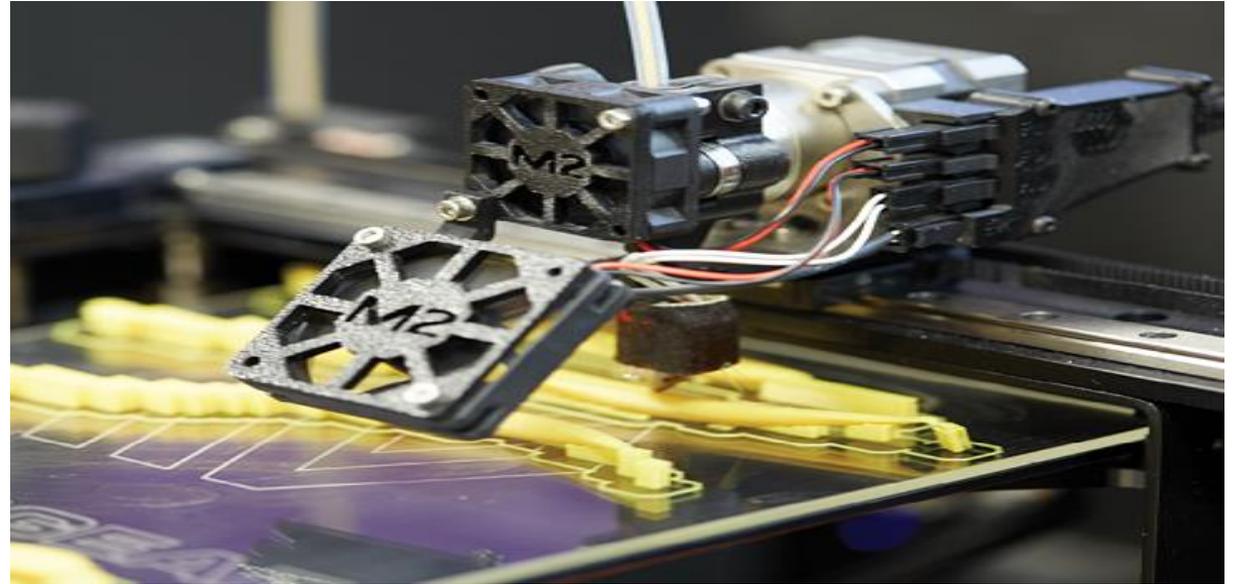


CP



# NEXGEN

SALISBURY MIDDLE  
STEM ACADEMY



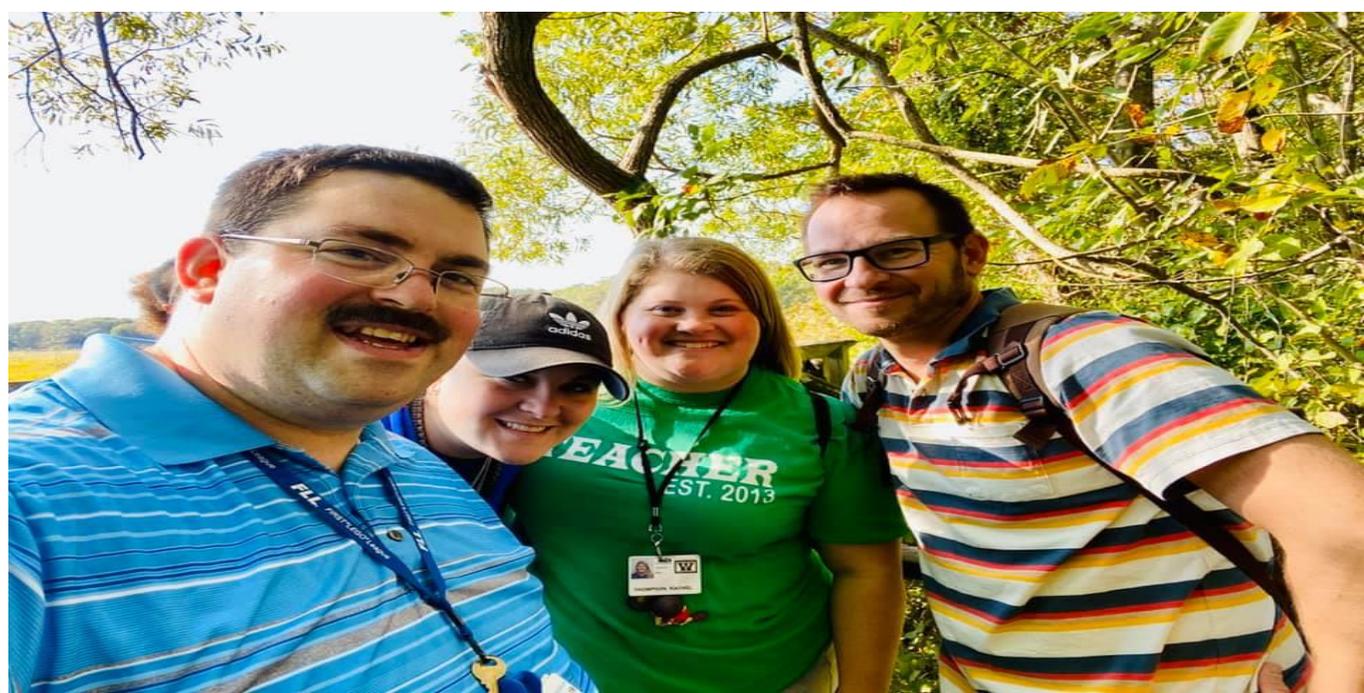
## - OUR MISSION -

The NexGen STEM Academy at Salisbury Middle School seeks to develop a holistic student that is intrinsically motivated to assess and solve community and global problems through innovation, collaboration, and reflection.

# - THE TEAM -



Chad Pavlekovich (Science), Jonathan Moore (PLTW), Jen Cahall (ELA)  
James McCrobie (Social Studies), Rachel Thompson (Math)



S'mores Media: Susanna Moore

# - COHORT #1-



2018-2019 (Now 7<sup>th</sup> Graders)



# - COHORT #2-



2019-2020 (6<sup>th</sup> Graders)



# - THE TEAM WILL... -

- Consist of students with a high degree of interest in the STEM discipline areas.
- Focus on rigorous project/problem-based learning.
- Provide inquiry-based instruction focused on problem solving, decision making, discovery and cooperative learning with a high degree of interactive hands-on involvement.



- Promote an interdisciplinary teaching approach, with technology usage inside, and outside of the classroom.
- Expect students to have a high work ethic and learn from and accept failure.
- Include consistent application of Maryland's STEM Standards of Practice and College and Career Readiness standards ([www.mdk12.org](http://www.mdk12.org))

# - WHAT STEM IS AND IS NOT...-

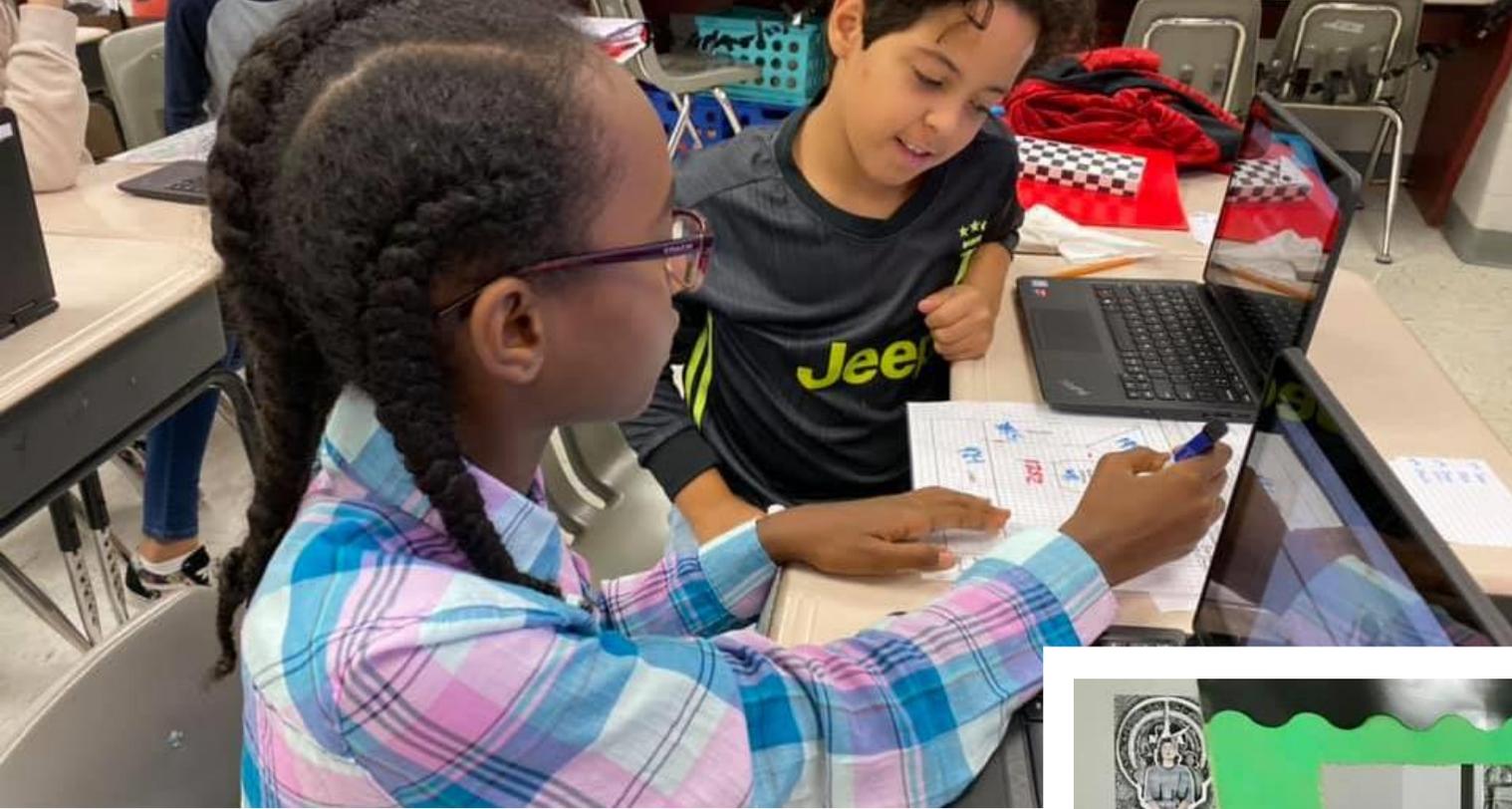
## - STEM IS...

- Inquiry Based
- Problem Based/Project Based
- Cross Curricular
- High Degree of Involvement
- Collaborative
- Infuses technology inside and outside of the classroom
- Rigorous



## - STEM IS NOT...

- Mini-Challenges (in isolation)
- Cook-book results
- Simple/easy
- Test-driven
- About grades



# - EXPECTATIONS OF THE PROGRAM-



- Risk Taker/Open to new ideas.
- Must be able to work well in collaborative groups.
- Parental engagement is crucial for student success.

- Rigorous program/ fast-passed workload.
- Significant learning curve
- Intrinsically motivated to perform to the best of their ability.



# JC - ASSESSING THE PERFORMANCE OF YOUR STUDENT -



- Performance based/Rubric driven
- 21st Century Skill Set
- Growth Mindset
- Move towards Mastery Learning

- Non-traditional program
- Innovative practices/Innovative ways of assess growth and progress.
  - (Portfolios/Project Based)
  - Writing/Reading across the curriculum.



# THE ENGINEERING DESIGN PROCESS

**COMMUNICATE**  
your solution

**DEFINE**  
the problem

**IDENTIFY**  
constraints on your  
solution (e.g. time, money,  
materials) and criteria  
for success

**BRAINSTORM**  
multiple solutions  
for the problem

**SELECT**  
the most  
promising solution

**PROTOTYPE**  
your solution

**ITERATE**  
to improve  
your prototype

**TEST**  
and evaluate  
your prototype



# - A SUCCESSFUL STUDENT PROFILE -



- Organized
- Develops good time management
- Accountable
- Resilient
- Growth-Mindset
- Collaborative/team player

- High Interest in program
- Critical thinker
- Problem solver
- Learn from and accepts failure
- Success through experience not just grades





# - AVAILABLE TECHNOLOGY -

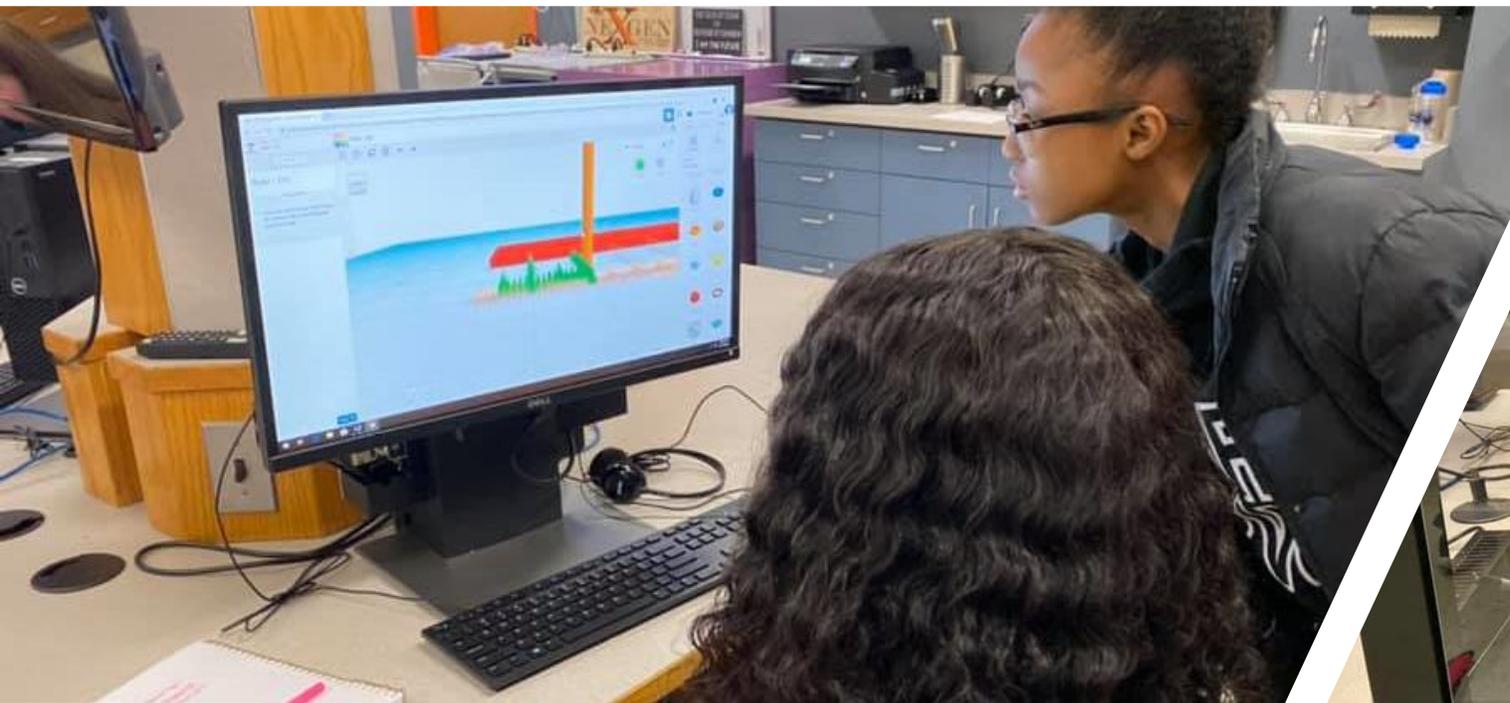
- Laptops (1:1)
  - *During the day in core classes*
- NeXus Lab (*Hub for Innovation*)
  - *High performance desktop Computers*
  - *3D printers*
  - *Carvey CNC machine*
  - *45W Laser Cutter*
  - *Littlebits/Lego Mindstorms*
  - *Raspberry pi*



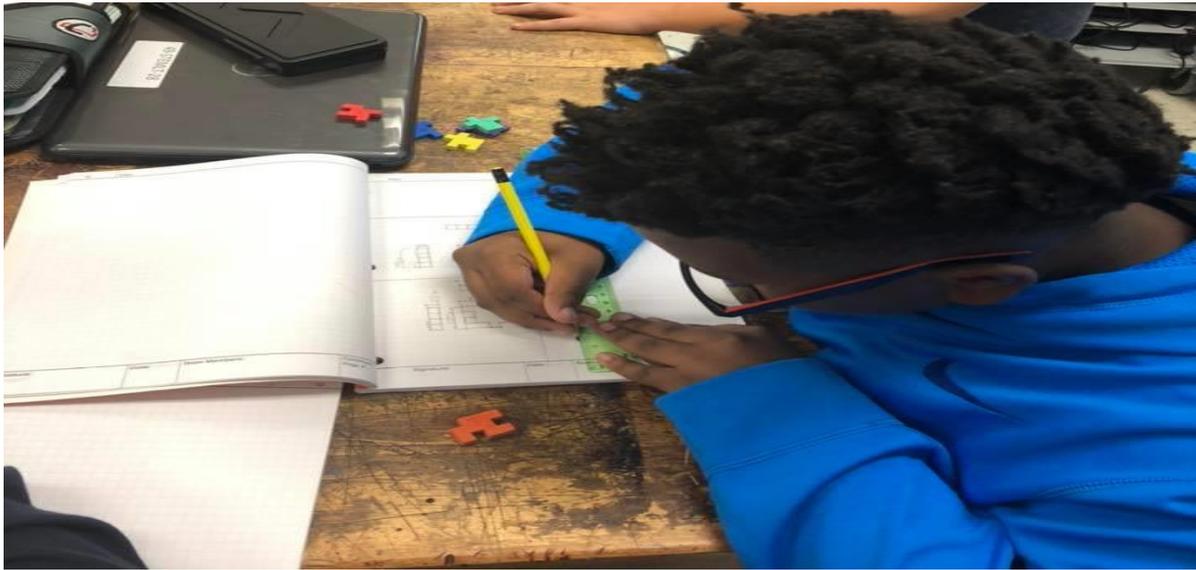
Google Classroom



- Lego League Robotics Club
- Augmented Reality Sandbox
- Gizmos Online Simulations
- Vernier Proeware
- Discovery Education Techbook
- Khan Academy
- Google Classroom/ G Suite
  - *used extensively for all core classes.*
  - *work sessions during and after school will be available to use school technology.*



# - PROJECT LEAD THE WAY (GATEWAY)-

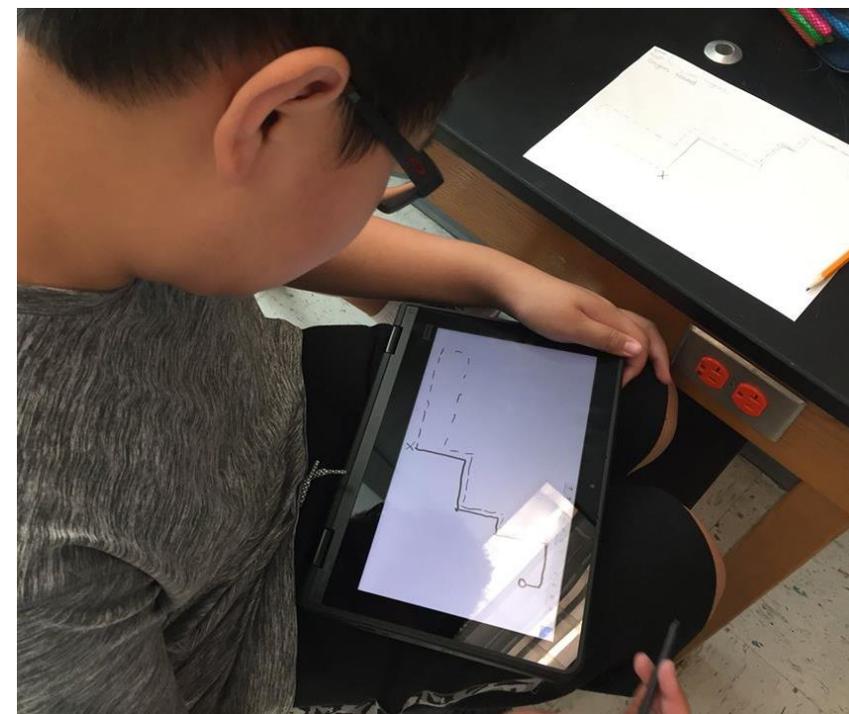
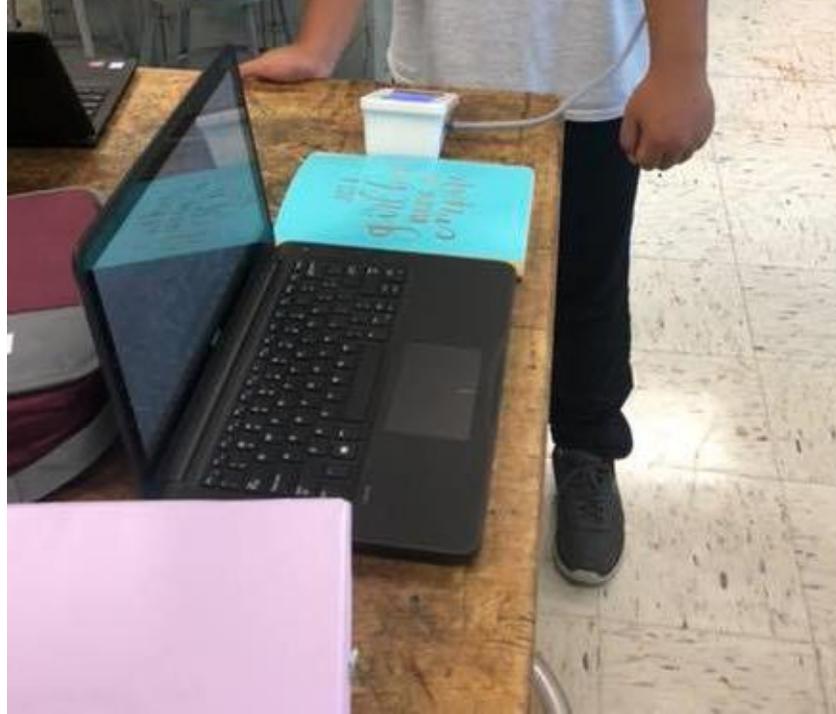
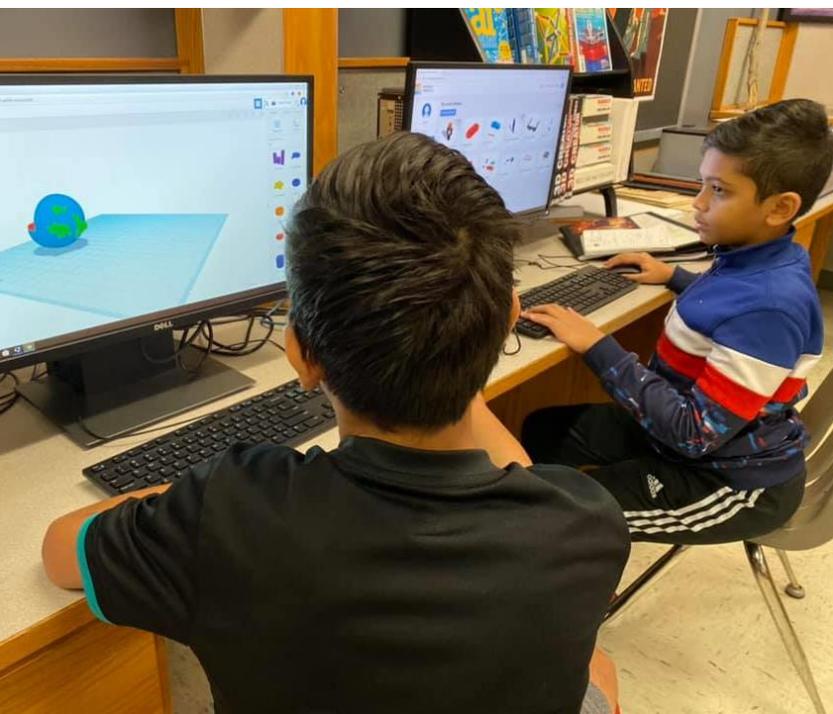
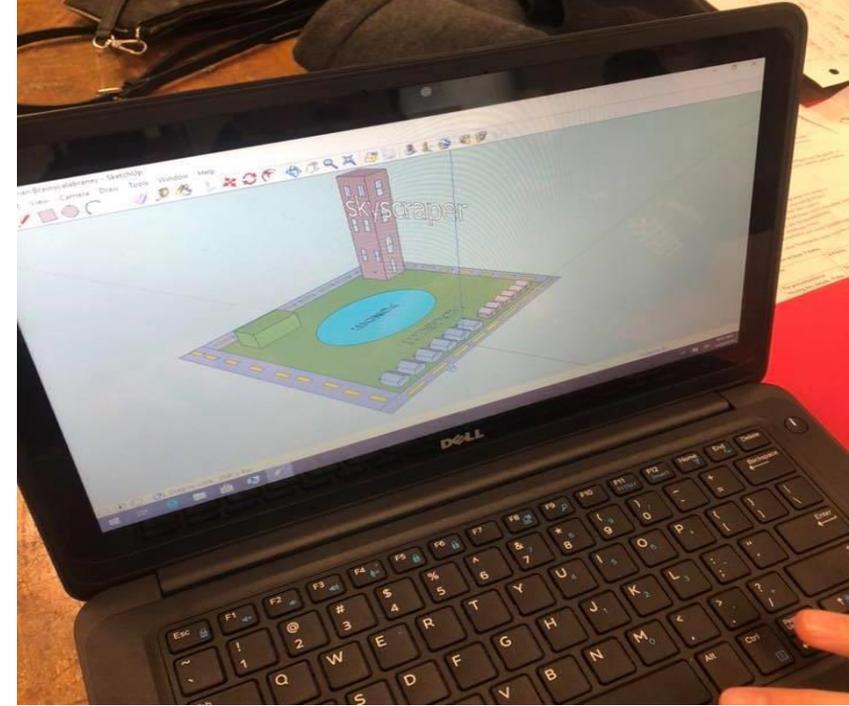


- The hands-on program boosts classroom engagement and excitement, drives collaboration, and inspires “aha! moments” and deep comprehension.
- Units engage and empower students to develop essential skills such as problem solving, critical and creative thinking, communication, collaboration, and perseverance.

## - PLTW Gateway Units

- 6<sup>th</sup> Grade
  - *Design and Modeling*
  - *Computer Science for Innovators & Makers*
- 7<sup>th</sup> Grade
  - *Green Architecture*
  - *Medical Detectives*
- 8<sup>th</sup> Grade
  - *Automation and Robotics*
  - *Flight and Space*





ALL

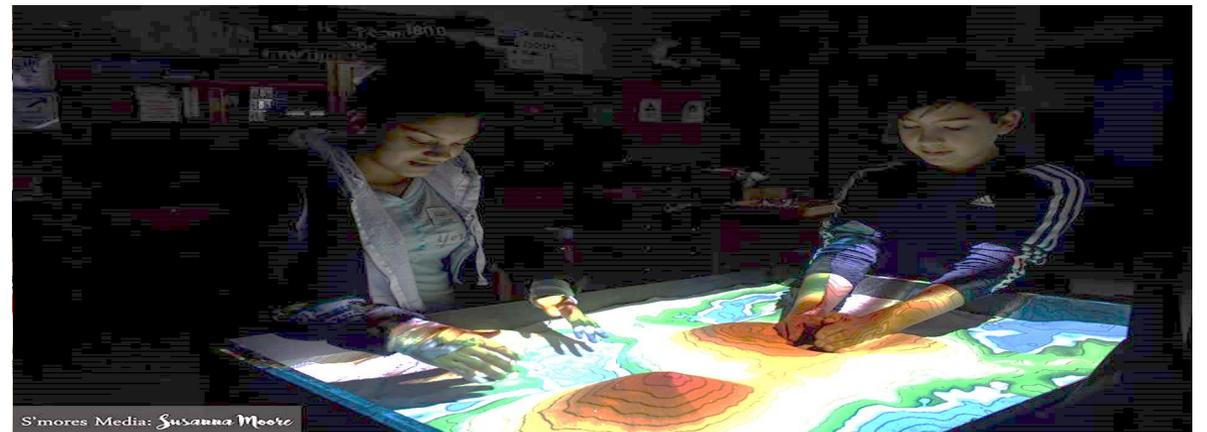
## -A LOOK AHEAD AT THE FIRST UNIT OF STUDY-

### How do geographic tools help to answer questions and solve problems?



- **Introductory Unit:** focuses on pathways of mapping that integrates the STEM disciplines.
- **Social Studies:** types of maps, map elements, spatial relationships, regions, design software to model regions, and to create a map that displays data useful for solving problems.
- **Math:** scale factor, coordinate grids, measurement conversions, number/timelines and percentages and apply them to solving real world problems.

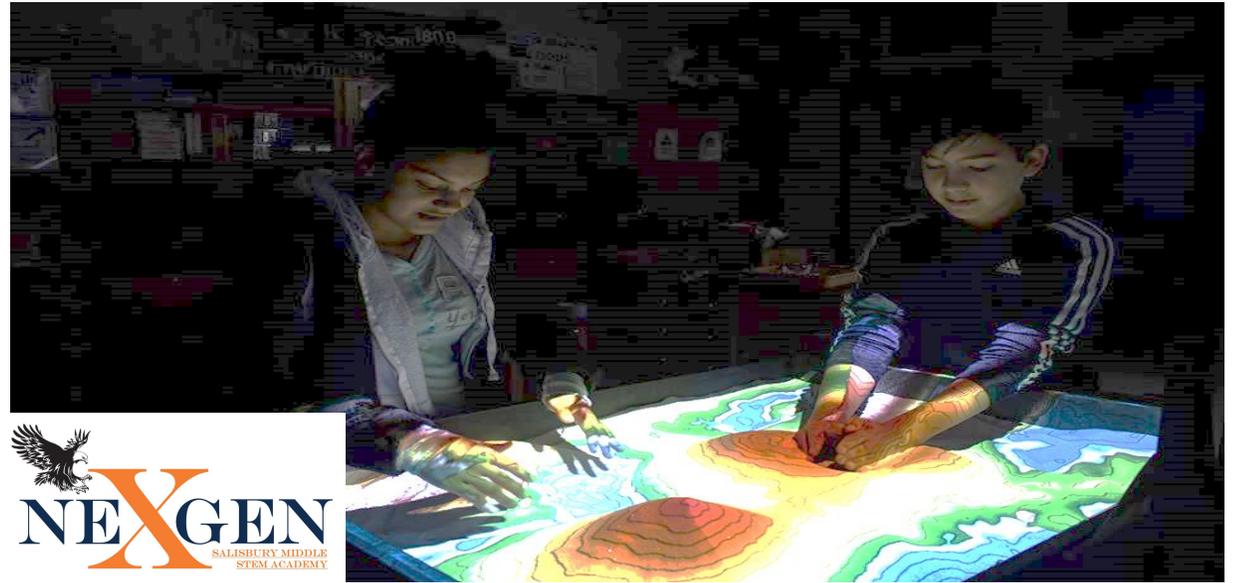
- **PLTW:** Design and modeling unit. Understanding the importance of blueprinting, building compasses, sundials, etc.
- **Science:** pathways of circuits as maps, engineering circuit boards, understanding electricity and magnetism. Magnetic Field lines of Earth used as navigational aid (compasses, sat navigation)
- **ELA:** blueprint/focusing on identity and time with the design of a life map.



S'mores Media: Susanna Moore

- FOR -  
- MORE -  
- INFORMATION -

[www.smsnexgenstem.org](http://www.smsnexgenstem.org)  
[www.facebook.com/smsnexgenstem](http://www.facebook.com/smsnexgenstem)

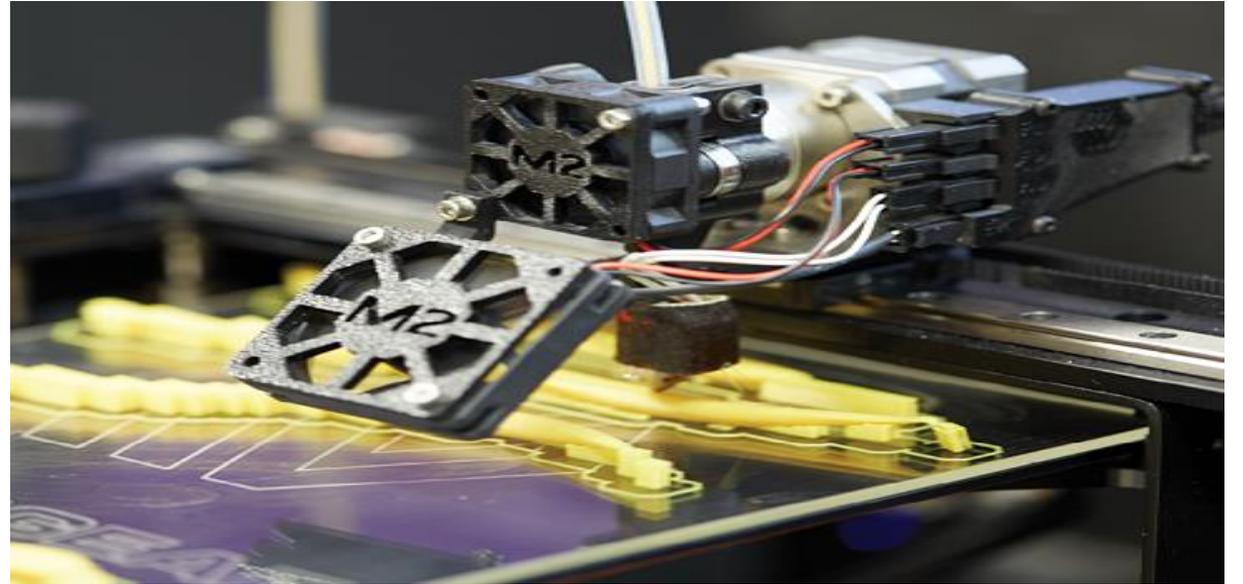


Have  
Questions?



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