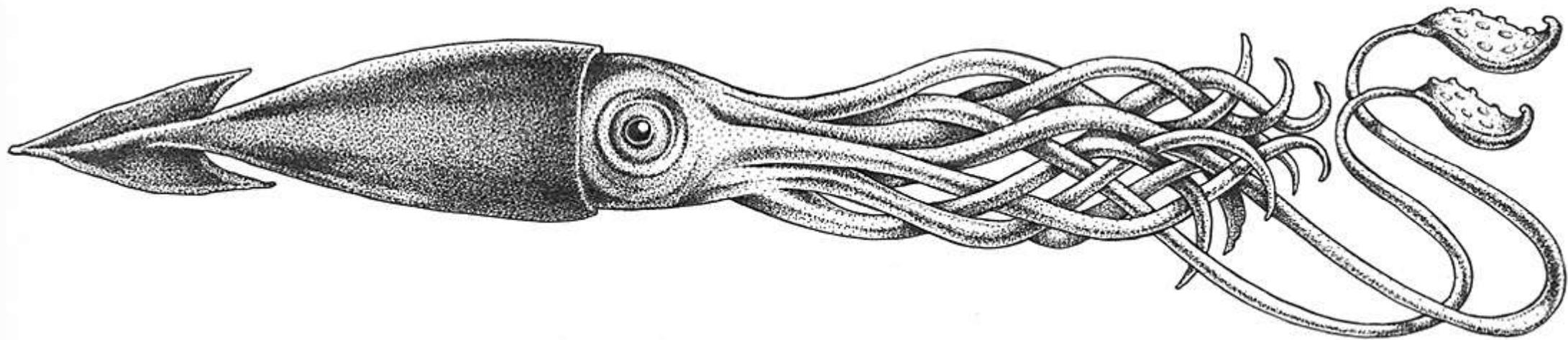




MAKING YOUR OWN DESTINY

Leah Hamilton

**Phelps Library & STEAM Lab Makerspace
FL STEM Hub & FAME**









CITIZEN SCIENTIST

Scientific research
conducted, in
whole or in part,
by an amateur
(or non-professional)
scientist



GOALS

DEFINING OUR PURPOSE

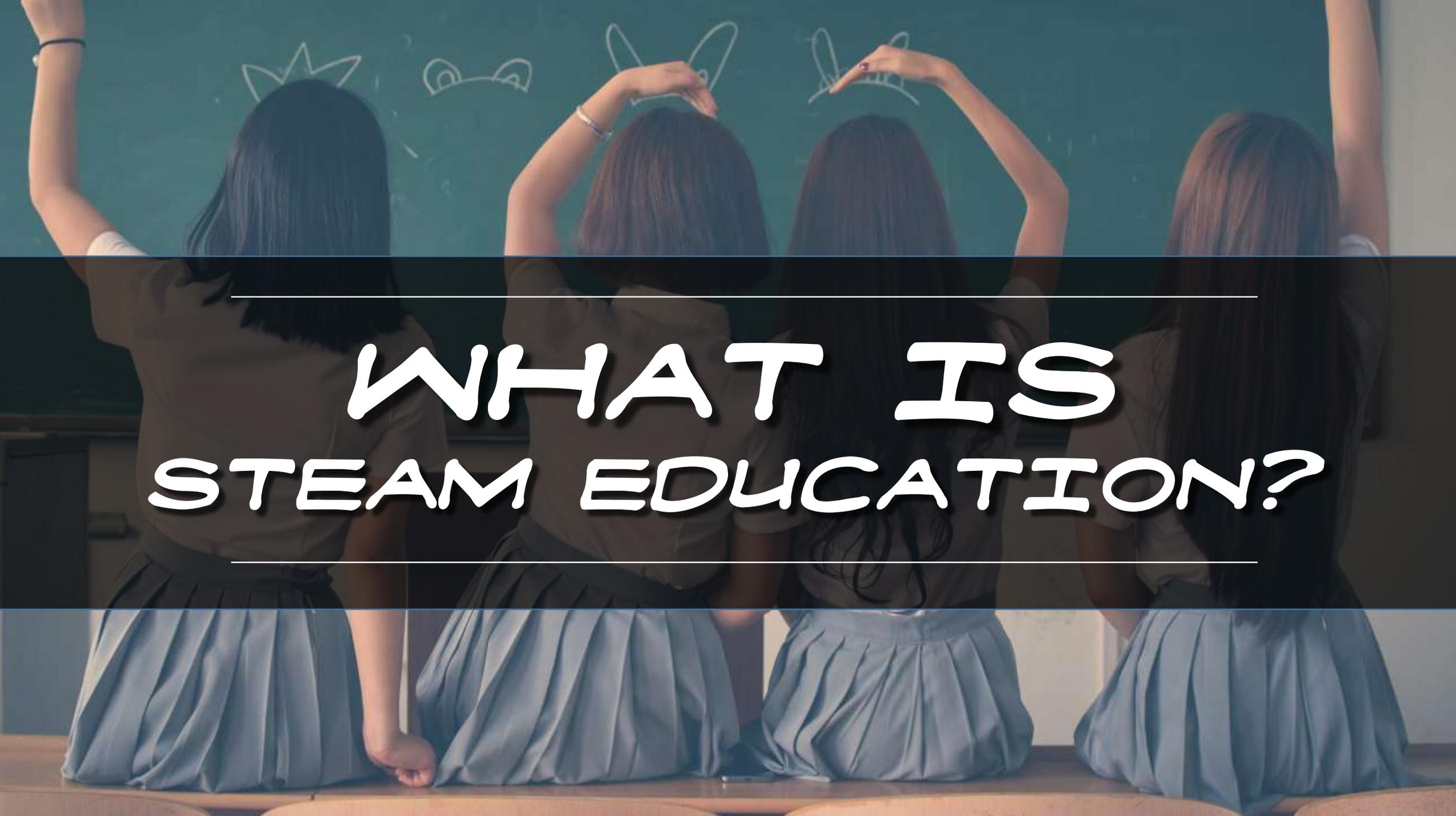


Develop Partnerships

Enrich STEAM classes

Support our Workforce & Statewide
Economic Development

Empower student success

A photograph of four cheerleaders from behind, sitting on a wooden bench in a classroom. They are wearing dark brown short-sleeved shirts and light blue pleated skirts. Their arms are raised, and they are looking at a green chalkboard. On the chalkboard, there are four simple line drawings: a crown, a pair of bunny ears, a pair of wings, and a crown. The text "WHAT IS STEAM EDUCATION?" is overlaid in the center in a white, bold, sans-serif font with a drop shadow. Two thin white horizontal lines are positioned above and below the text.

WHAT IS STEAM EDUCATION?



HEADING TO
SCHOOL
60 COLLEGE
LOCATIONS

GW LISK Co. Inc **NOW HIRING**

**Production
Openings**

- CNC Machinists
- Assembly/Operators
- Skilled Trades

Apply Online Today
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HEADING TO
SCHOOL
60 COLLEGE
LOCATIONS

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Production Openings

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- Assembly/Operators
- Skilled Trades

Apply Online Today
www.gwlisk.com/lisk-careers



JOIN OUR TEAM

harris.com/engineers



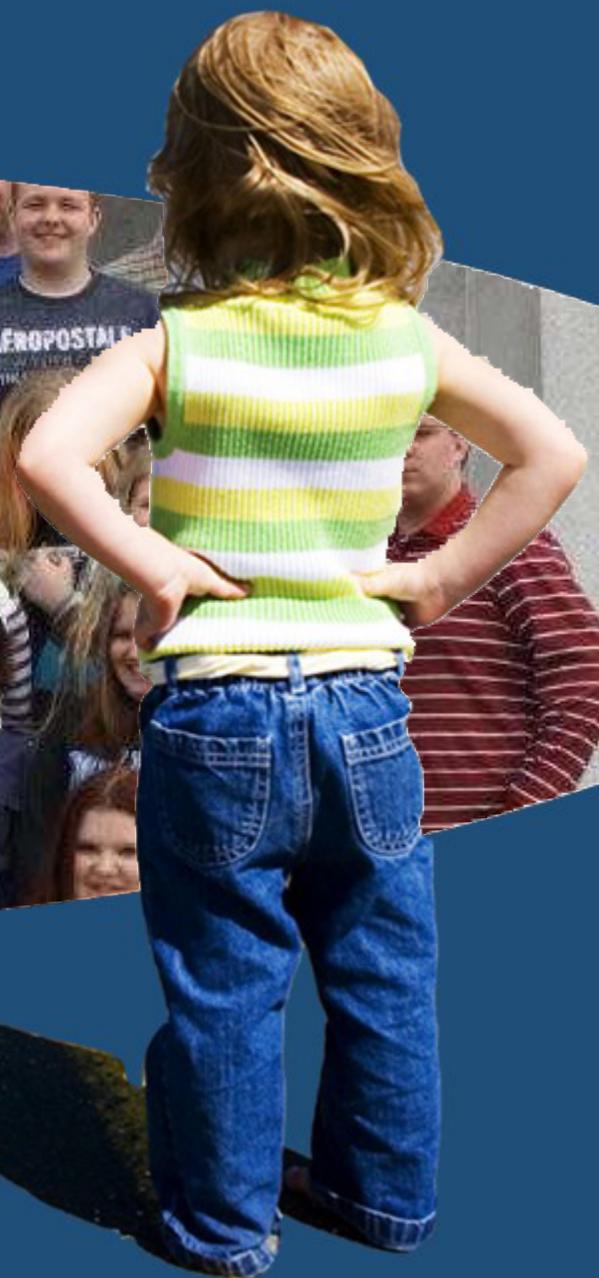
HARRIS

2 . 2 . 7

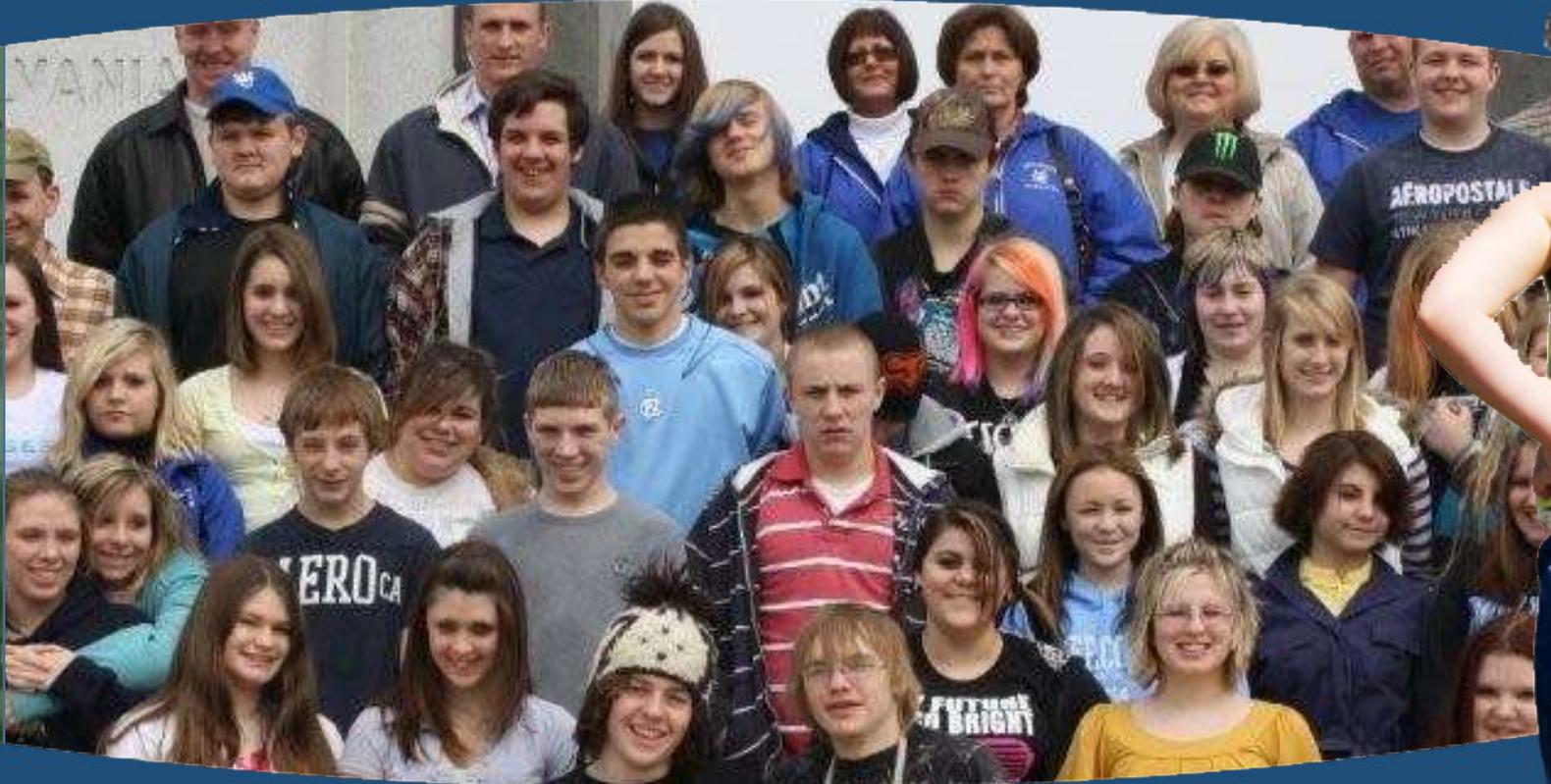


82.7%





17.3%



WORKFORCE
MILITARY
BASEMENT MAN CAVE



47%



WHERE DO WE GO
FROM HERE?



KNOW YOUR

WHY



New Career Paths

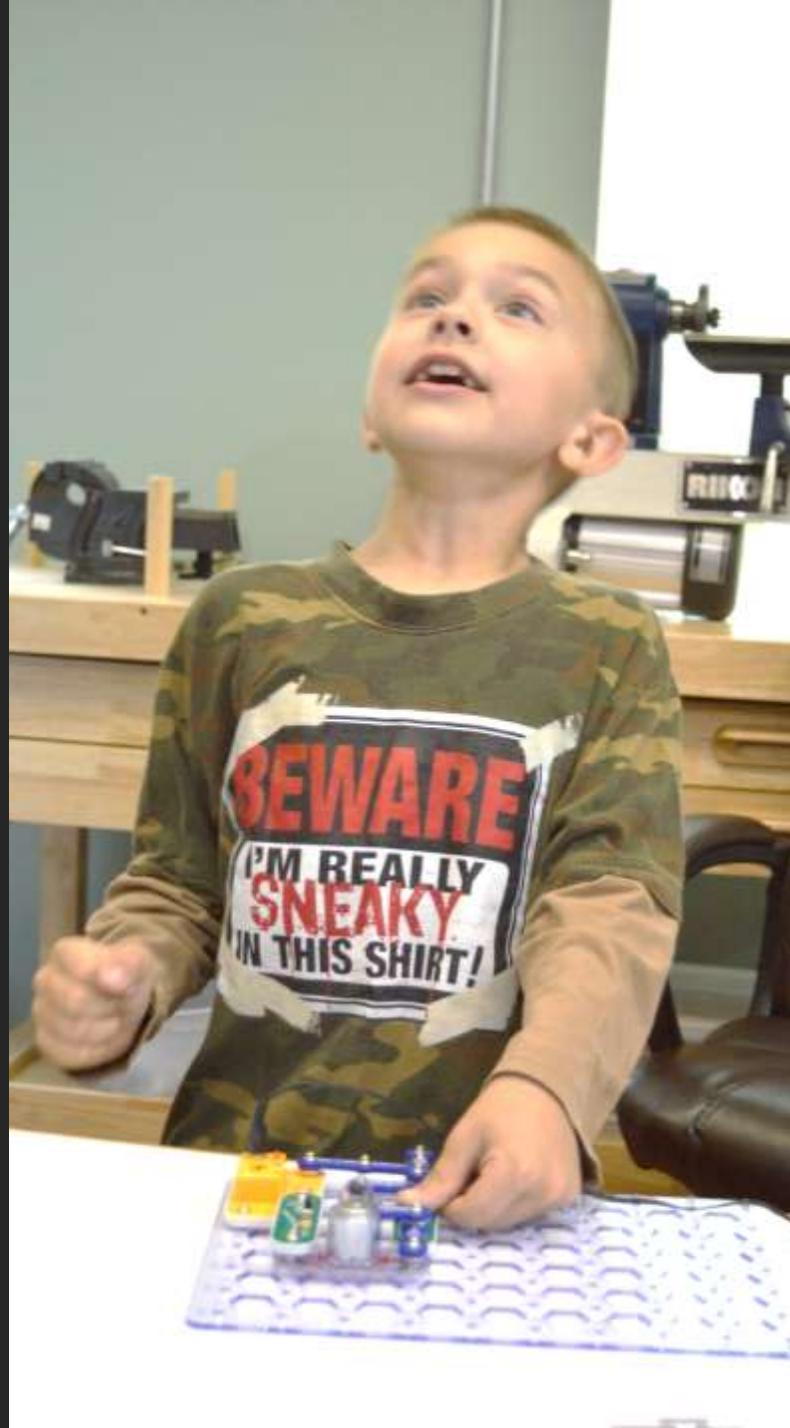
Problem-Solving

Empowerment

Practice for Life

Inspiration

Build Confidence







RESOURCES

MAKING STEAM HAPPEN



PROJECTS

MAKING IT COME TO LIFE



CORSE WOOL

FINE WOOL

ALPACA

CASHMERE

SILK

LINEN

COTTON

POLYESTER



machinelearningforkids.co.uk

Smart classroom

Create a smart assistant in Scratch that lets you control virtual devices.

Teach a computer to recognise the meaning of your commands



Difficulty: **Beginner**

Recognising: **text**

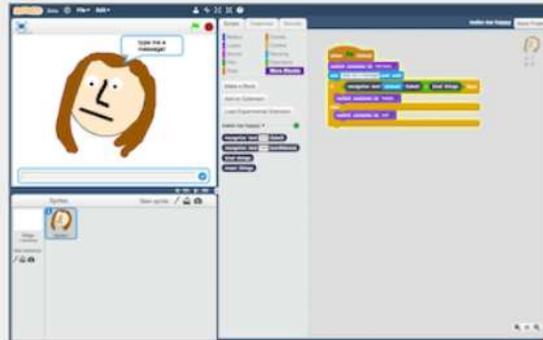
Tags: digital assistants, supervised learning

[Download](#)

Make me happy

Create a character in Scratch that smiles if you say nice things to it and cries if you say mean things to it.

Teach a computer to recognise compliments and insults



Difficulty: **Beginner**

Recognising: **text**

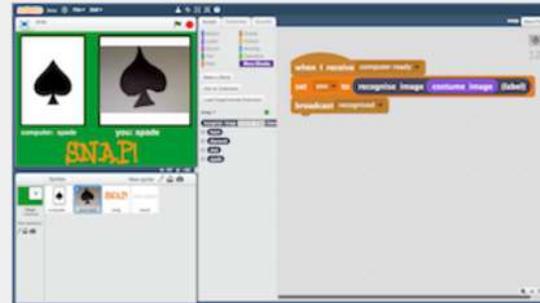
Tags: sentiment analysis, supervised learning

[Download](#)

Snap!

Make a card game in Scratch that learns to recognise pictures of your card.

Teach a computer to recognise what icons look like



Difficulty: **Beginner**

Recognising: **images**

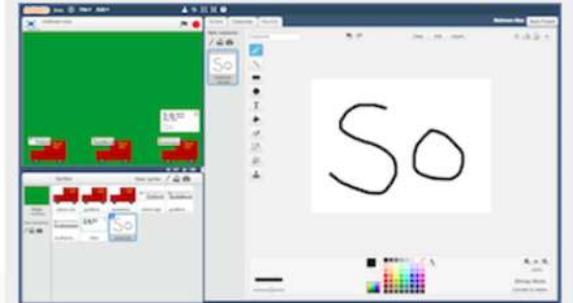
Tags: image classification, supervised learning

[Download](#)

Mailman Max

Make a postal sorting office in Scratch that can recognise handwritten postcodes on envelopes.

Teach a computer to recognise handwriting



Difficulty: **Beginner**

Recognising: **images**

Tags: optical character recognition, handwriting recognition, image classification, supervised learning

[Download](#)

tryengineering.org

TryEngineering.org | Accreditation.org | TryNano.org | TryComputing.org | IEEE Spark v Select Language



TryEngineering

Main Menu v

🔍

Become an Engineer +

Find your major and get involved



Find a University +

Over 3100 universities in over 75 countries



Lesson Plans ✕

135 PDFs
22 million downloads



Ages

4 - 7 | 8 - 12 | 12 - 14 | 14 - 18

Category

Select a Category ▼

- 📍 New Lesson Plans
- 📌 Most Popular
- ↔ All Lesson Plans

teachengineering.org

The screenshot shows the TeachEngineering website interface. At the top left is the logo "TeachEngineering STEM curriculum for k-12". To the right, there is a navigation bar with links: "Check out MyTE", "MyTE", and social media icons for Twitter, Facebook, and YouTube. Below the navigation bar is a search bar and a menu with options: "BROWSE", "ABOUT TE", "SOCIAL", "ABOUT ENGINEERING", "GET INVOLVED", and "EDUCATIONAL STANDARDS". The "EDUCATIONAL STANDARDS" menu is open, showing a list of options: "Browse by Educational Standards", "Common Core Math", "International Technology and Engineering Educators Association", and "Next Generation Science Standards". The main content area is titled "Browse by Standards" and features a "Narrow Results" section. This section includes a "Standards Source Organization" dropdown menu with a list of organizations: Montana, National Council of Teachers of Mathematics, National Science Education Standards, Nebraska, Nevada, New Jersey, New Mexico, New York (highlighted), North Carolina, and North Dakota. A tooltip message reads: "To get started, select the standards source organization. Only organizations for which TeachEngineering has assigned curricula are listed." At the bottom of the page, there is a footer with links for "FAQs", "Policies", "Contact Us", "Sponsors", and "Sitemap", along with a disclaimer: "and this website constitutes acceptance of our Terms of Use and Privacy Policy". The footer also features the logo and name of the "Integrated Teaching & Learning Program" at the "UNIVERSITY OF COLORADO BOULDER".

The sidebar titled "Narrow Results" contains several filter sections. At the top is a search bar labeled "Search terms/standards" with a magnifying glass icon. Below this is the "Curriculum Type" section with checkboxes for "Activity" (checked), "Lesson", "Curricular Unit", "Sprinkle", and "Maker Challenge". A text block asks: "What's the difference between lessons, activities, units, sprinkles, and maker challenges?". The "Grade Level" section features a slider for "Grades K - 12". The "Subject Area" section has a dropdown menu currently set to "All Subject Areas". The "Engineering Category" section has checkboxes for "Relating science and/or math concepts to engineering", "Partial design", and "Full design". The "Time Required" section has a slider for "0 to 1200+ minutes". At the bottom of the sidebar is a "clear all filters" link.

www.nsta.org/



[Log In]

[Home](#) [About NGSS](#) [The Standards](#) [Curriculum Planning](#) [Classroom Resources](#) [Professional Learning](#) [NGSS News](#)

Curriculum Planning



Introduce a different way of thinking to your classroom

- › [Planning an NGSS Curriculum](#)
- › [Designing Units & Lessons](#)
- › [Selecting Materials](#)
- › [Conducting Assessments](#)

Know Your **WHY**

Why connect with the maker community?

"Through working with the community maker space, we have been able to bring new ideas and skills to our school.

We've been able to transfer the expertise of the many skilled makers who work and play there into our school. It has also increased our confidence as makers.

As we've become more confident makers, our students and colleagues have become more engaged learners. They've taken more risks and stepped outside their comfort zones with us. We look forward to sharing everything we've learned with the community at large."

-Carrie Speranza & Jennifer Jacobson

createmakelearn.blogspot.com/





TIME

MAKING IT FIT INTO AN ALREADY BUSY DAY

Afterschool

During Library

Invite other experts
into the classroom



Accelerate

Increase

Decrease

Optimize

Adapt

Lighten

Elevate

Reinforce

Alleviate

Maximize

Eliminate

Stabilize

Condense

Minimize

Improve

Strengthen



ENGINEERING
VERBS

Using something in the correct way

APPLICATION



A decorative border composed of various colored circles and semi-circles in shades of red, orange, green, blue, purple, and grey, arranged in a pattern around the text.

The Roller Room

Come ROLL around with Ms. Hamilton





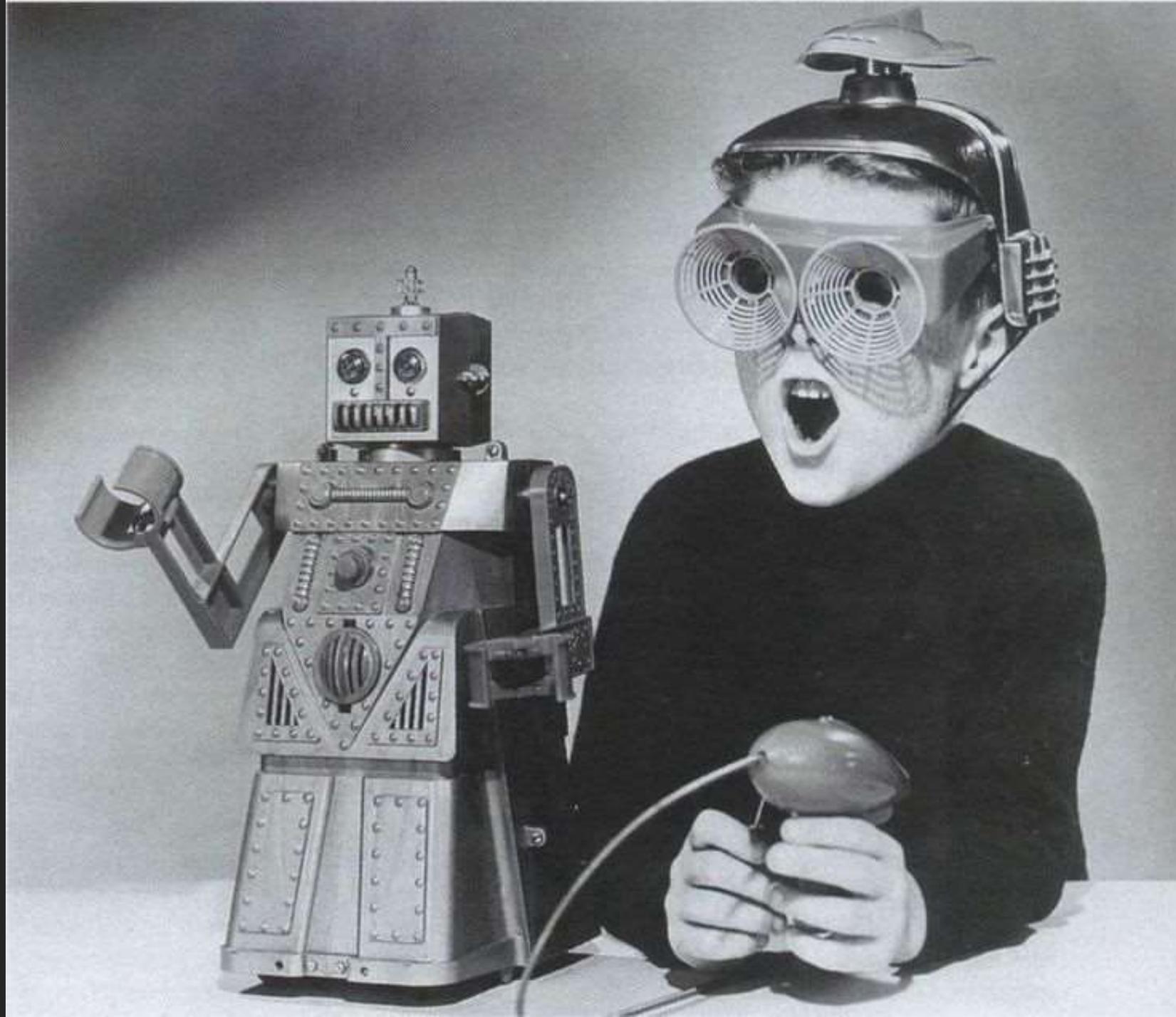
THINGS

MAKING TECHNOLOGIES WORK FOR YOU



THE AMAZING & WONDERFUL VANISHING CABINET







TinkerCAD

3D Slash

Sculptris

A 3D rendered image of a printer, likely a 3D printer, with a bright orange body and black accents. The printer is positioned on a wooden surface. It has a top handle, a spool of blue filament on the left, and a yellow warning label at the bottom. The text 'SketchUp' is overlaid in white on the top part of the printer, 'Fusion 360' is overlaid in white in the middle, and 'Blender' is overlaid in white at the bottom. The printer's body has '3D PRINTER' faintly visible on top and 'da Vinci Mini' on the left side. A yellow warning label at the bottom reads 'WARNING! ALWAYS WEAR SAFETY GLASSES! NEVER TOUCH MOVING PARTS!'.

SketchUp

Fusion 360

Blender



PARTNERSHIPS

MAKING COMMUNITY CONNECTIONS



Parents

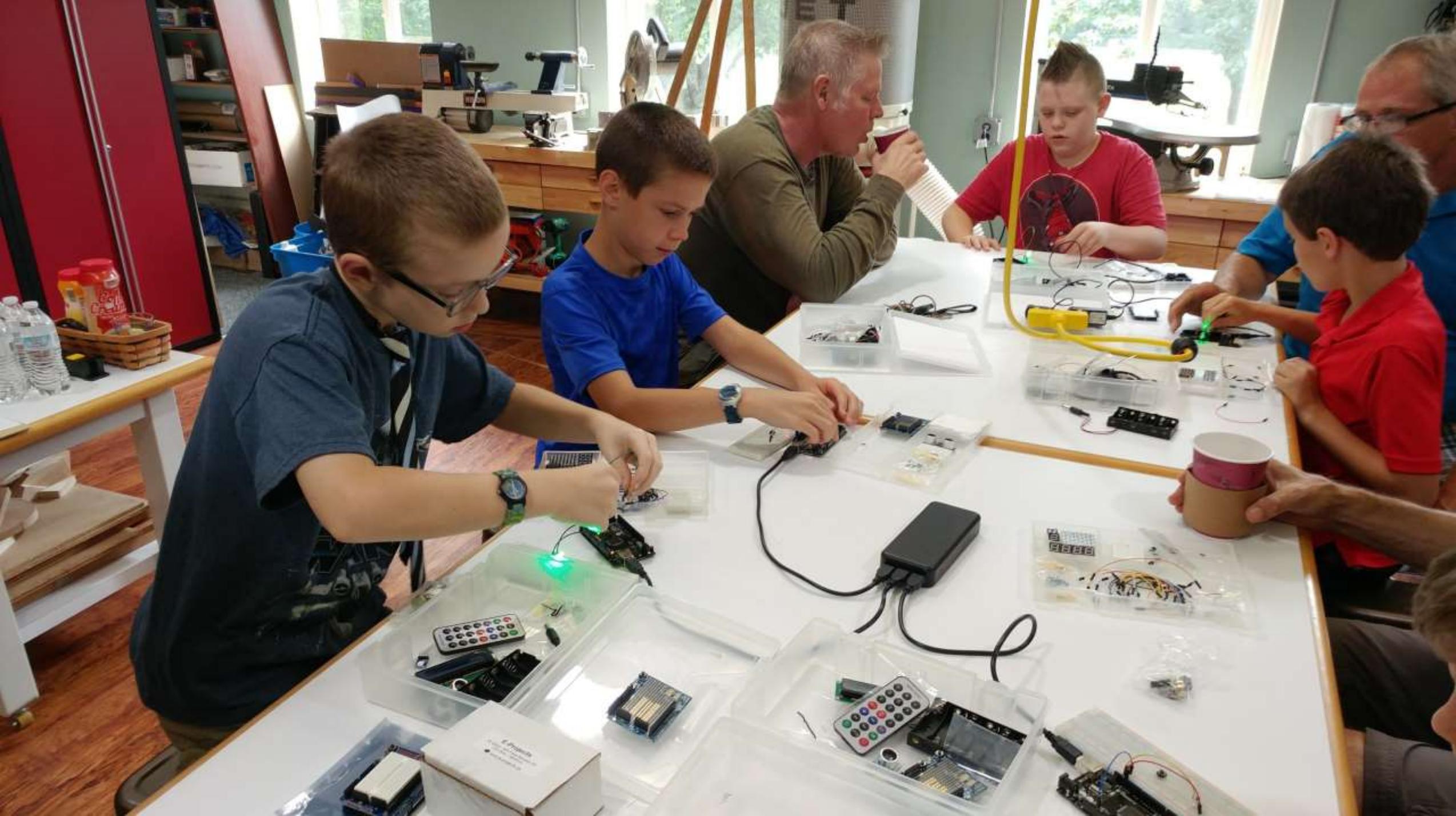
Maker Community

Municipalities

Local Industry Leaders

Empire State STEM Learning
Network

Libraries





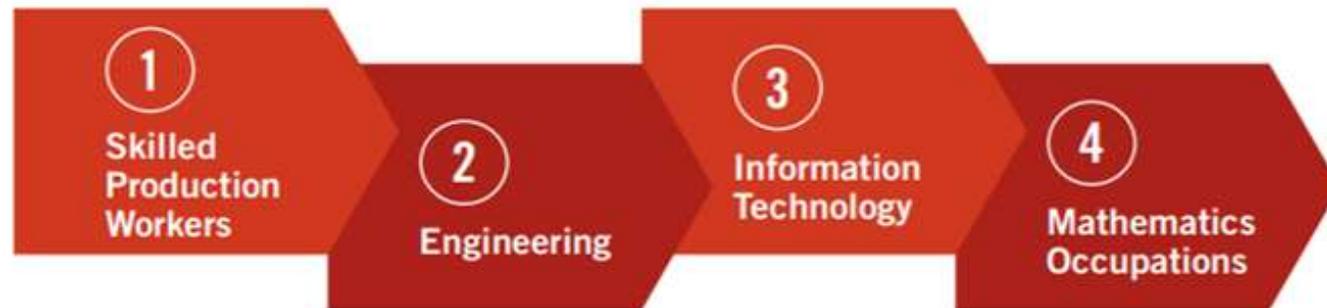
#NYSMAKERS



Regions experiencing most difficulty filling jobs



STEM jobs hardest to fill currently, and projected to have shortages over the next 5-10 years



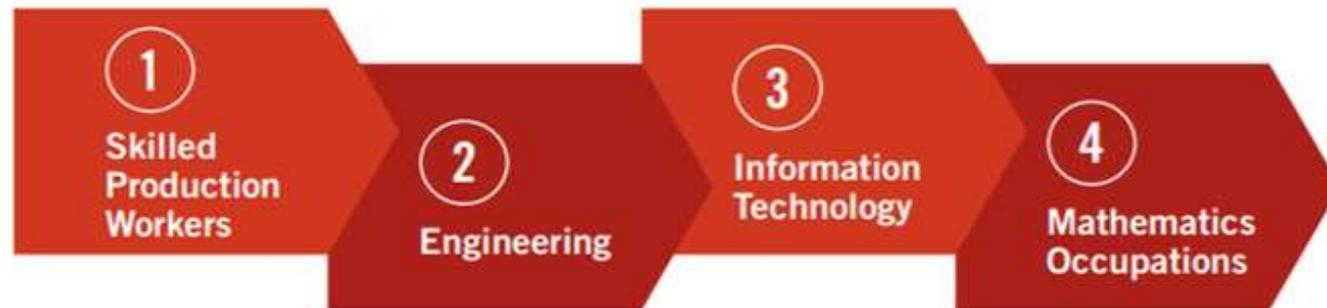
Bridging the STEM Skills Gap: Employer/Educator Collaboration in New York

Issued in 2017 by The Public Policy Institute of New York State

Regions experiencing most difficulty filling jobs



STEM jobs hardest to fill currently, and projected to have shortages over the next 5-10 years



Greatest needs:

Scientific

Technical

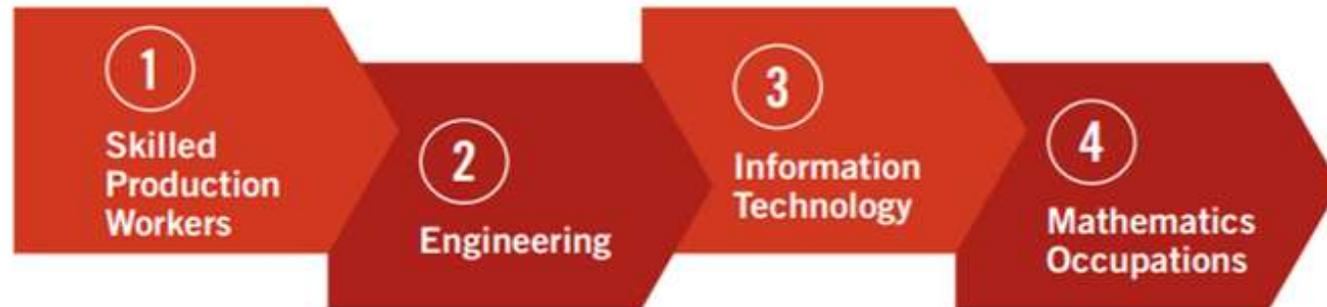
Engineering

Skills

Regions experiencing most difficulty filling jobs



STEM jobs hardest to fill currently, and projected to have shortages over the next 5-10 years

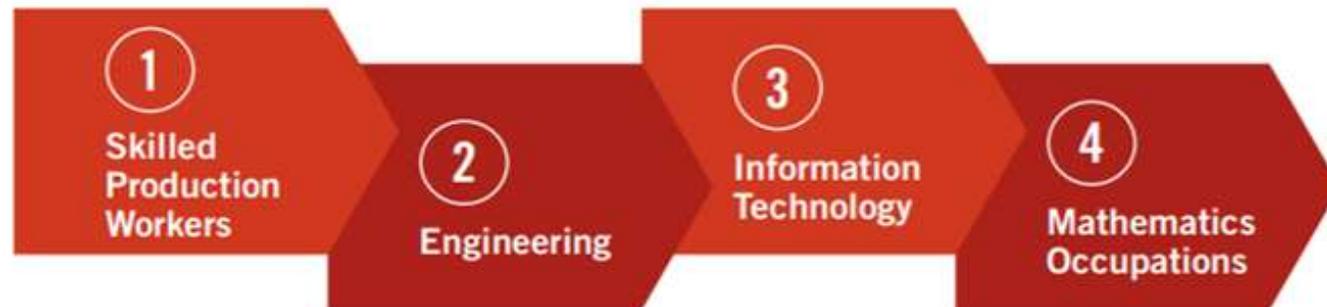


Greatest barriers:
Lack of Talent
Failed Drug Tests

Regions experiencing most difficulty filling jobs



STEM jobs hardest to fill currently, and projected to have shortages over the next 5-10 years



Educational Partnerships:

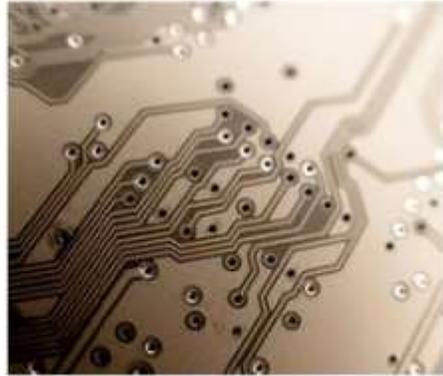
Recruiting Efforts

Enhance their reputation

Have input into
educational policies
and programs

FAME

Finger Lakes **A**dvanced **M**anufacturers' **E**nterprise
Building Minds that Make It





Careers in STEM: Science, Technology, Engineering and Math

The median wage of Central New York Region STEM occupations is **\$59,970** a year, which is 59 percent higher than the median annual wage of \$37,730 for all workers in the region.

Do you want to make the world a better place to live?

If you are concerned about changes in the environment, creating better medicines and building new gadgets to make everyday life easier, consider a Science, Technology, Engineering and Math (STEM) education. A STEM education can give you the tools to help solve some of today's most perplexing problems.

Do you wonder what puts the thrill in a roller coaster?

It takes both design and engineering skills to develop a thrill ride. If you are curious about how things work and are a creative and original thinker, a STEM career could be for you.

Do you imagine solving crimes using the latest technology?

You could be a Forensic Science Technician in your local area or travel the world tracking the latest infectious disease. Professionals in STEM careers protect and serve people around the world.

STEM Careers Pay! Central New York Region

Occupation	Annual Median Wage*
Architects, Except Landscape and Naval	\$87,220
Athletic Trainers	\$47,440
Automotive Service Technicians and Mechanics	\$35,410
Chemists	\$69,210
Clinical, Counseling, and School Psychologists	\$69,340
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	\$51,460
Dental Hygienists	\$66,630
Diagnostic Medical Sonographers	\$69,260
Electrical Engineers	\$91,240
Emergency Medical Technicians and Paramedics	\$33,200
Family and General Practitioners	\$198,990
Industrial Machinery Mechanics	\$55,360
Information Security Analysts	\$78,260
Licensed Practical and Vocational Nurses	\$38,850
Machinists	\$43,180
Medical and Clinical Laboratory Technologists	\$56,420
Network and Computer Systems Administrators	\$68,040
Nurse Practitioners	\$99,160
Pharmacists	\$132,730
Physical Therapists	\$75,720
Physician Assistants	\$108,430
Registered Nurses	\$62,420
Software Developers, Applications	\$81,790
Veterinarians	\$102,300

New York State
State of Opportunity

Careers in
STEM
Fact Sheets

AGGREGATE CLUSTER - MANUFACTURING

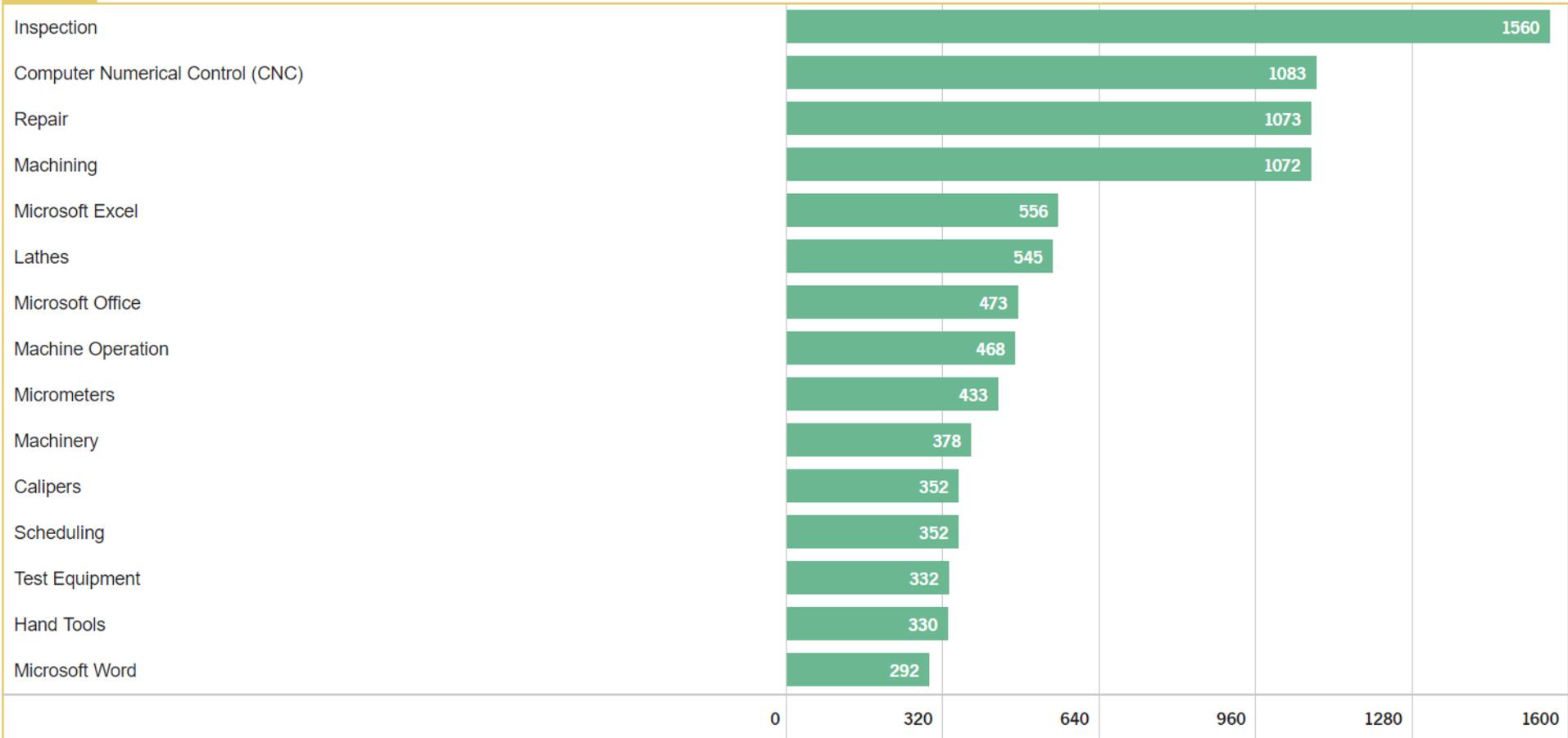
AGGREGATE CLUSTER - MANUFACTURING - FINGER LAKE

1. OCCUPATIONAL GROUP
DEFINITION

2.

6. REAL-TIME LABOR MARKET
DATA

ABOUT



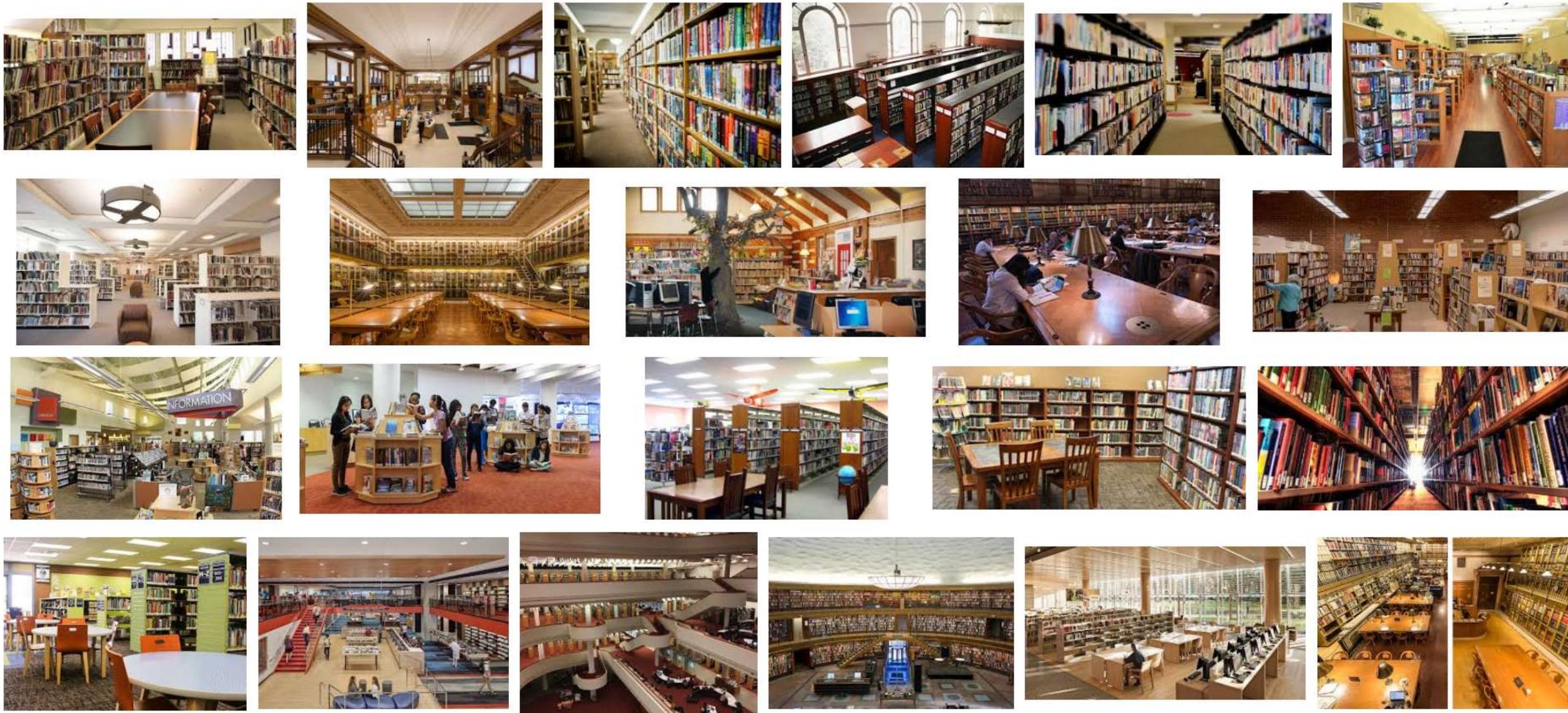


STIGMA

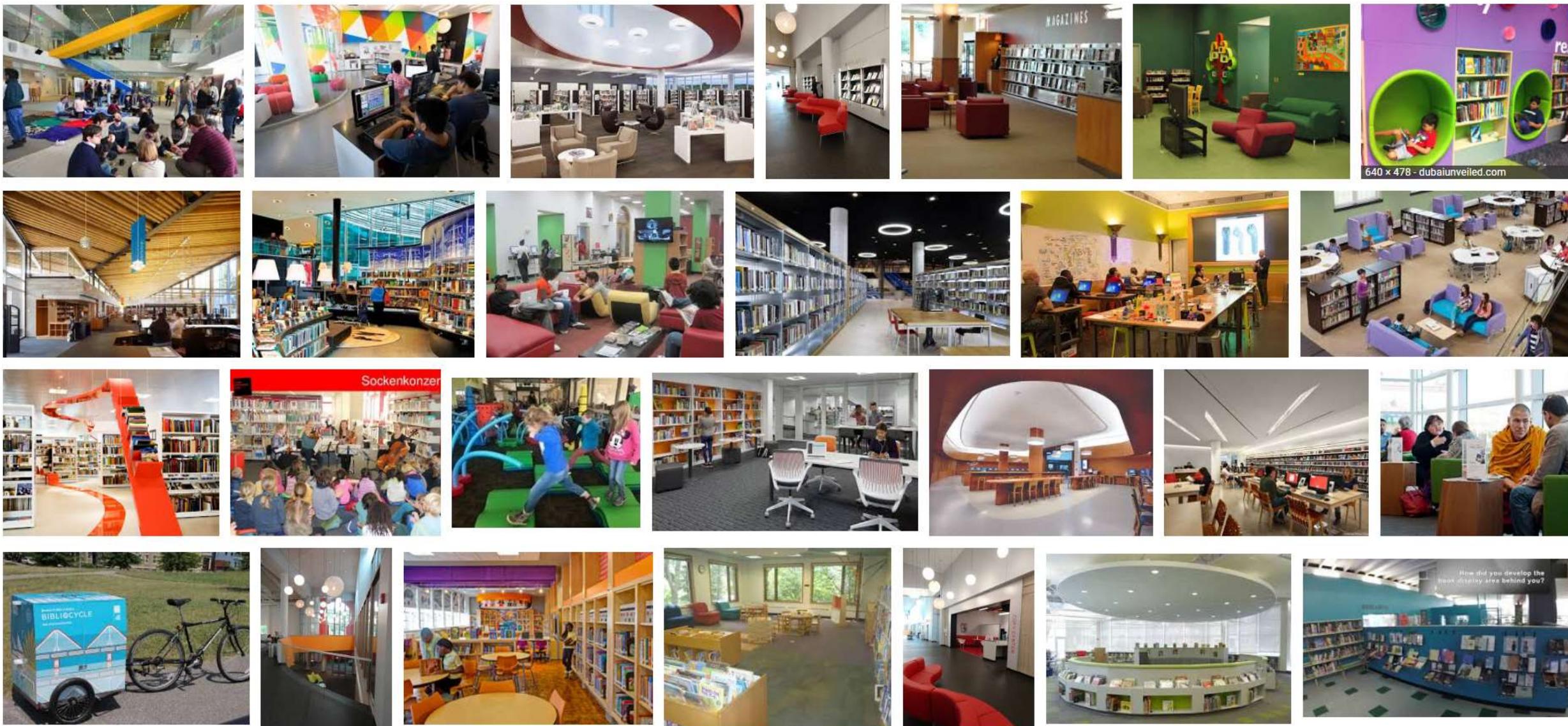
OCCUPATIONAL
PROGRAMS



EMPIRE STATE STEM LEARNING NETWORK



“PUBLIC LIBRARY”



"INNOVATIVE PUBLIC LIBRARY"

LIBRARIES
ARE
EDUCATION

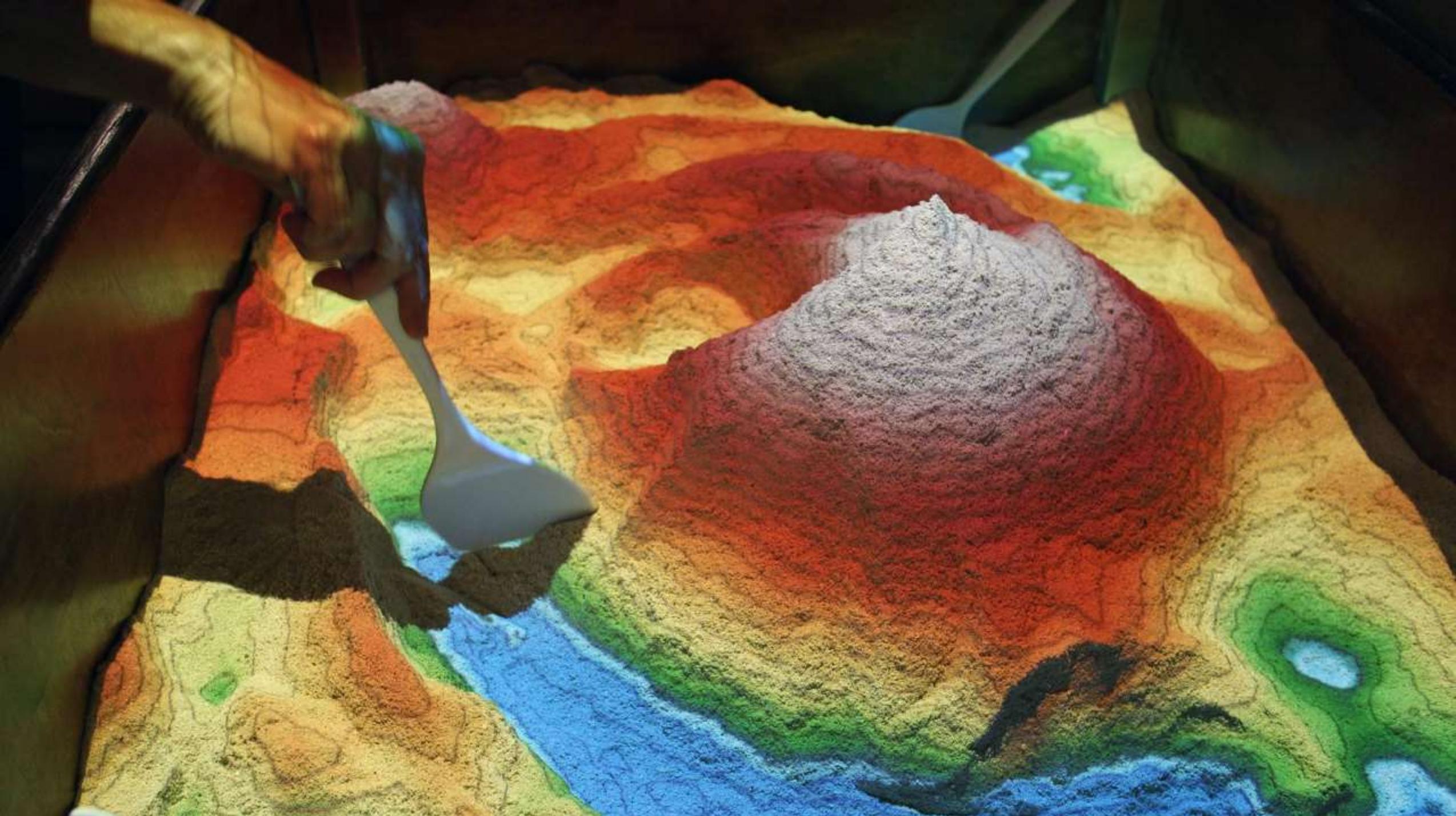










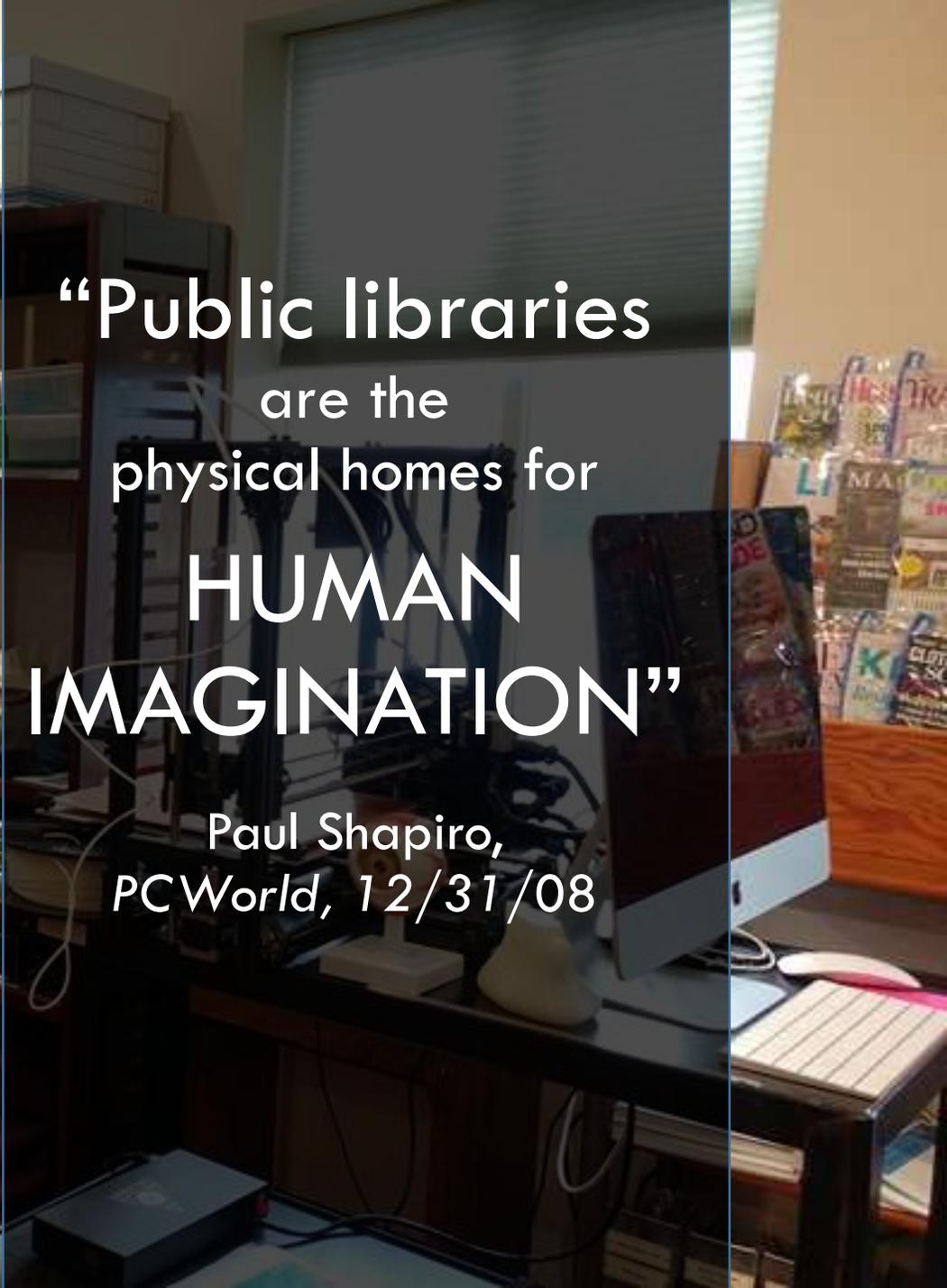




Tilt Brush

by Google





“Public libraries
are the
physical homes for
**HUMAN
IMAGINATION**”

Paul Shapiro,
PCWorld, 12/31/08



CHALLENGES

MAKING IT ALL HAPPEN

Know that you
don't need to be
an expert.



Help others to
overcome fear.



“Elementary teachers teach a massive range of concepts, behaviors and social norms to young children... that it’s nearly impossible to have specialized knowledge in all of them. As a result, early educators too often feel that they aren’t prepared to tackle science... technology or engineering, [or] even ...math. In fact, students majoring in elementary teaching show higher levels of math anxiety... they pass that anxiety on to girls at much higher rates.”

**STEM STARTS EARLIER
THAN YOU THINK
- FORBES, JULY 24, 2018 -**

Remove all
preconceived notions
of what you can
and/or can't (*or aren't
supposed to*) do.



Be aware
that not everyone
will be as open
to change
as you might be.



Think beyond
the outside of that
proverbial box.



Start meaningful
conversations.



Promote
scientific inquiry.



Assess the layout
of your
educational space.



Ask WHY?



Advocate.

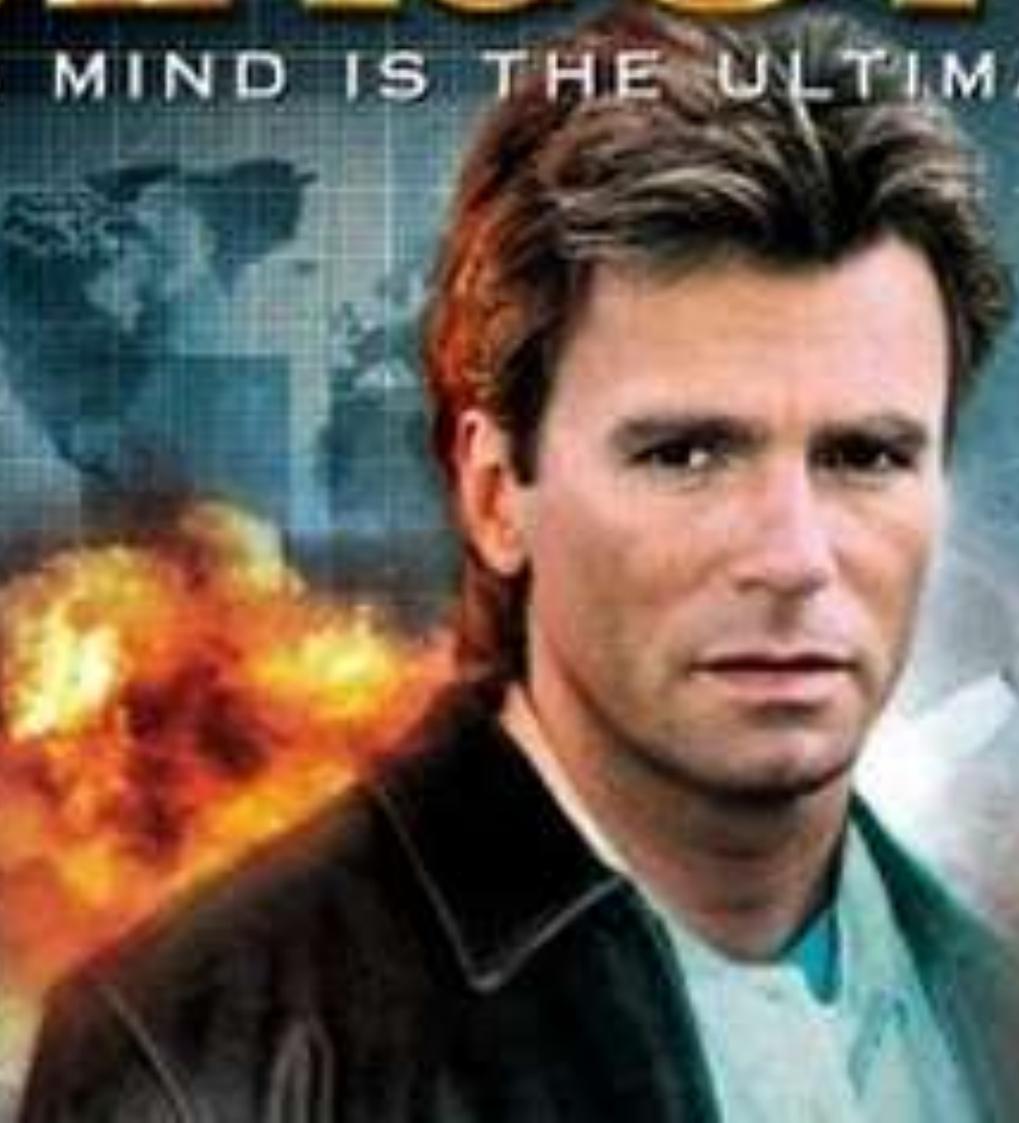


Collaborate.
Collaborate.
Collaborate.



MACGYVER

HIS MIND IS THE ULTIMATE WEAPON



Leah Hamilton

Executive Director

Phelps Library & STEAM Lab Makerspace
8 Banta St, Ste 200, Phelps NY 14532
315.548.3120

PCMLdirector@gmail.com

www.phelpslibrary.org

www.facebook.com/PhelpsLibrary/

[#the_phelps_library](https://www.instagram.com/the_phelps_library)

Presentation:

<https://www.phelpslibrary.org/NYSSEC>

