

STEM A Pathway to Resilient Leadership

Toni Robinson AASB Summer Conference June 18, 2021 Twitter: @ToniRobinsonAZ



What was your greatest fear in 2020?

FEAR

Forget Everything and Run

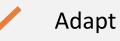
Face Everything and Rise

It's not how you fall; it's how you get back up

Pitbull: I Believe that We Will Win



Characteristics of Resilient Leaders









Sustain energy under pressure



Bounce back quickly from setbacks



Overcome major difficulties



Look for opportunity during periods of turbulence

Globally Literate Citizens

"Every child a graduate. Every graduate prepared". -AL State Dept of Ed.



Source: Smithsonian Science Education Center







National Academy of Engineering

The Grand Engineering Challenges





Advance health informatics

Engineer better

medicines



Advance personalized learning



Develop carbon sequestration methods

Enhance virtual

reality



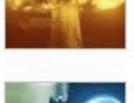
Engineer the tools of scientific discovery



Manage the



Prevent nuclear terror



Restore and improve urban infrastructure



Make solar energy economical

Provide access to

clean water



nitrogen cycle

Provide energy

from fusion









Reverse-engineer the brain



Secure cyberspace





Challenges: Cyber Security

- In 2020 there were 65,000 ransomware attacks
- Uptick in the number of attacks, amounts being demanded
- K-12 schools top targeted sector
- Average ransom \$50,000

https://www.cbsnews.com/news/schools-popular-ransomware-targets/



Digital Resilience

- Agility and adaptability
- Data privacy compliance
- Swift response to disruption
- Strong digital security culture
- Modernization of systems, software and infrastructure



Looking Forward

Forces Shaping the Future of Work

- Automation
- Globalization
- Collaboration



http://www.fya.org.au/wp-content/uploads/2015/08/fya-future-of-work-report-final-lr.pdf

8 Elements of Successful STEM Schools

University of Chicago: STEM School Study- 2015

1. Problem Solving

Critical thinking

Interdisciplinary instruction

Autonomy

Reflection

2. School Community and Belonging

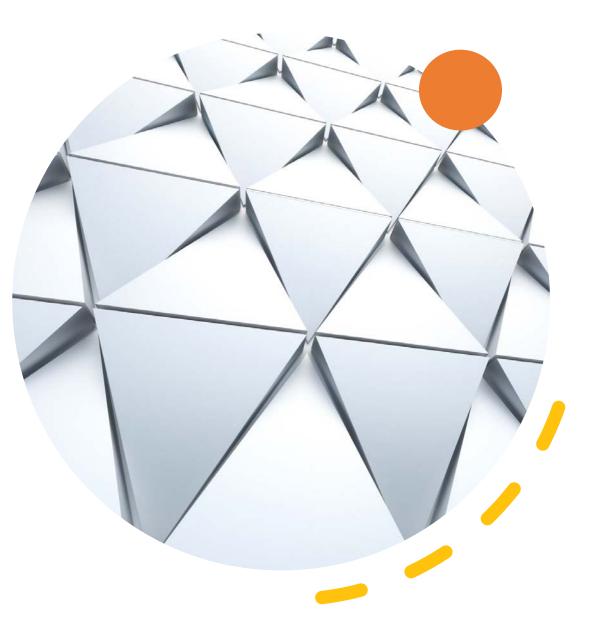




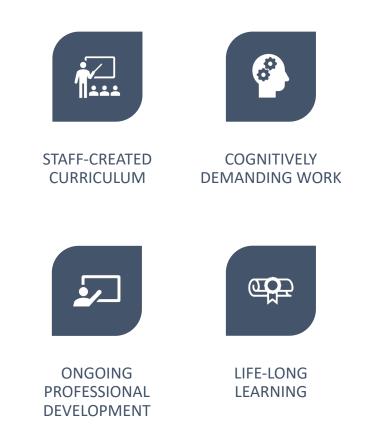
ESTABLISHED SENSE OF TRUST RESPECTFUL **BEHAVIOR**



OF CULTURE

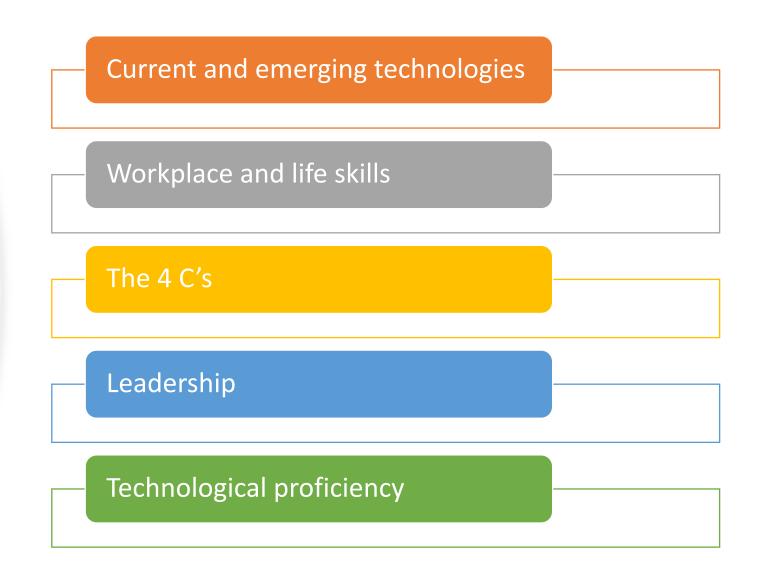


3. Rigorous Learning





4. Career,Technology andLife Skills



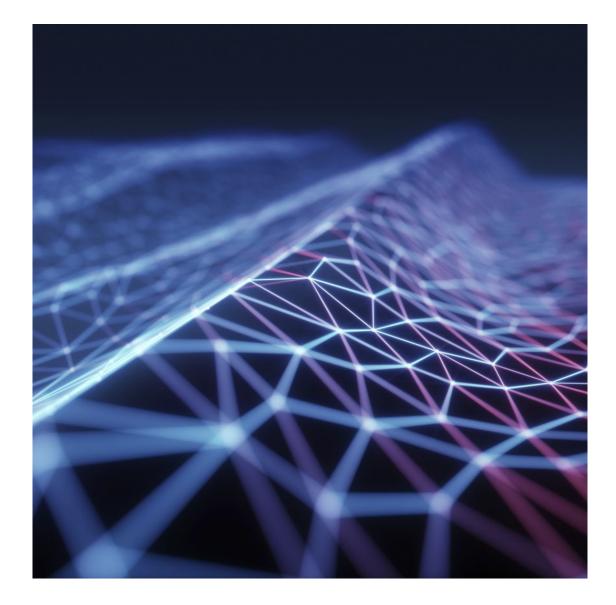
5. Connection to External Community

Connection between STEM schools and broader community

Partnerships with businesses and organizations

Service-learning & internship opportunities

Volunteer activities



6. Personalized Learning

- Customization of learning
- Student agency
- Student ability and interest

7. Professional Development

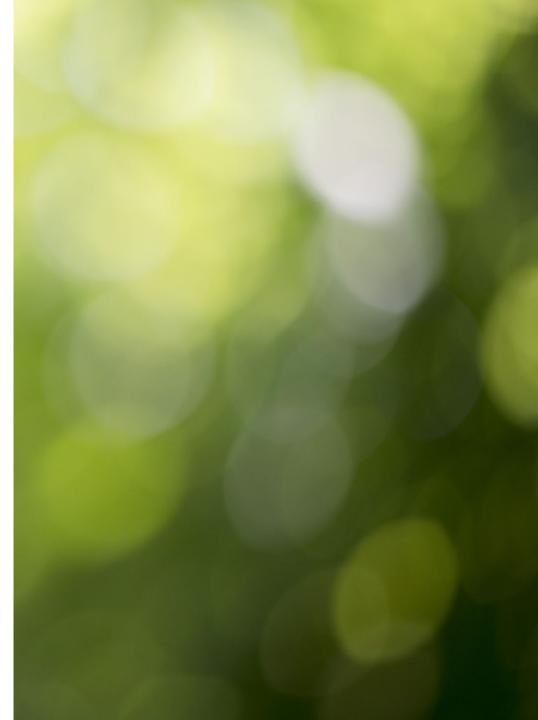
Safe environment

Risk-taking encouraged

Fail forward

Ample resources

Ongoing process





8. Resilient Leaders

- Communicate powerfully
- Are coachable
- Build positive/ trusting relationships
- Champion change
- Are decisive
- Seek help when necessary

Resources

Alabama's Roadmap to STEM Success



STEM Exploration and Discovery



Numeracy and STEM fluency



Pre-Service STEM educator preparation



In-Service STEM educator development



Career Pathways for In-demand STEM occupations



Equity, Access and STEM





Real Challenges. Real Possibilities.

Teach Like the Future Depends on it.



Skills





Literacy

Infused

Global

Solution

Seekers



Career Connections







Real World

Challenges

Hands-On Activities







"Every child a graduate. Every graduate prepared."

-Alabama State Department of Education

Alabama Resources: <u>shorturl.at/bzJMW</u> Presentation Sources: <u>shorturl.at/rsRV1</u>



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