Albemarle County Public Schools

Maker Culture

Why?
- We believe that in order to succeed in their future our students must be “makers,” not just consumers.
- We know from brain research that learning is strongest and most deeply recalled when it is tied to multiple senses and multiple parts of the brain.
- We know that engagement increases for all students when they have authentic problems to solve.

What?
- Our Maker Spaces include a wide range of tools, from traditional hand tools to sewing machines, from 2D fabricators to 3D printers, from music creation equipment to contemporary tools for writing, from video equipment to paste, paint, and scissors. We have supports for computer coding, and whiteboards to dream and plan on. We have cardboard, wood, steel, and high-tech plastics.
- Our Maker Spaces are flexible. We are working on bringing our students to the highest levels of “design thinking,” and within design constraints, we want them to see a wide range of solutions.

Where?
Albemarle High School: Open Use 3D Printer in Library
MESA Engineering Labs
Monticello High School: Open Use 3D Printer in Library
MakerSpace in Library
HackerSpace in Library
3D Printer for CTE
Mustang Music Studio
App Development Courses in CTE Lab
Western Albemarle HS: 3D Printer in CAD/GIS/Architecture Lab
Collaboration with CTE Metals Casting
CATEC: Strategic Planning to Redesign Curriculum and Space
Performance/Task-Based Assessments
Digital Content Integration
Burley Middle School: 3D Printer in 6th grade Social Studies classroom
Henley Middle School: 3D Printer in CTE Workshop
Jouett Middle School: Multiple 3D Printers in Lab School Science/Engineering Collaborative
Sutherland Middle School: Multiple 3D Printers in Science/Engineering Collaborative
Laser Cutter in Science/Engineering Collaborative
2D Fabricators in Science/Engineering Collaborative
MakerSpace with flexible structure capabilities
3D Printer in 7th grade English classroom
Walton Middle School: 3D Printers in CTE Workshop
Commons/Amphitheater with Maker tools and Space
Agnor-Hurt Elementary: Game Design Program in 4th/5th grade Classrooms
Baker-Butler Elementary: STEAM Lab with Maker tools and Space
Broadus Wood Elementary: MakerSpace dedicated room with tools
Library MakerSpace
Courtyard Science MakerSpace
Brownsville Elementary: Innovation Lounge with digital maker tools
4th/5th grade Toolbuckets including 2D fabricators
Cale Elementary: Maker-Infused Curriculum
Library MakerSpace
Crozet Elementary: WonderLounge with digital maker tools
Hollymead Elementary: Maker-Infused Curriculum
Library joined to Art Room for Courtyard MakerSpace
Meriwether Lewis Elem: Library MakerSpace with 2D Fabricators
Maker Corridors
Murray Elementary: Murray Commons Cafeteria/MakerSpace
Garden
Red Hill Elementary: MakerSpace
Garden
MakerCorps Summer School
Scottsville Elementary: MakerSpace tools in 5 classrooms
Garden
MakerCorps Summer School
Stone-Robinson Elem: Maker Time weekly for all students
Stony Point Elementary: iSpace Maker Room and Tool Crib
Maker Buckets and Carts throughout building
Maker-Infused Curriculum
MakerCorps Summer School
Woodbrook Elementary: Maker-Infused Curriculum
MakerCorps Summer School
Yancey Elementary: Cafeteria/MakerSpace Flex Space
Library MakerSpace
MakerCorps Summer School

How?

- Funding through Design 2015, CTE, School Budgets, Professional Development (all redirected funding)
- Professional Learning through MakerEducation’s MakerCorps, online learning, Professional Development trips to Chicago Children’s Museum, National Building Museum, New York Hall of Science, World Maker Faire
- Partnerships with University of Virginia Curry School of Education, Mechanical Engineering, and Aeronautical Engineering, the New York Hall of Science, the Smithsonian Institution
- Ongoing support through ACPS Innovation Team
- Development of new Middle School CTE/Science/Engineering Curriculum
- Expansion of Engineering Curriculum to all secondary schools for 2014-2015
Albemarle County Public Schools
Maker Resources

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Strategic Plan http://www2.k12albemarle.org/acps/division/planning/Pages/default.aspx
And on YouTube http://youtu.be/6ykaemEp6nM
Lifelong Learner Competencies http://www2.k12albemarle.org/acps/division/Pages/Lifelong-Learner-Competencies.aspx
Design 2015 http://www2.k12albemarle.org/dept/instruction/design-2015/Pages/default.aspx
and https://sites.google.com/site/acpsdesign2015/home
Our “Seven Pathways” https://sites.google.com/site/acpsdesign2015/home/seven-pathways

Efforts:
Sutherland Middle School Mechatronics http://www.nbc29.com/story/23613853/albemarle-middle-school-offers-mechatronics-class (suburban)
Walton Middle School SPCA Build http://www.nbc29.com/story/24410738/albemarle-students-build-distribute-free-doghouses (high poverty/rural and suburban)
Middle Schools – “Meet the Makers” http://www.scholastic.com/browse/article.jsp?id=3758299

Videos on YouTube

1. Third Grade, suburban elementary, State Curriculm-Simple Machines http://youtu.be/lz1ZvsFS6V8
2. MakerSummer Elementary Summer School with MakerCorps (MakerEd) – rural high poverty or poverty/suburban (4 schools) http://youtu.be/lUoVuYWNP0k
3. Ninth Grade, rural high school, high poverty, standard-level English curriculu, (in Library, including Library MakerSpace) http://youtu.be/F0ru4a9NtCs
4. Eighth Grade Science Teacher, suburban middle school, teacher created video to ask for Twitterverse reaction to curricular plan
   http://youtu.be/RFg4OmpeNiY
5. Second Grade, suburban elementary, making instead of outdoor recess
   http://youtu.be/4cY8RzBZKi8
6. High School, multiple grade, rural poverty/suburban, video production and music production students, promotional videos http://youtu.be/hCFk5fUj37g
7. High School, multiple grade, rural poverty/suburban, music industry class http://youtu.be/rN_LITi-pFw

Other:
Middle School Scratch Programming, rural poverty/suburban
http://scratch.mit.edu/projects/10300445/
High School Android Apps, rural poverty/suburban