From STEM To WorkKeys: Building a SuccessBound Pathway

- Explore the journey from STEM education to becoming Success Bound.
- Discover how to build pathways that lead to student success.
- Learn to create engaging and focused STEM experiences.
- See how STEM is a continuous process, not just a one-time event.

Scott Bloom, Piqua City Schools

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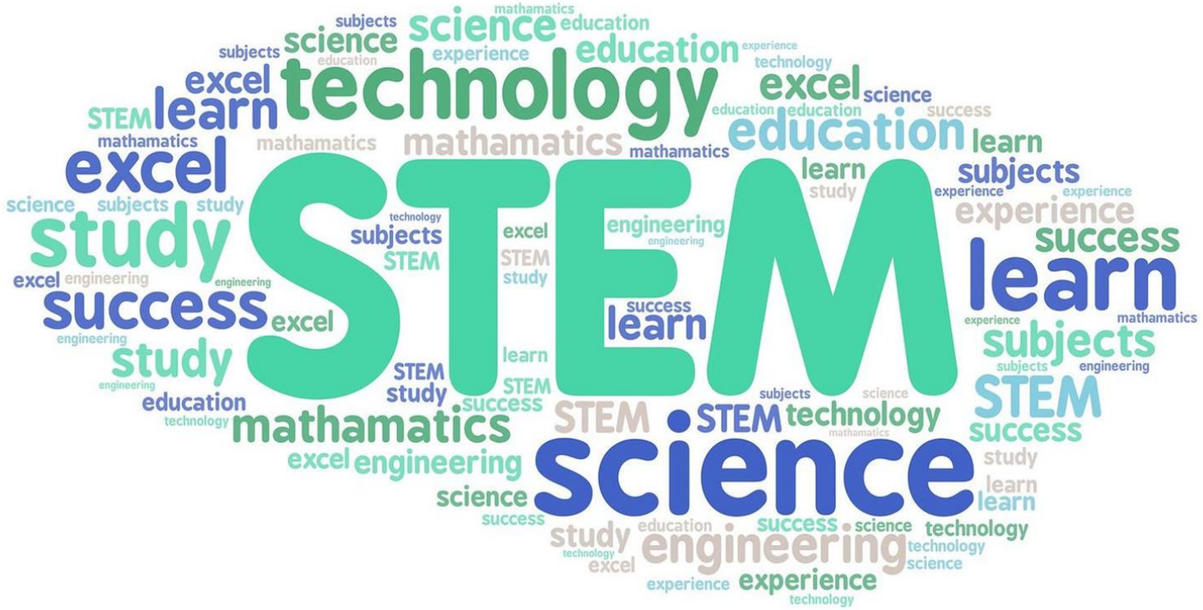

Key Takeaways

1 STEM and Success Bound Skills

Integrate STEM with essential career skills.

2 Pathways for Everyone

Design inclusive STEM pathways.

3 Engaging and Focused

Make STEM learning interesting and relevant.

4 STEM is a Process

View STEM as ongoing development.

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The Importance of STEM

85% of STEM jobs for 2030 are yet to be invented. **STEM is a priority** for K-12 students. 80% of careers will be STEM related, so the Workforce **needs all hands on deck**.

Starting STEM education early is crucial. Preschoolers show varied STEM interests. We **CAN** engage them with early and continue access to STEM Learning.

Learning should be accessible and engaging. Many students find science too hard or feel "bad at it." We MUST change the narrative so students can see themselves in STEM careers.

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STEM Connects Skills

1

Inquiry

Teach kids to ask questions.

2

Solutions

Propose innovative solutions.

3

Testing

Test and improve creations.

4

Sharing

Share their valuable work.

Pillars of Piqua City Schools STEM Program

For ALL Students

Inclusive STEM education that relates to Success Bound Learning.

Design Thinking

Focus on problem-solving, Design Thinking and Learning with Fun!

High-Quality Materials

Provide excellent resources that sequence STEM Learning.

Amazing Teachers

Drive planning and instruction.

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STEM For Every Student

1

K-6 STEM

- **All** students in coordinated STEM experiences.
- Part of “Specials” rotation in grades K-6.

2

7-8 STEM Courses

Tied to CTE Programming in unison with Career Center.

3

9-12 STEM

- Pre-Apprentice Program
- CTE and Work-Based Learning

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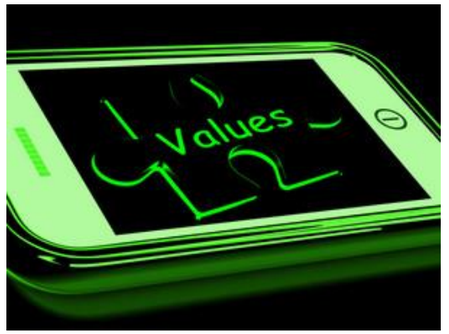
STEM Focus: Core Values



- Focus on Design Thinking, Problem Solving, Collaboration, Enjoyment
  - We use the same language with kindergarten students as we do with seniors
  - All STEM teachers focus on the same core skills and focus on working with students to develop these
  - Purposely integrate and implement activities and challenges that don't have easy answers!
  - ALL students are in STEM- which means we have to collaborate with ALL STUDENTS!
  - Enjoyment- we approach this as a way to build a love of learning and STEM- so we utilize things that look fun and are fun!

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STEM & Career Skills

Design Thinking

Problem Solving

Collaboration

- Core of PBIS
- Aligns to key career soft skills.
- Developing these skills helps students be Success Bound. Our students will **thrive** in any workplace.

STEM Materials

- Goal= World Class Experience
- Want Students to say “Wow”
- Materials fit our sequence of learning
- Materials Relate to Success Bound Career Experiences

Robotics

Industry-Related

Drones

Unique

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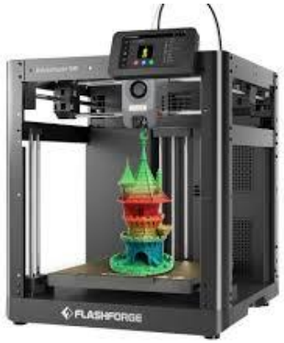
Funding World Class Materials

- LEGO Robotics
- Snap Circuits
- Ozobot
- Sphero
- 3D Printing
- Drones
- Programming
- CAD Design

Funding:

- Aggressive grant writing.
- Federal Programs- Title IV and Equal Opportunity Grants.
- Business Advisory Council and Business Partners.
- Strategic Purchasing.



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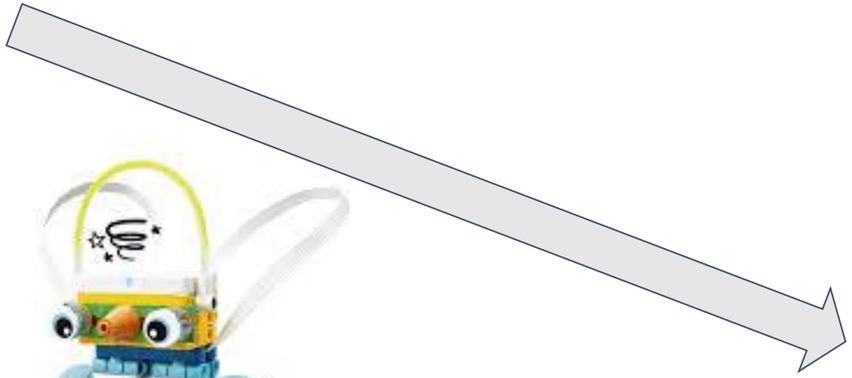
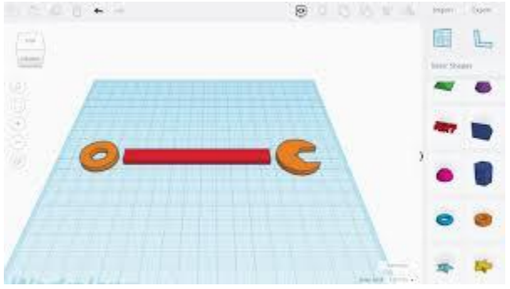
Unlocking Futures: STEM as a Journey to Success

STEM education isn't just a subject; i**t's a continuous process**. Our programs are designed to build skills over many years. We integrate STEM learning across all grades, linking classroom activities to future careers.





Students explore the digital world around us and new emerging technologies. This class covers foundational concepts of robotics and includes various quick build projects on a variety of robotic platforms. **Basic programming is practiced as part of the engineering challenges. The roles of sensors, loops, and conditional statements are explored.** Students will discuss the implications of increased robotics on society, focusing on changes to business and manufacturing.

Students will use architecture design principles to organize and arrange structures to create a perspective of a building. **Students will use orthographic/pictorial projection, freehand technical sketching, and computer-aided drafting (CAD) skills to generate floor and wall plans, elevations, sections, details, and schedules. Students will develop structural framing and mechanical working drawings, including plumbing, HVAC, and electrical power and lighting plans**.

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STEM: Integrated Learning

Collaboration

STEM teachers work closely with classroom teachers. This ensures that STEM is integrated with other subjects.

Content Standards

Content standards are integrated across grade levels. Students apply concepts with hands-on activities.

Work-Based Learning

Focus is on WorkKeys and Career skills which are critical for career success. These skills include math and graphic literacy.

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Building Success-Bound Skills

1 District Plan

We have a clear district-wide STEM/Success Bound plan. It guides our goals and initiatives.

2 Career Connections

Experiences tie back to career paths. This ensures relevance for students.

3 Community Partners

Involve partners to enrich learning. They may offer hands-on experiences and long-term career learning opportunities.

ber of dents	Success Bound: Career Awareness, Exploration, Planning, Training Event	BAC Quality Practice
	Piqua City Schools Success Bound Initiative	Professional Skills Build Partnerships Coordinate Experiences
	STEM Programming for all K-3 Students	Professional Skills
	Big Trucks- Service Vehicles	Coordinate Experiences
	Big Lift- Wind Turbines with STEM Students	Professional Skills Coordinate Experiences
	STEM programming for all students in grades 4-6	Professional Skills Build Partnerships
	Junior Farmers Market	Build Partnerships
	Hartzell STEM Day	Build Partnerships Professional Skills
	STEM Courses	Professional Skills

Connecting STEM to Future Careers

1

Skills Connection

Experiences connect to skills. These are important for career readiness.

2

Business Partnerships

Partner with local businesses. They support student experiences.

3

District Engagement

Engage your district at all grade levels. This ensures broad participation.

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STEM: The Foundation for Career Skills

Pre-Apprenticeship

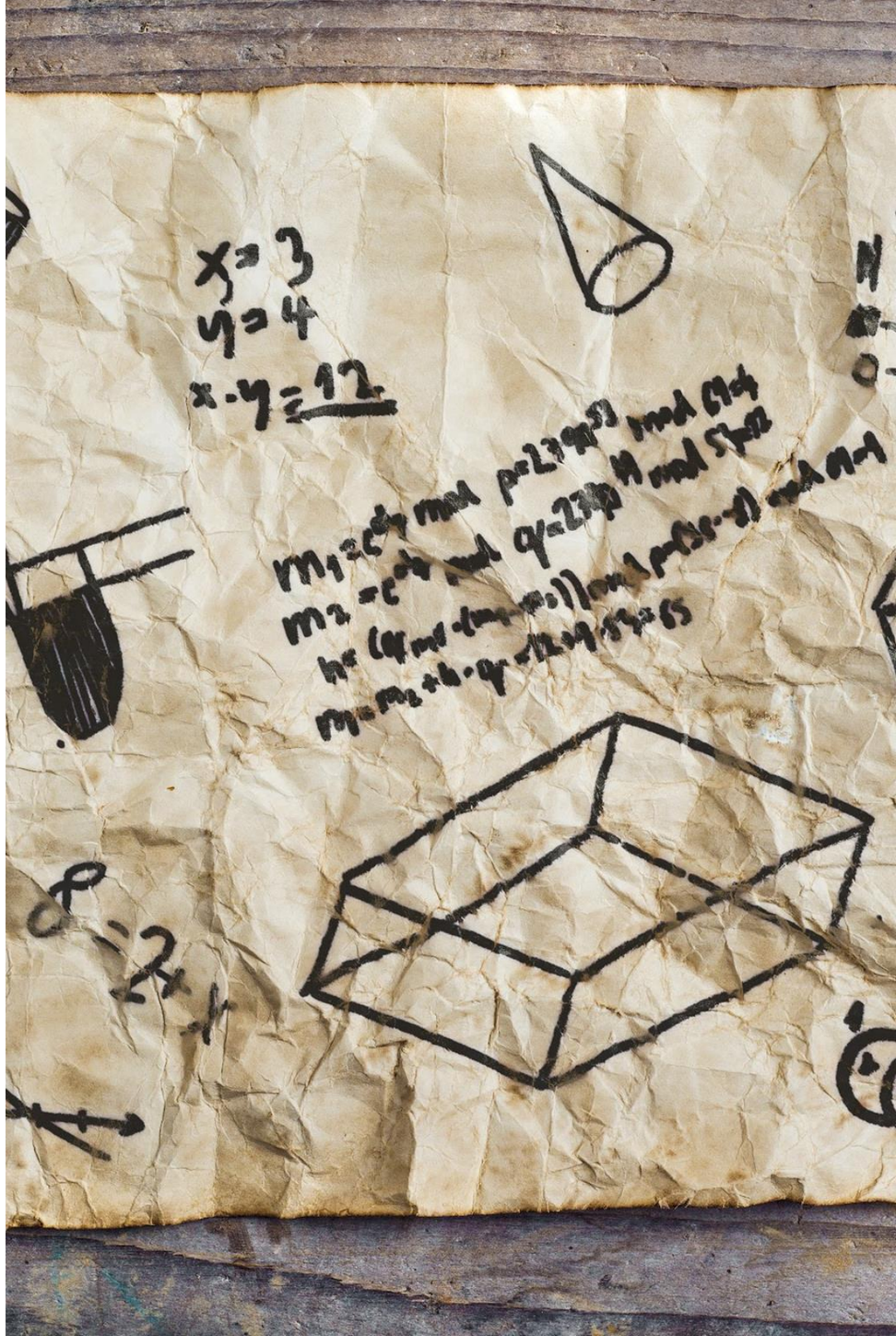
9th graders earn a STEM credential. This prepares them for apprenticeships.

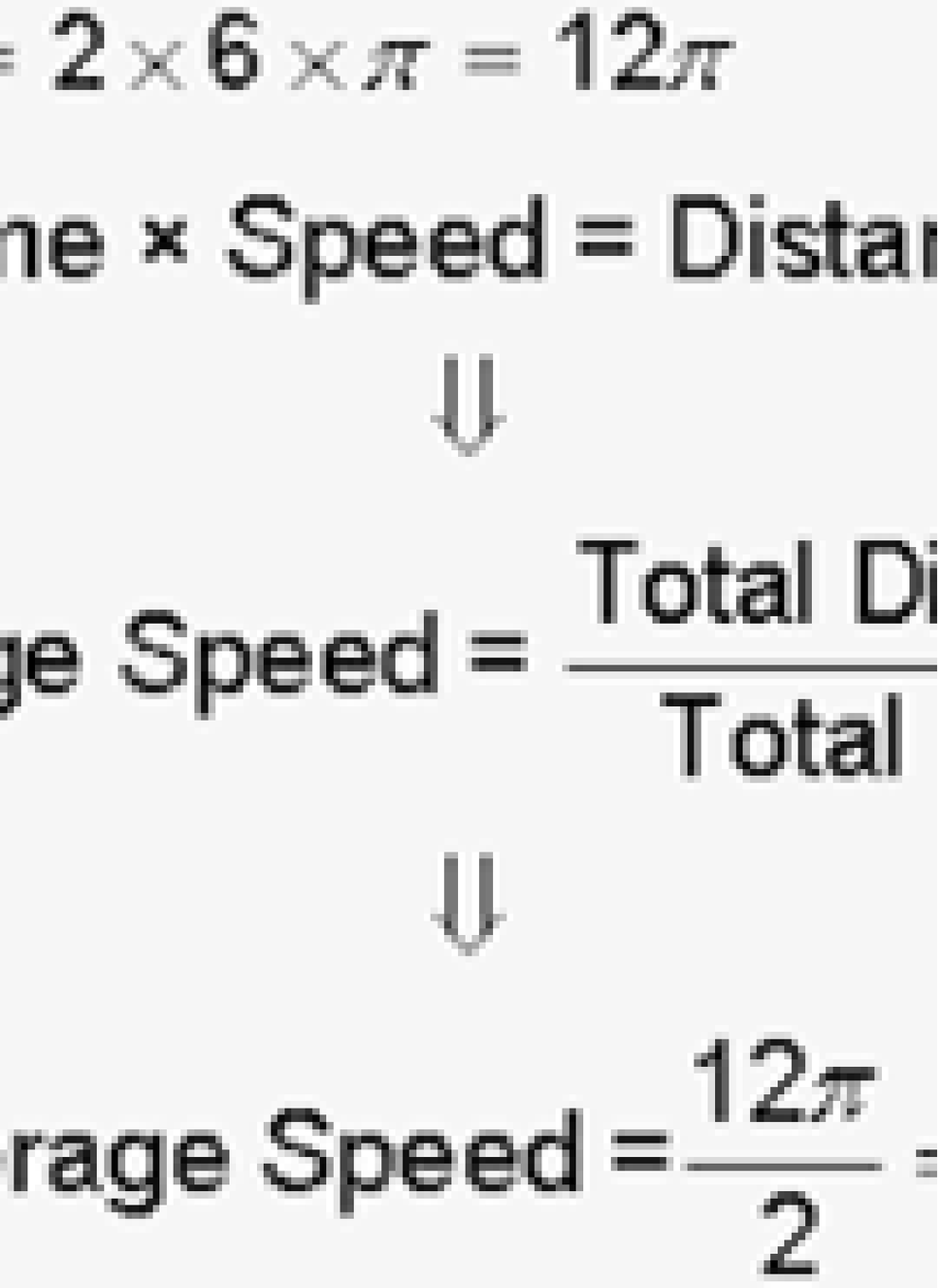
ACT WorkKeys

WorkKeys is used in work-based programs. Supported by years of STEM Learning and now leads to credit articulation.

RISE Up

RISE Up credentials in retail and service. These are related to STEM skills.





NCRC: Validating Career Readiness

1. **Applied Math**

   Assess math skills. See how students apply math.

2. **Workplace Documents**

   Assess document use. See if students understand documents.

3. **Graphic Literacy**

   Assess graphic use. See if students interpret graphics.

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Empowering Teachers as Leaders

Involve Teachers

Engage teachers in decisions. Trust their creativity.

Cross-Curricular

Support teaching across subjects. This reinforces learning.

Provide Training and Materials

Be sure that teachers are empowered to implement programs and ideas.

[STEM In Our Schools | Episode 1]

2024/2025	September	October	November	December	January
	Tynker Cad Skills, Design, Print	* Tynker Cad Skills cont. * CS First Characterization Introductory Lesson	* CS First Interactive Presentation Introductory Lesson	* Lego Essential Science Progression https://static.prod01.ue1.p.pcomm.net/legoedu/content/LEGO%20Education%20SPIKE%20Essential%20Learning%20Progression%20Grade%202_No%20Standards.pdf Classify & Choose (Chicken Coop) **** If then statements!! ****	*Renewable & Non-renewable energy * Wind Turbines

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Building Work Ready Communities

1

Skill Gaps

Close skills gaps to increase student success.

2

Economic Growth

This is a good way to improve the workforce.

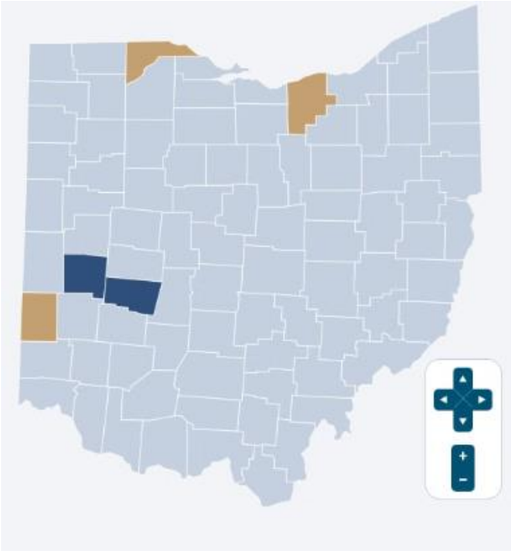
3

Community Support

Obtain community partnerships across all programs

[What Are Work Ready Communities?]

[Miami County, OH: A Work Ready Community in Progress]



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Let's Connect!

Questions or Need Help? Reach out anytime!

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