Sowing the Seeds of STEM Through Techno-Fashion

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pillar

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Outline

Introduction

Why STEM?

What is STEM?

Current State

How can I help?

Open Discussion

Introduction

“We are the music makers, and we are the dreamer of dreams.”
O’Shaughnessy and Willy Wonka

- Masters in Acoustic Engineering
- Corporate
- Higher Ed.
- K-12

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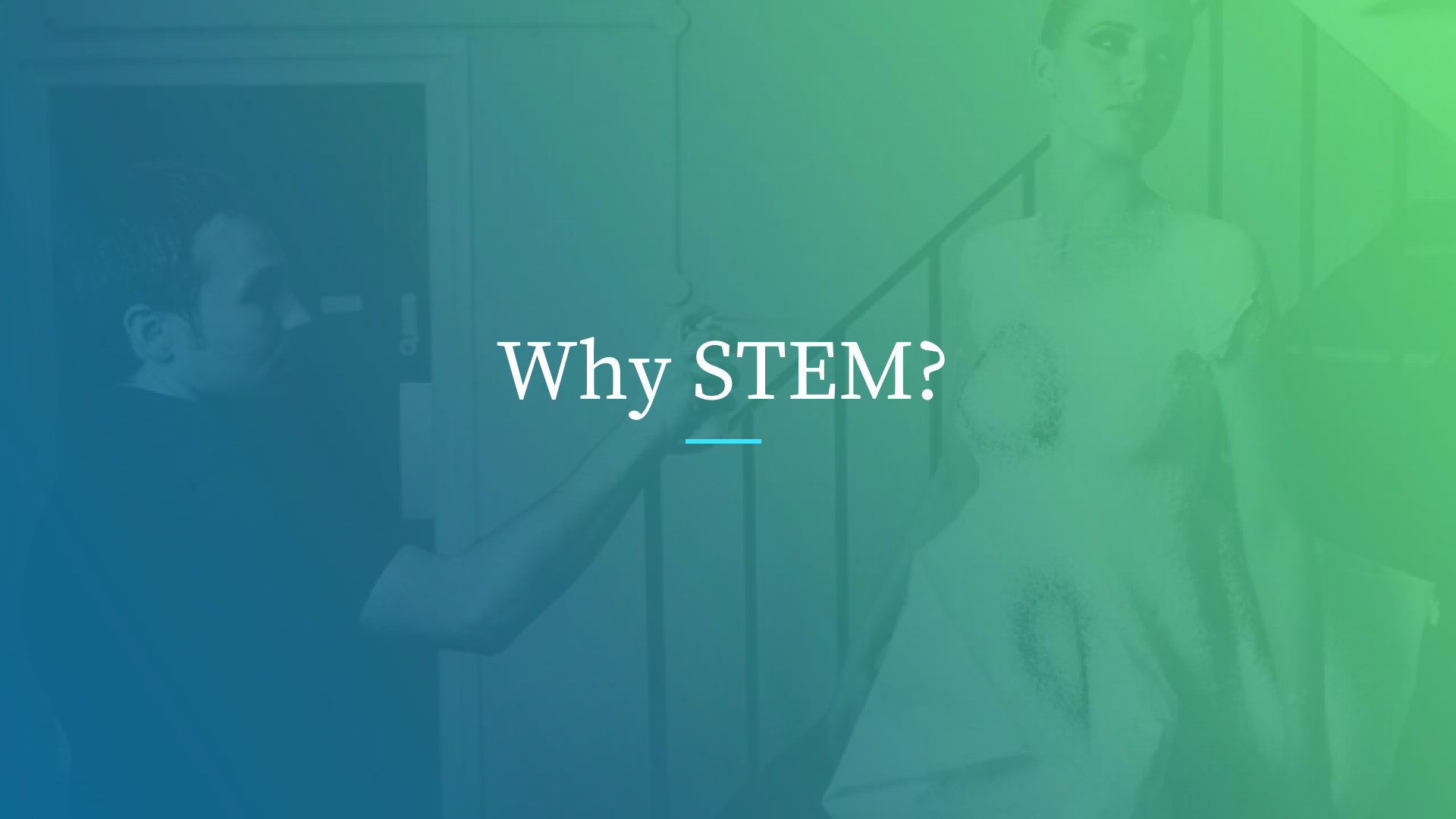


Why STEM?

Why STEM?

Technology Changing at Lightening Speed

“65 percent of today’s school children will eventually be employed in jobs that have yet to be created.” U.S. Department of Labor report

Top 4 IT Jobs in 2017 (Forbes report)

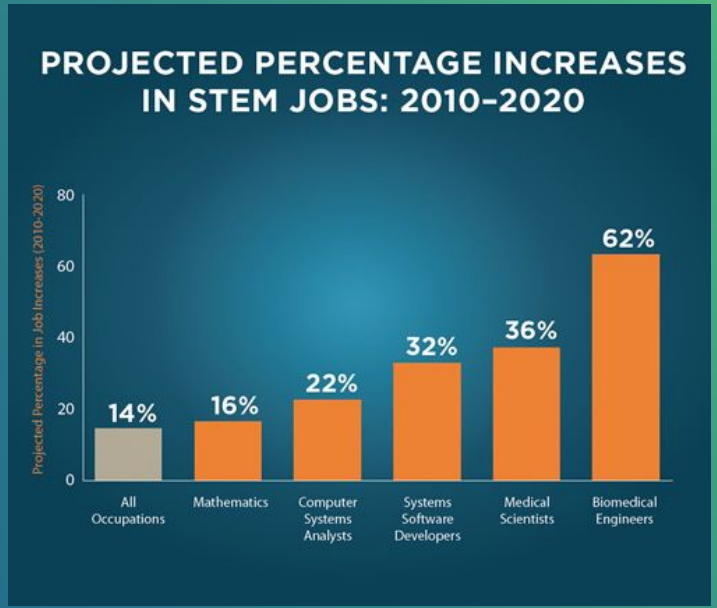
- Data Diplomat
- App Artist
- Cloud Coaches
- Security Strategist

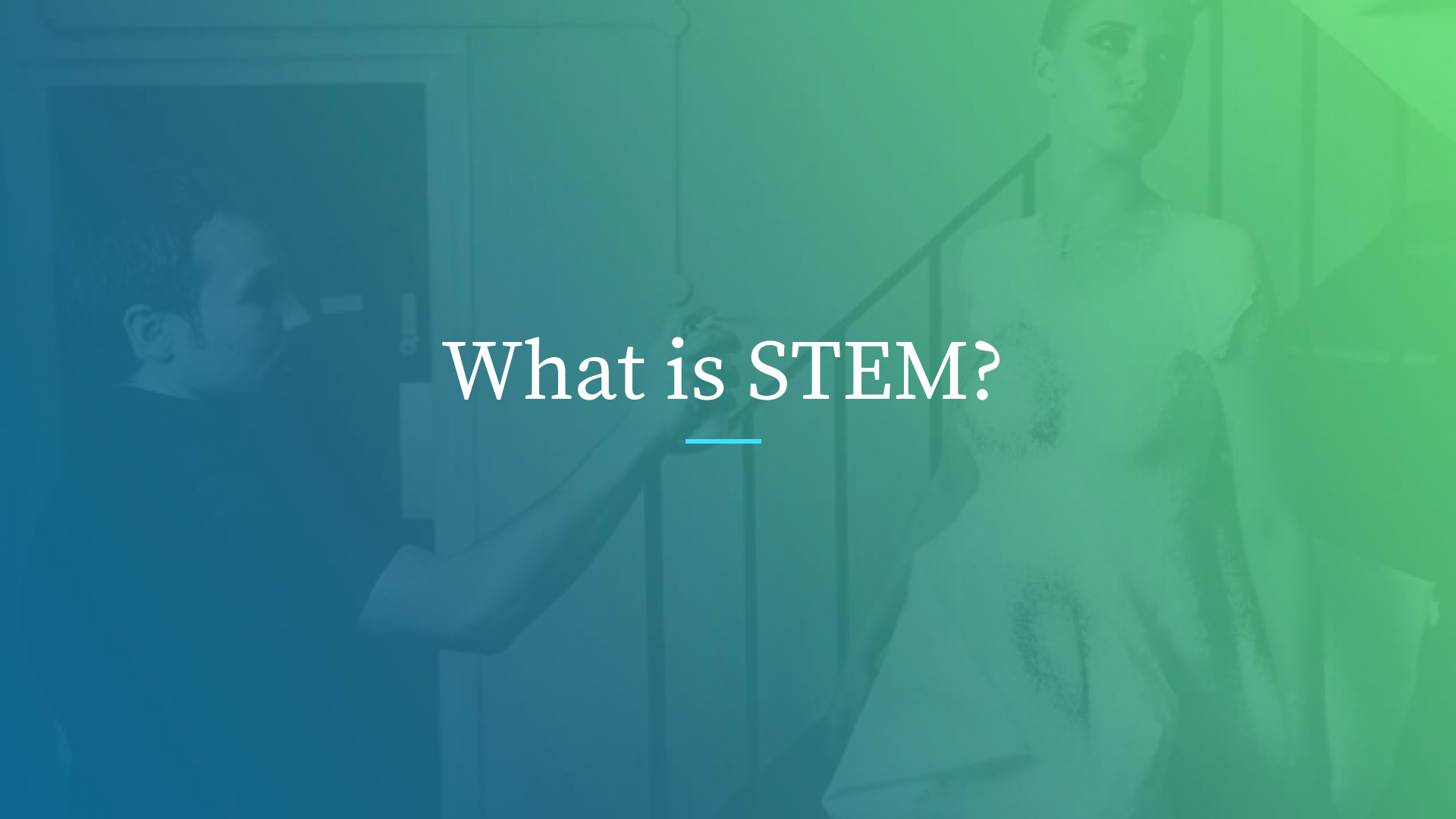
From 2008 to 2018, STEM jobs are expected to grow 17.0 percent compared to just 9.8 percent for non-STEM jobs.

STEM career field workers maybe on average $9/hour more than non-STEM field workers.

STEM Careers

"The market for STEM jobs is bigger, actually significantly bigger, than most other studies have reported in the past," says Burning Glass Chief Executive Officer Matt Sigelman. "We also found that graduates in STEM fields have much better prospects, both because they are competing for a large number of jobs...but also because they make substantially more."





What is STEM?

Wanted:

Soft Skills!

Figure 1: Employers rate the importance of candidate skills/qualities

Skill/Quality	Weighted average rating*
Ability to work in a team structure	4.55
Ability to make decisions and solve problems	4.50
Ability to plan, organize, and prioritize work	4.48
Ability to verbally communicate with persons inside and outside the organization	4.48
Ability to obtain and process information	4.37
Ability to analyze quantitative data	4.25
Technical knowledge related to the job	4.01
Proficiency with computer software programs	3.94
Ability to create and/or edit written reports	3.62
Ability to sell or influence others	3.54

*5-point scale, where 1=Not at all important; 2=Not very important; 3=Somewhat important; 4=Very important; and 5=Extremely important

Source: *Job Outlook 2014*, National Association of Colleges and Employers

National

National Association of Colleges and Employers

Labor Criteria Rankings	
General applicant flow for available positions	3.2
Availability of skilled workers	2.7
Availability of unskilled workers	3.6
Worker productivity	3.8
Worker reliability	3.6
Soft skills	3.1
Worker reading, writing, and math skills	3.4
Teamwork skills	3.7
Flexibility/adaptability to change	3.5
Critical reasoning skills	3.1
Education attainment of applicants	3.5
Experience level of applicants	3.1
Employee turnover	3.6
Employee absenteeism	3.5
Employee attrition	3.6

Regional

Columbus 2020

Top Desired Skills
Communication
Collaboration
Prioritize
Critical Thinking
Creativity
Grit
Risk
Technical Knowledge

Local

City of Dublin, Ohio

Ohio State University

SELECTION OF STUDENTS				
Factor	Very Important	Important	Considered	Not Considered
Rigor of Secondary School Record	X			
Academic GPA	X			
Standardized Tests	X			
Class Rank	X			
Recommendations			X	
Essay		X		
Interview				X
Level of Applicant's Interest				X
Extracurricular Activities		X		
Volunteer Work		X		
Particular Talent/Ability		X		
Character/Personal Qualities			X	
First Generation to Attend College		X		
State Residency			X	
Geographic Residence			X	
Relation with Alumnus				X
Religious Affiliation/ Commitment				X
Ethnicity			X	
Work Experience		X		

What Colleges Want

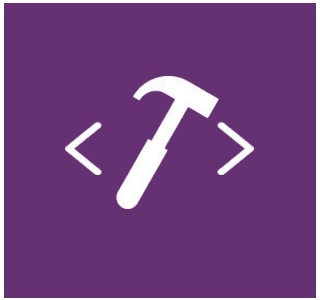
[CollegeData.com]

Core Skills for College, Career & Life

Ideal Student

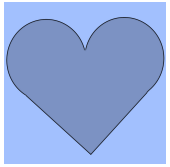
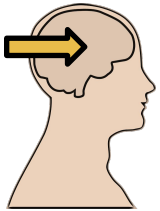
Life Skills and Beyond

- Financial Literacy
- Caring for Clothes
- Food Skills
- Agility/Flexibility
- Time Management
- Handling Stress

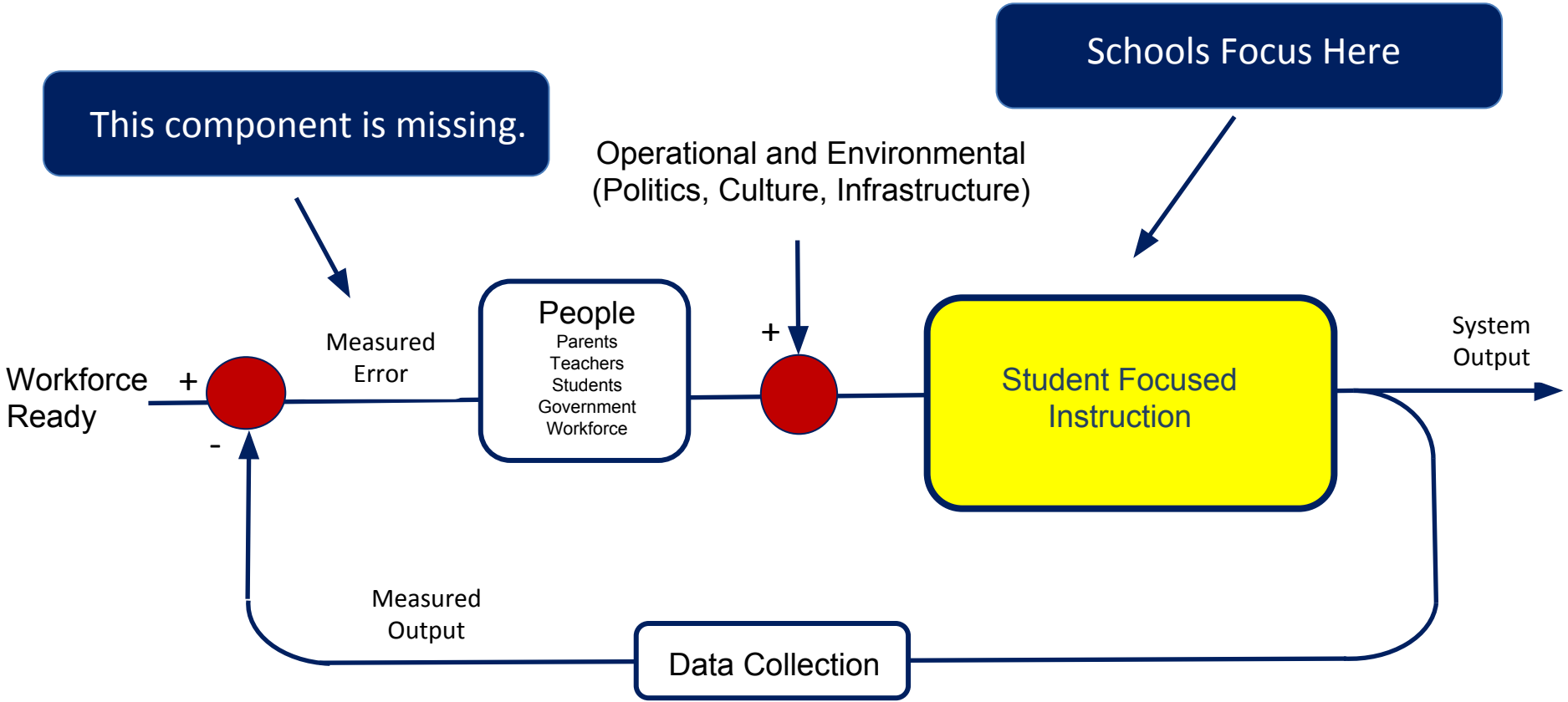


Current State

Past, Present and Future of Learning Part 1

Past (B.C. era)	 Learn by Doing (Constructivism)	 Informal & Passion Based	 Collaborative
Current	 Objectivism	 Formal & Forced	 Siloed
Future	 Immersion (Constructivism)	 Adaptive & Passion Based	 Social Peer to Peer

Agile Learning Eco-System



NEED: Corporations Drive Education

Education

PUSH

PULL

Corporations

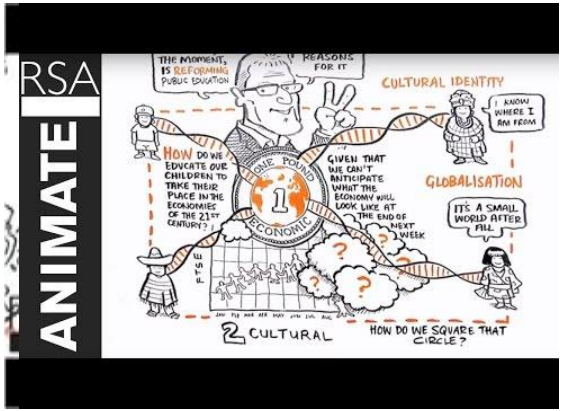
How can I help?

STEM Components

Examples and Research

Arts

(Start at 2 min)



Creativity

(Start at 8:45 min)

Innovation

(Start at 7:30 min)

Pipelines to Careers

Wearables and Techno-Fashion is of high interest to kids! Using passion to teach the fusion of art and technology has proven success.

Pillar Technology along with Columbus College of Art and Design and Gap offered a Techno-Fashion workshop for CoolTechGirls. CoolTechGirls is an organization for girls 8-18 years old interested in STEAM fields.

Pillar's

Techno-Fashion

pillar PRESENTS

Techno-Fashion Workshop

Education

How to Engage

Locate Organizations in your Town

- Tech Corp, Girl Scouts, First Robotics, National Robotics, Invention Convention, Science Fair

What is the Passion Topics?

- Kids, Community, YOU

Partnerships with other Companies

- Co-organize, sponsors, etc.

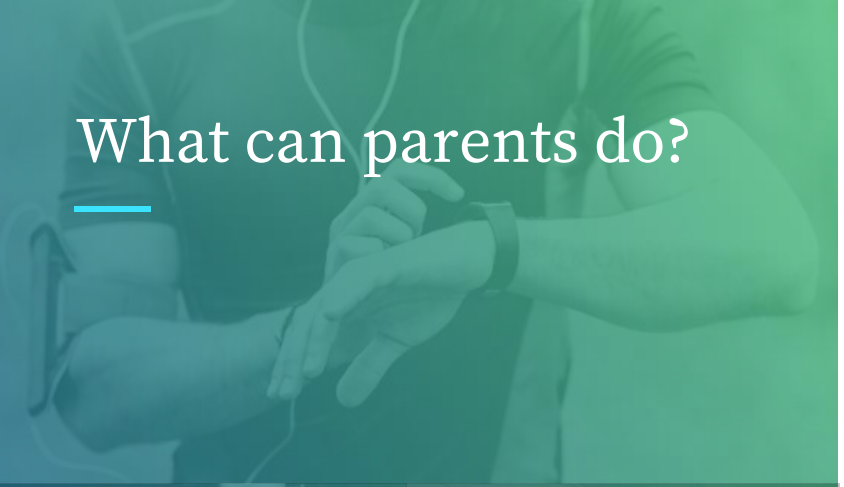
Venue/Event

- Workshop, Camp, Mentoring

Contact Schools

- Teachers, Principals, Administration

What can parents do?



- Fight or Flight
  - Don’t smother
  - Provide resources, skillfully
- Approaches
  - Maker Monday, Wondering Wednesday
  - It’s never an answer, it’s a milestone
  - The Negotiator
  - Risk Management - Build Experiences and talk about it.
  - Prioritize It
  - Reverse Engineering
  - Parents vs. Robbers (Problem Solving)
  - Creative Spaces
  - To be or not to be (What career would…..)
  - Experience It!

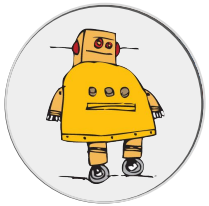
Resources

Adafruit & SparkFun

https://www.adafruit.com/
https://www.sparkfun.com/
Excellent tutorials and a plethora of shopping.

Wonderopolis

http://wonderopolis.org/
A wonder a day!



Ted Ed

https://ed.ted.com/
Engaging videos on many educational topics. Kids love it!

Curiosity Machine

https://www.curiositymachine.org/
Design, Build, Test fun projects with scientific background presented. Great community to share!

Open Discussion

Past, Present and Future of Learning Part 2 & 3