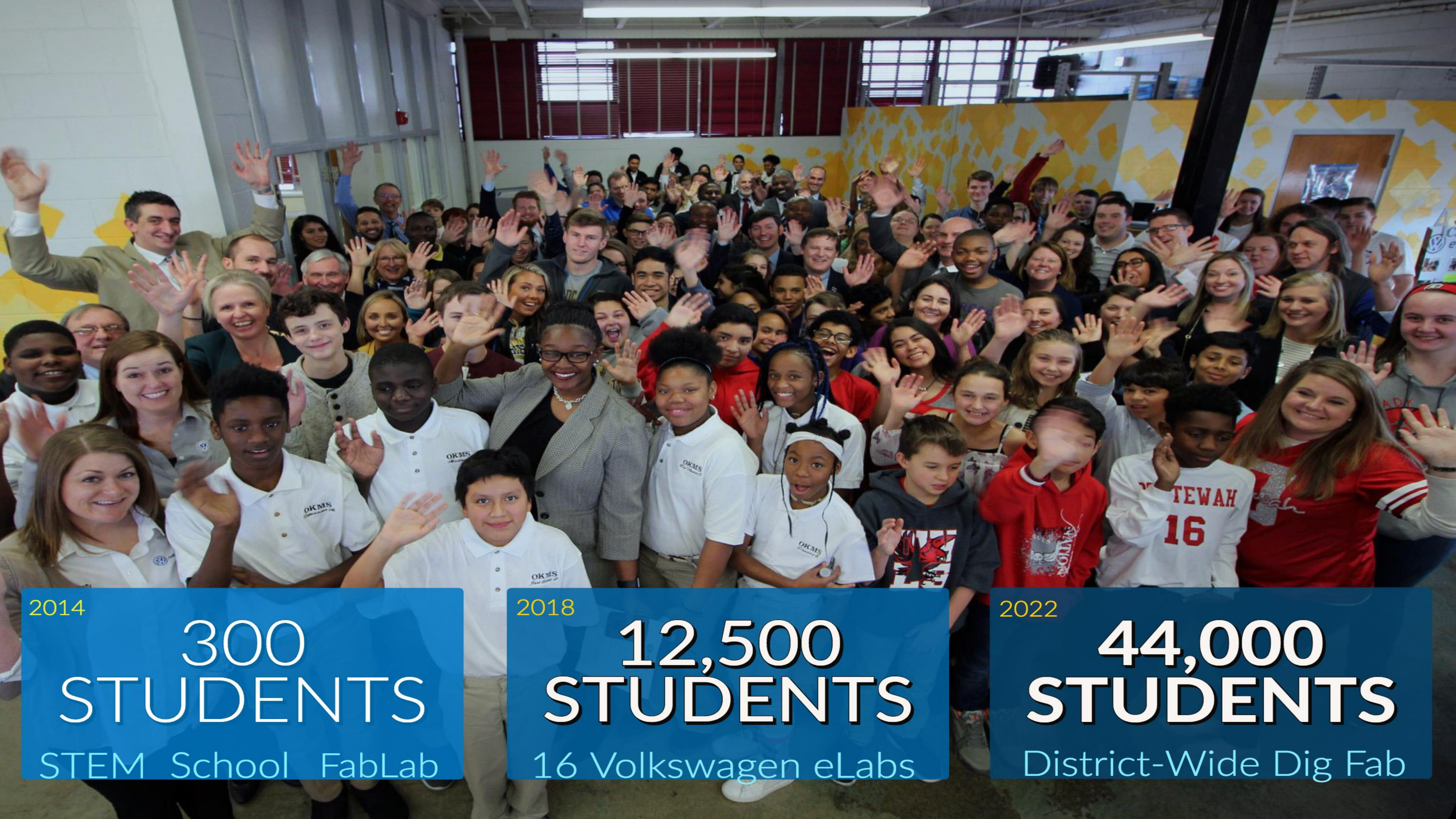
Develop a
Framework



Contextualize
the Strategy



Establish a
Network



2014

300
STUDENTS

STEM School FabLab

2018

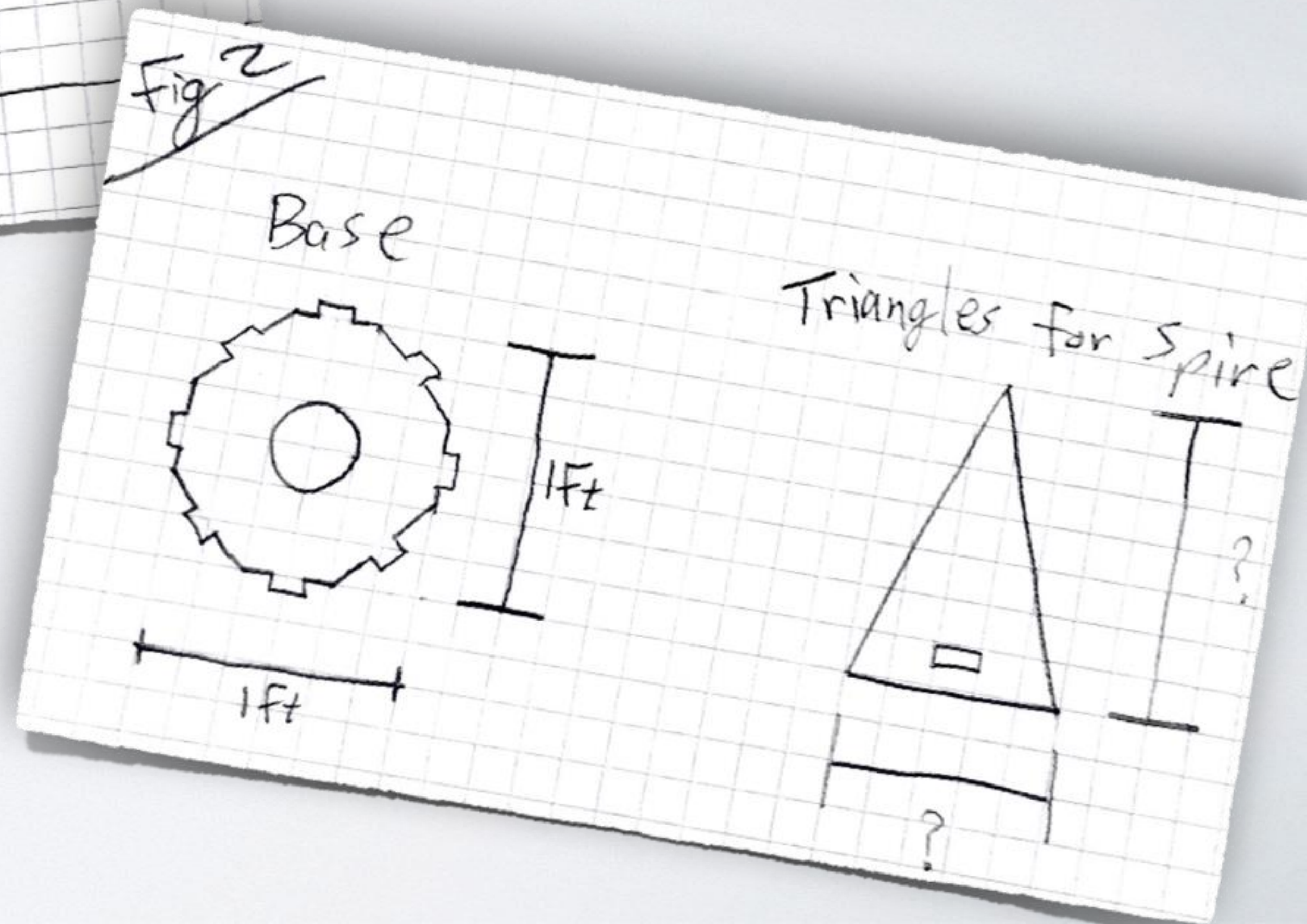
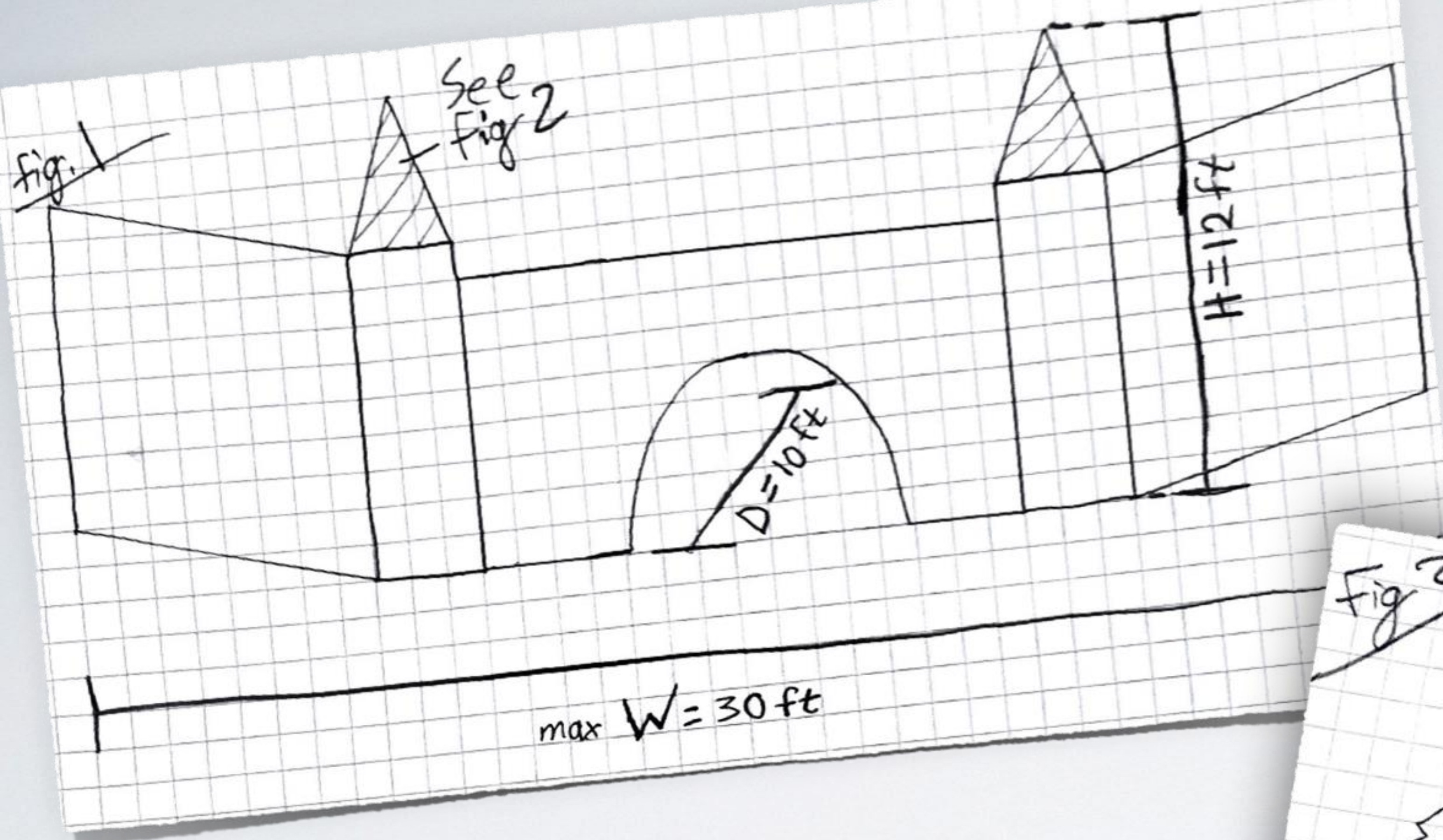
12,500
STUDENTS

16 Volkswagen eLabs

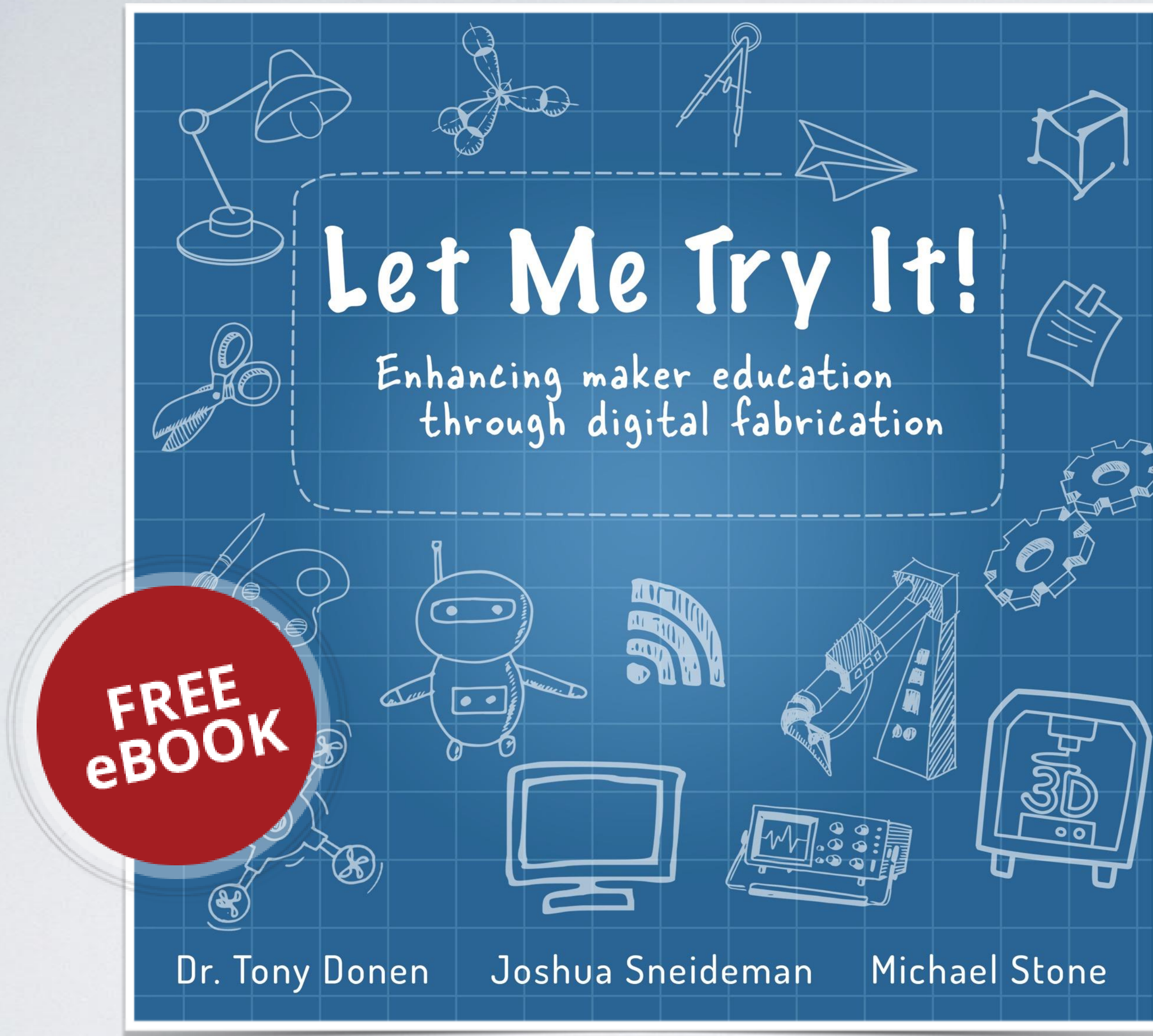
2022

44,000
STUDENTS

District-Wide Dig Fab







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Innovation ≠ Imitation



Typical Strategy

- Identify best practices
- Deliver PD that standardizes and distributes best practices
- Develop metrics and evaluation mechanisms
- Incentivize (or mandate) adoption of innovative strategies

Pitfalls

- Overemphasizes **mechanics**
- A disconnect grows as procedures are taught **without context**
- Often focuses on **procedures** instead of effectiveness
- Fosters **compliance** or false buy-in instead of genuine ownership

Scaling Innovation



DIGITAL FABRICATION ECOSYSTEM

K14 DIGITAL FABRICATION ECOSYSTEM

Elementary STEAM Labs

Students explore **tools** and **strategies** used in the modern workforce through hands on experiences



Middle & High School Fab Labs

Students engage in the creation of functional solutions to **industry-aligned problems**



Global Center for Digital Innovation

Students are empowered to **fill emerging workforce needs & create new pathways** for success

