

Transforming An Old Shop Class Into A 21st-Century Hands-on STEAM Lab

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Where is Demopolis, Alabama?



Vision (where) and Plan (how)

The Where:

Graduates are Marketable, Prepared for College, the Workforce,
or Military

The How:

- Expand Virtual Learning Opportunities
- Responsibly Manage Resources
- Strategically Manage Facilities
- Expand Career Technical Education
- Create Flexible Learning Options for Students and Adults
- Increase Critical Thinking and Encourage Creativity



Demographics

- City School System serving approximately 2,200 students
- Located in Black Belt Region of Alabama
- Approximately third of students live outside of city limits
- 4 campuses (oldest school early 1900's- newest 1990's)
- Approximately \$22,000,000 budget
- 65% of students eligible for free/reduced lunch
- Approximately half of students African-American, half white, and small percentage Hispanic



Reality in 2017

- Expected hands-on activities, critical thinking, collaboration, and problem solving embedded in instruction but **was not** supporting teachers with infrastructure.



Reality in 2017

- Relocated district maintenance staff from middle school (old shop class) to high school
- Old empty shop collecting dust and other junk
- We **were not** fully utilizing the space we had (strategically managing facilities)



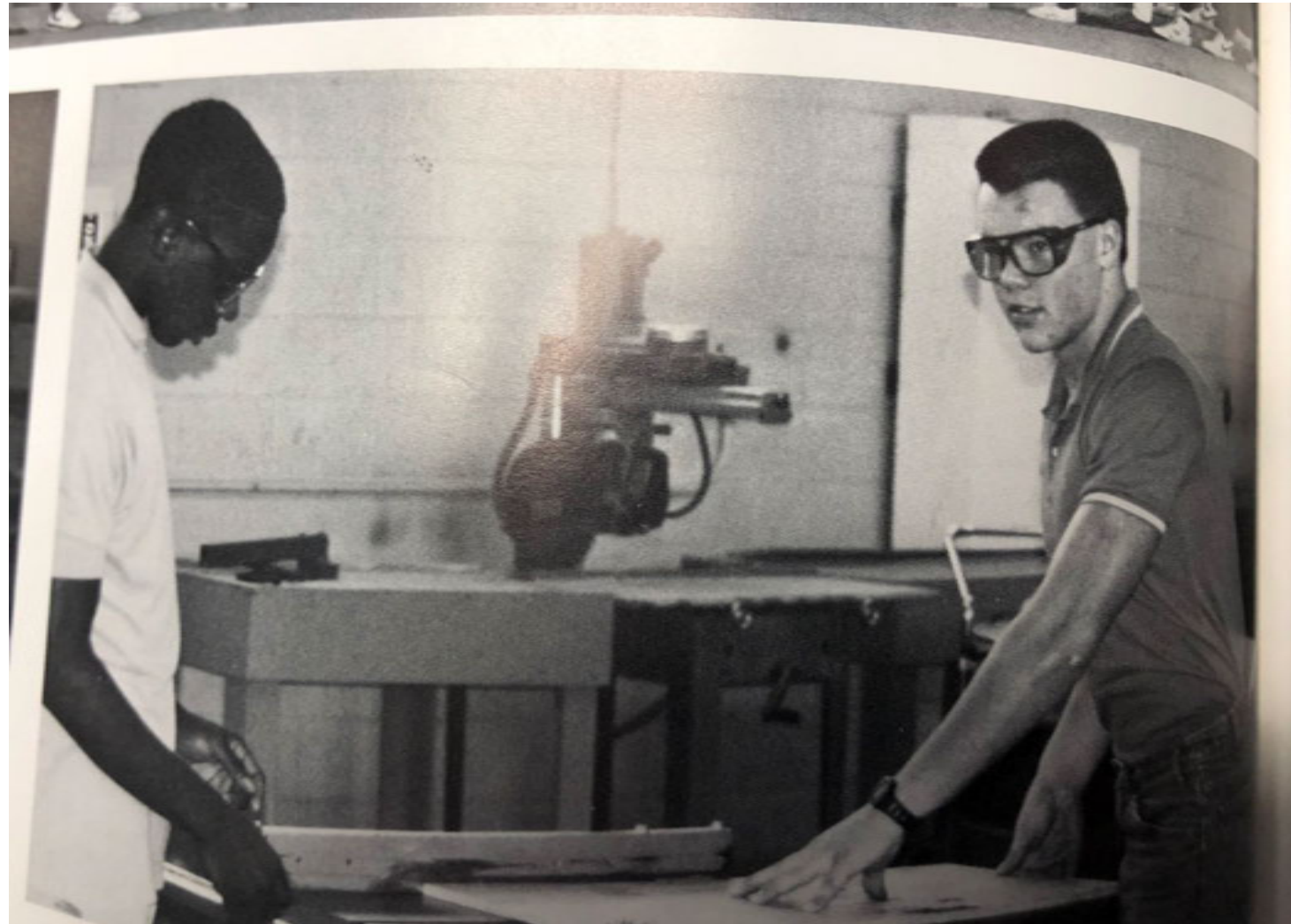
Reality in 2017

- Needs of area workforce not completely matching what we do
- Failed attempt at Programmable Logistic Controls (PLC) Course
- We needed to transform teaching and learning (fight the status quo)
- STEM building momentum in Alabama and across the nation
- Fortunate to have close to **3.5 months** of operating expenses in reserve

How could we better utilize our facilities, manage our resources, and support our teachers with what we were asking of them?

Close Your Eyes and Return to 1980 Something

- High School Shop Class from 1980's
 - Bird houses and picture frames
 - Band saws and machine drills



Under Construction



Under Construction



Under Construction



Under Construction



Under Construction



Under Construction



Under Construction



Under Construction



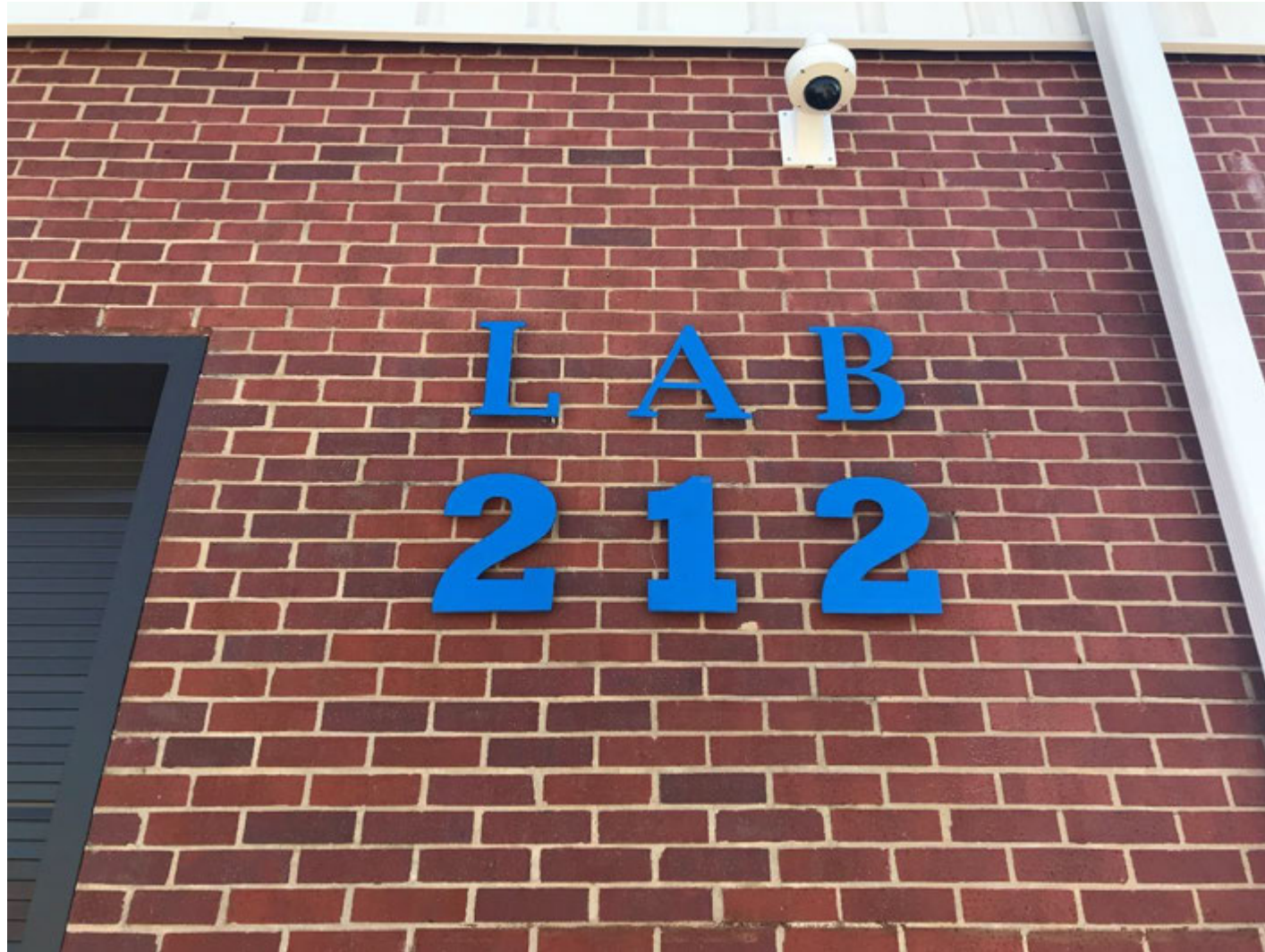
Under Construction



Ribbon Cutting and Grand Opening



Ribbon Cutting and Grand Opening



Ribbon Cutting and Grand Opening



Ribbon Cutting and Grand Opening



Ribbon Cutting and Grand Opening



Transformation



Transformation



Technology and Equipment

Chromebook Cart



Technology and Equipment

Virtual Reality



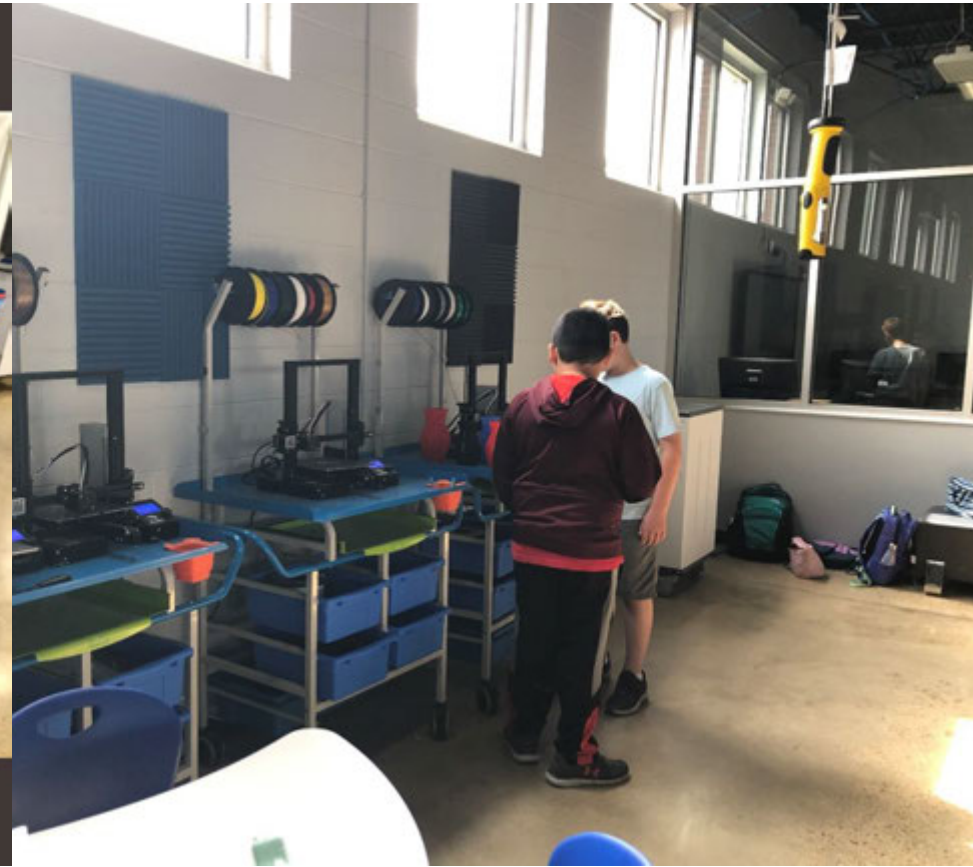
Technology and Equipment

Audio Enhancement



Technology and Equipment

3D Printers



Technology and Equipment

12 Station Desktop Lab



Technology and Equipment

Touchscreen Panels



Technology and Equipment Maker Space



Technology and Equipment Chess



Funding Sources to Make a Vision a Reality

Action	Fund Source	Amount
Repurpose facility and construction	Local (Certificates of Deposit)	\$265,000.00
Technology and equipment/supplies	Federal Dollars	\$180,000.00
Furniture and fixtures	Capital and Donations	\$50,000.00
Professional Development and Travel	Federal Dollars	\$5,000.00
	Total	\$500,000.00



Turn and Talk

- Think of a space at one of your schools that is being under utilized. In what imaginative ways could that space be re-purposed to increase critical thinking, problem solving, creativity, and entrepreneurship?



If you Build it...They will Come Now What?

- Hands-on Activities
- Creativity
- Encouraging the Arts
- Collaboration
- Critical Thinking
- Adult Professional Development



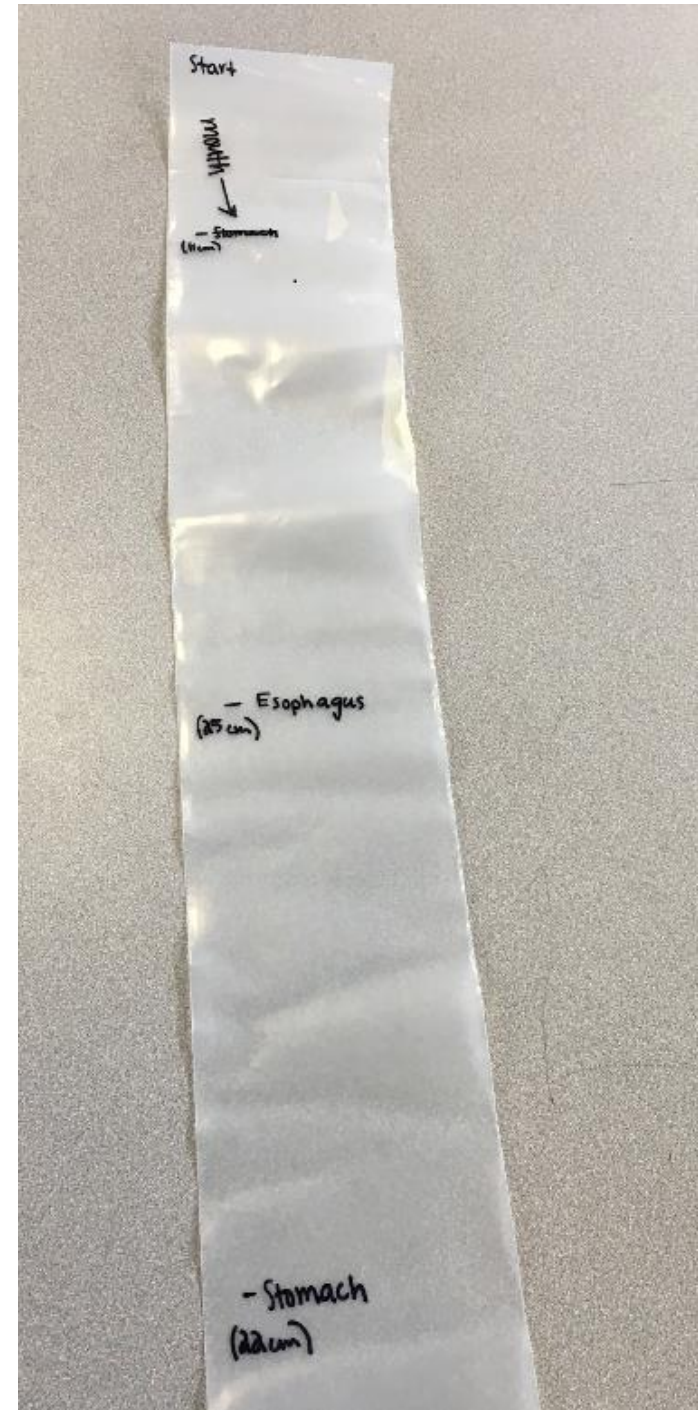
Life Science (AMSTI) Models of Organ Systems



Life Science (AMSTI) Models of Organ Systems



Life Science (AMSTI) Models of Organ Systems



Life Science

Creating Your Own Pond



Life Science

Flow of Energy and Conservation of Matter



Earth Science Collaboration

Continental Shapes and Seafloor Structures



Earth Science Collaboration

Continental Shapes and Seafloor Structures



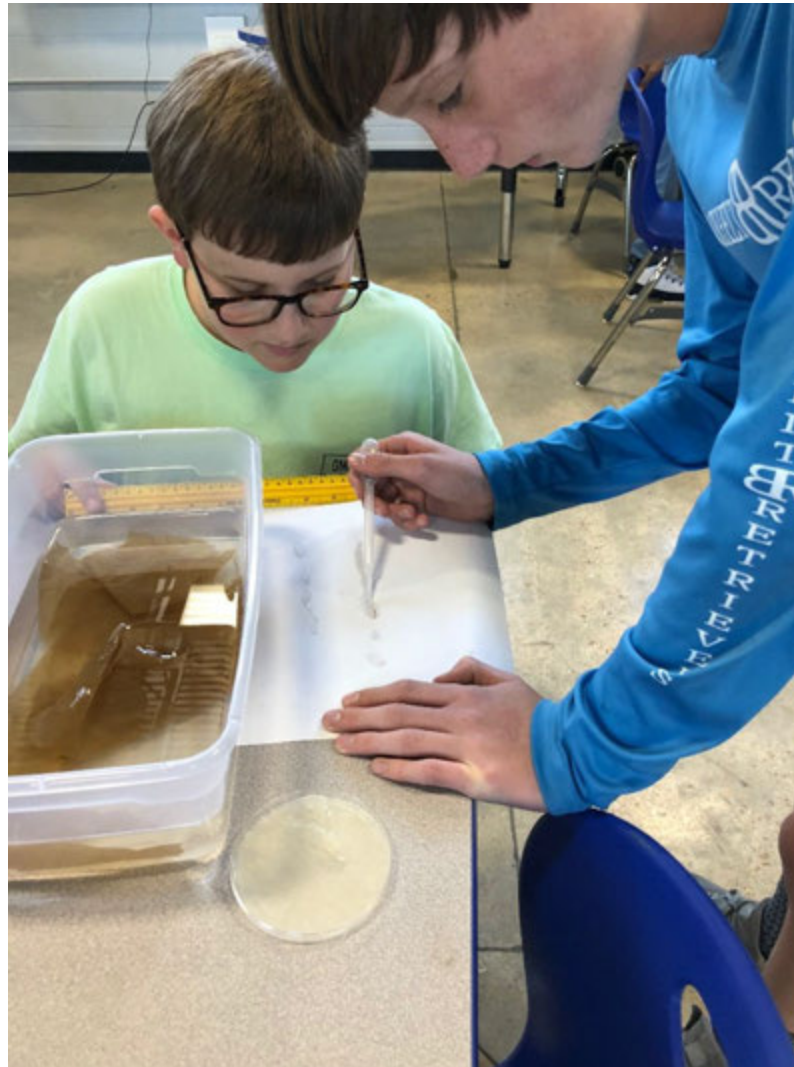
Math & Science Collaboration

Solar System and Measurement

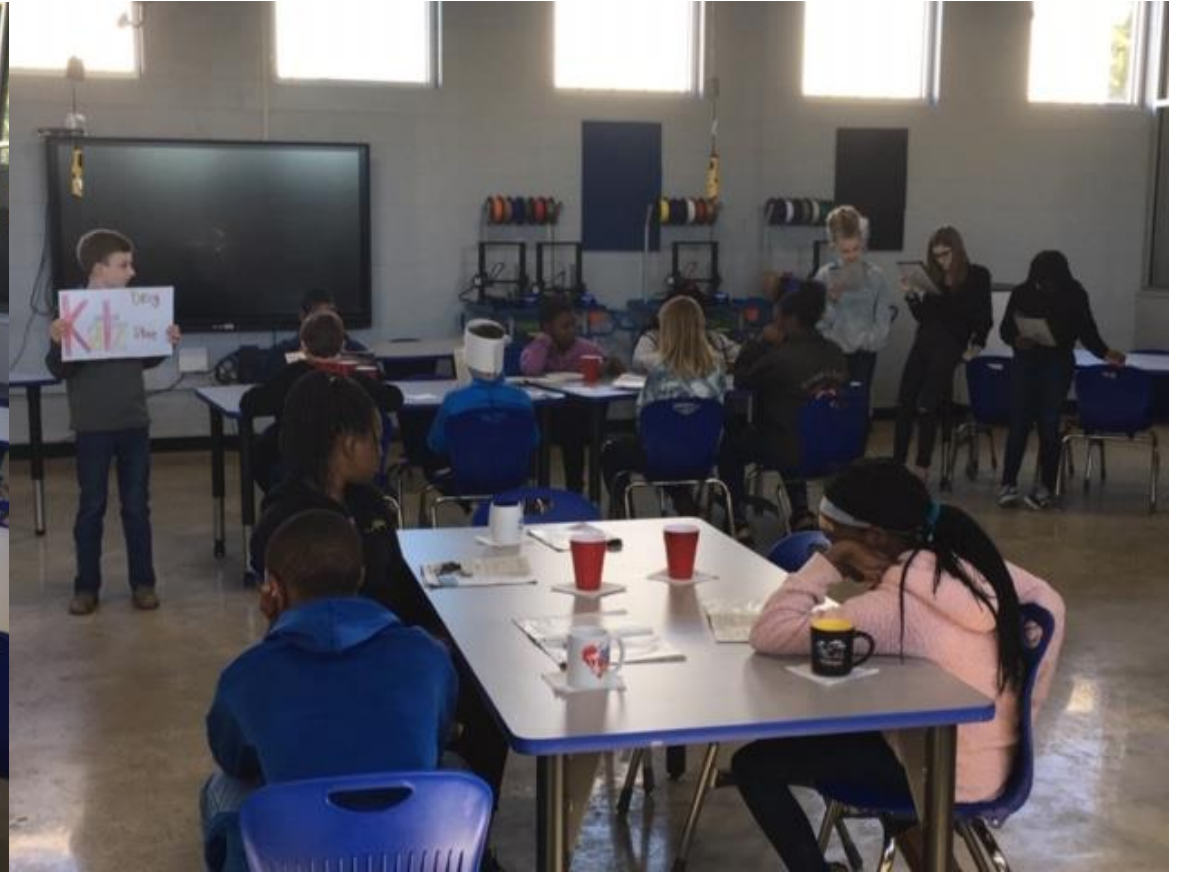
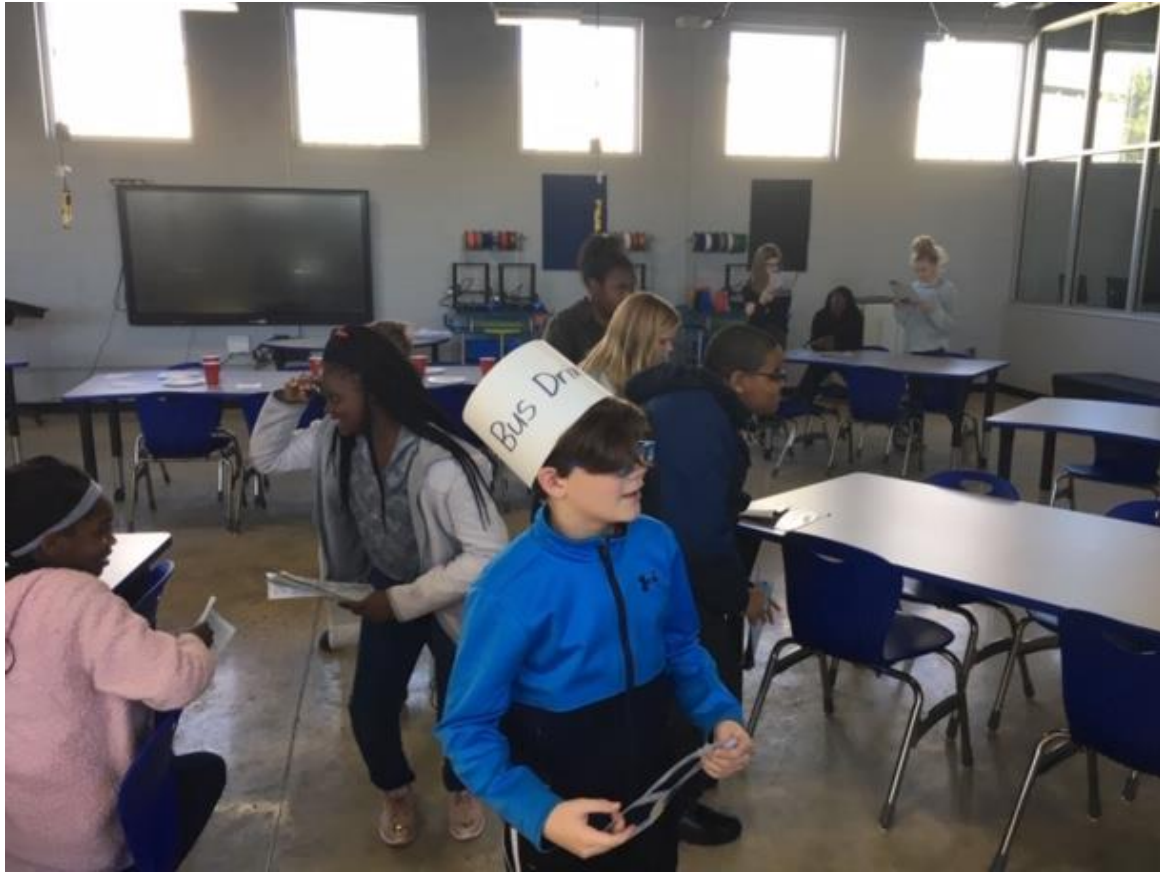


Math & Science Collaboration

Observing Lumbriculus



Language Arts



Coding and Programming



Circuits



Strategic Planning

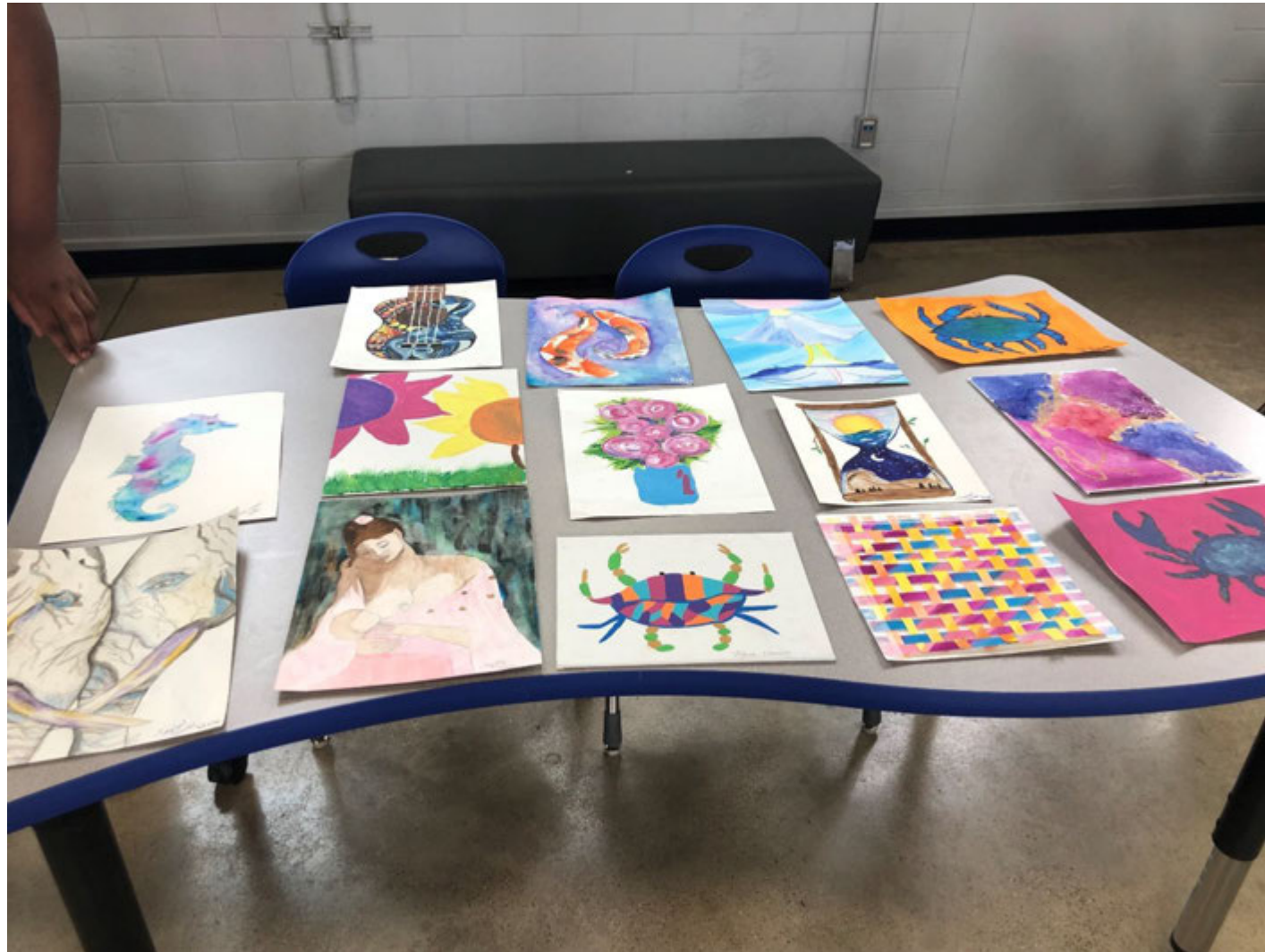
Middle School and High School students collaborated on a feedback session with a City Planner about what they want Demopolis to look like 20 years from now.



Strategic Planning

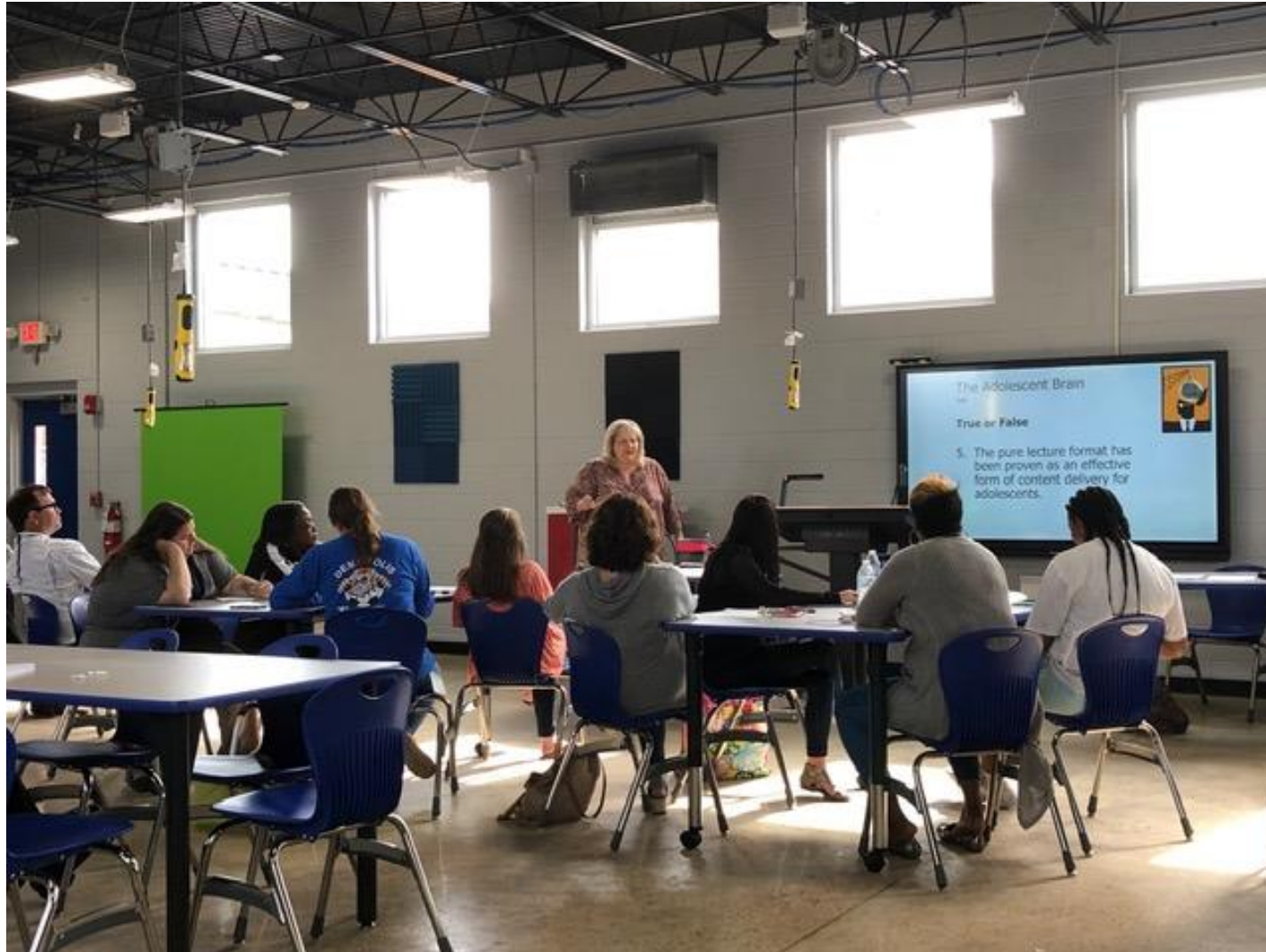


The A in STEAM



Adult Professional Development

Alabama Reading Initiative



Adult Professional Development Math Standards and Assessment



Adult Professional Development Virtual Reality Goggles



Adult Professional Development Virtual Reality Goggles



Adult Professional Development Leader In Me



Did we do what we said we would do?

The How:

- ✓ Expand Virtual learning Opportunities
- ✓ Responsibly Manage Resources
- ✓ Strategically Manage Facilities
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Next Steps

- Expand STEAM Infrastructure to the High School
- Continue to Budget for Consumables
- Ongoing Professional Development
- Adapt and Adjust Technology to keep up with the Students
- Include Younger Students from the Two Elementary Schools



Questions

Thank You

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