

- Commitment
- Problem Solving
- Teamwork (leadership vs. first follower)
- Motivation
- Asking Questions
- Critical Thinking
- Conflict resolution
- Collaboration/how to work with others
- Teamwork/leadership
- Independent learning skills
- Mutual respect
- Character based values
- Lifelong learning
- Innovation skills
- Finding resources/resourcefulness
- Overcoming fear/failure/resilience
- Social emotional skills
- Seeking help and stress management/wellness and safe awareness
- Going Beyond Expectations
- Public Speaking
- Productive Meetings
- Being on time/early
- Impact of your attendance on others & the business
- Employer empathy & community
- Generational rules
- Diversity & inclusion
- How is this currently taught and assessed?
- Education
 - Punctuality/Attendance
 - Deadlines
 - Business Classes
 - Gap – Not directly taught in many districts
 - Group work
 - Senior Projects
 - Code Switching – Home culture vs. academic culture vs. work culture
 - Overcoming Ace's – Self regulation and executive functioning
 - More group learning
 - Match kids up with a champion
- What do we do well?
 - Preparing for college
 - Project Lead the Way (PLTW)
 - Well prepared for sciences
- What do we need help doing?

Key:

Standardization

Partnership Development

Pathways

Pedagogy, research, curriculum

Resources, Tools & Training

- Career & Technical Job Skills
- More exposure to different careers
- Unpack the norm's – need to be more specific - re: expectations
- Shifting beliefs and navigating hidden rules
- Balance learning vs. preparing
- Planning skills
- What can business do?
 - Support education with career exposure
 - Partner with high schools and middle schools
 - Choices Day (See 3. STEM Career Awareness and Participation for Choices Career Day)
 1. Three different job shadows

3. STEM Career Awareness and Participation:

- Educate/ask: What do you like to do?
- Focus on student strengths & interests
- STEAM Summit
 - Pre-awareness education for teachers
- Post-secondary student/teacher/professor career connections (STEM Forward)
- 6/8 career pathways exposure (STEM Forward Speakers Bureau)
- K-5 Mentorship between High School and Elementary students
- Need more opportunities to expose student to present and future careers
- Interim... job... masters level... shadowing for recent college graduates to explore and be educated prior to employment (Develop the N in WIN. What is NEXT?)
- Persistence in learning. Failure is good!
- How can we train students with basic skills to enter the workforce?
 - Business
 - Education
 - Non-profits
 - Communications & teaching
 - H3 Cubed – Health-wellness, HR, Human Resources, Human relations
- Student Entrepreneur experiences in high school
- Cultural responsiveness
- Choices Career Day – 1 day job shadow, small groups, once per year, middle school, pre-employment ages.
- New Initiatives
 - Project Lead The Way (PLTW) – Product focus, hands on, technical
 - Technovation – Problem solving
 - Black Data Processing Group
 - Form Club Connections in our Schools
 - Form partnerships with all local colleges in our region
 - Work with mentors and internships
- Quality Indicators:
 - Hands On

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- Comp.
- Sci/math
- Programming
- Collaborative

- Business Supports

- Annual meetings between middle school teachers and business leaders

4. Faculty Development:

- Externships - Winona Chamber sponsors teacher in the workforce. Extends beyond just teachers
- STEM teachers are often lost to industry
- Incentives for teachers in STEM careers
- There a difference between teaching and telling (pedagogy)
- Principals need STEM training
- Recertification could require STEM updates and visiting/shadowing industry/innovation
- Give hands on training during staff development
- Training in how to make STEM less daunting (more supportive & welcoming)
- Faculty training in how to teach multiple modalities

5. Broadening Participation and Diversity:

Understanding

- Create an understanding of what diversity means (gender, race, abilities, social, economic, etc.)
- How to design those programs/supports: Female students want purpose. Male students want toys.
- Shared and consistent language to support all jobs (blue and white collar).
- Understand where your organization is it and be intentional with your strategies.
- Identify programs that need intentional work around diversity
 - IT classes struggle to recruit females and EL students. Why?
- Understand the core issues for those groups of people
- Early grade exposure is more equitable
- To be successful students need a language foundation
- To be successful, organization must have an inviting environment for change. If we do not have that, how do we create it?

Support

- Creating opportunity and involvement early with parents, teachers, and resources
- Promote role models in all areas like those that we have done in sports include marginalized groups of individuals (females, ELL, etc.).
- Help teachers connect to real life and real work for everyone.
 - Open more doors in our community.

Financial

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- How does public funding support diversity through a STEM lens?

6. Emerging Priority Content Areas:

What are the content areas that demand a more significant focus for preparing the STEM workforce of the future?

- Physician assistant
- Genetic counseling
- Cyber security
- Science & business = Entrepreneurial Thinking

Are these areas particularly important? Entrepreneurship, math/quantitative literacy, computation skills, cyberinfrastructure, analytics, data science, and convergence?

- Yes. With technology and the world changing. We are seeing how multiple disciplines that use to be standalone sector or jobs are not converging into new fields.
- The future jobs of many of our current students do not exist today. How do we prepare them for those types of jobs?

What are other areas that need special attention?

- Broader perspective on STEM roles – STEM is not just for engineers and doctors. Most work contains some element of STEM education.
- Interdisciplinary learning (e.g. reading is the process of how to learn or math as the application vs. easy stuff to test) is vital to all work. Need to minimize silos of content areas.
- Attitude & Mindset of students
 - Become a lifelong critical thinker and problem solver and then decide what job to apply those skills in. There are two types of jobs – boss give you a checklist every day or boss give you a new problem to solve every day.
 - It is not all about salary, find passion and interest in your job. Career matching/job fit for personality and passion.
 - Ask student's "What are we preparing you for?" Answer should be "finding engaging work."
 - Students are and can be designers of technology; not just consumers of technology.
 - Eliminate the fear of failure. Encourage students to fail fast and try again.

What mechanisms need to be put into place to create a strong "employer voice," as K-12 and postsecondary education provide experiences that ensure students have broad and deep exposure to emerging content areas?

- Make connections with elementary students for early exposure and learning. Most student's interests are in place by 9th grade.
- Focus programs and experiences for entry level– hospitality, business ecology.
- Exposure to real-world relevant skills.

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- Use inclusive STEM approaches to curriculum and prep for fields.
- Vocation training – becoming a productive citizen.
- Relationships are important to connect with students.

Within these new and emerging content areas, how can STEM Forward, SciMathMN, and other agencies/businesses/industry support skills development, curriculum development, and faculty professional development?

- Professional development
 - Help teacher to understand what is out there, what skills they teach translate to different jobs, etc.
 - Work readiness & realities of work vs. perceptions. How to use Design Thinking and how to teach kids to use Design Thinking.
 - Non-college pathways
- Rethink credits at schools. Can learning opportunities get school credit?
- Resources - The Eden Project (Book) – Educating for an accomplished citizen and good employee
- Need liaisons between business and education to translate.

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