STEM Power Communities:

★ Making Connections to Strengthen Your Teaching
★ Connecting Your Students to Aim for Greater Success

Christine Kelly  Allendale MS  MSTA 2020
Allendale Public Schools  kellychr@apsfalcons.net
The Plan:

A. Why Create a Power Community?
B. Where Should You Start?
C. Think Local, Regional, Global
D. Rely on Your STEM Engineering Design Plan
E. Develop Connections for You-as an Educator, and Connections for Your Students
F. Match Up to the NGSS Engineering Standards
Where Should You Start?

1. As we talk, you will be given some examples for your own list
2. Develop your own list using some of these suggestions
3. Network with teachers:
   - In your table group
   - Educator friends

Start Today!
WHY Should You Develop Your Own Power Community Lists?

For YOU:
1. Instant Resources for Networking & Community
2. Deepen Professional Knowledge
3. (Local) Grants & Material Availability

For Your Students:
1. Empower Students to Explore The World
2. Help Them to See Beyond Themselves
3. Students Care More About Learning When They Have a Connection
Next: Organization of STEM Activities and Investigations

Build a tower, build a team | Tom Wujec
**STEM: Engineering Design Plan**

**ASK:** What is the problem?

**Communicate & Share:** Explain your ideas. Listen for feedback. Answer questions with data and reasoning.

**IMAGINE:** Brainstorm ideas to solve the problem? Form a Hypothesis...

**IMPROVE:** Which modifications or changes need to be made?

**PLAN:** Diagram or draw your solution to the problem... List materials you need and write a procedure / method.

**CREATE:** Run your trials. Record and Analyze Data. How will you illustrate your data?
Scales of Impact!

**Local:**
* School
* Community
* Colleges, Area Parks, Local Businesses
* Most Buy-In

**Regional:**
* County Parks, Nature Centers
* Non-Profit Organizations in the Area
* State Organizations

**Global:**
* National Organizations
* International Groups and Connections
* Non-Profit and Specific-Goal Global Institutions
Where to Start:

1. Local Businesses

**STAR CRANE & HOIST:** Overhead crane sales and service provider. With access to parts and replacements for all major brands.

Advanced plastic injection and insert molding

Software integrations, webdesign...
“My” Local: West MI

1. Local Plastic Injection & Molding Co.
2. Local Engineering Co.
3. Ottawa County Parks
4. GVSU Regional Math & Science Center
WHAT ARE YOUR LOCAL CONTACTS?

Ottawa County
Where You Belong®

Robert B. Annis Water Resources Institute (AWRI) - Education & Outreach
2. Michigan - Regional Connections

Science Centers & Children’s Museums...

https://www.michildrensmuseum.org/
2. Michigan - Regional Connections

Science Centers & Children’s Museums...

FREDERIK MEIJER Gardens & Sculpture Park
3. Projects for Your Students!

Girls in 4th through 8th grade, *special opportunities in STEM with girls in mind.*
Cool programs, special Michigan Science Center (MiSci) days, *meet-and-greets with women who have interesting STEM jobs!*
Sign up to be a STEMinista

*Students document their engineering-design-related work, *Educators can review, comment on, and score these portfolios using this online system*

Project Lead the Way (PLTW).
3. Projects for Your Students!

Making a difference for girls in STEM

Closing the gap requires tapping into girls’ creativity, providing encouragement, and connecting STEM subjects to real-world examples.

Microsoft Education

4. Keep Looking: Conferences!
B. The NSTA STEM Forums set the absolute standard for exceptional STEM learning!
STEM Forums: National – Summer

Terrific Keynotes; wide variety of sessions, representing all ages

Past Conferences - California, Florida, Colorado
Other Regional and National Conferences

Michigan Alliance for Environmental and Outdoor Education

Beaver Island 2020 Conference

https://www.stemleadershipalliance.org/
https://www.maeoe.com/conference
5. Competitions: Large Scale for Large Challenges

Episode 3

eCybermission Podcast

U.S. Army’s eCYBERMISSION Program

What you need:

1. A team of 3-4 students in your grade from your state
2. An adult Team Advisor
3. A Mission!
Ex.: Chemical vs Physical Changes Lesson

45 Videos & Lessons for Grades 6-8 --->Sep 2020.

Please note that Generation Genius can be funded through many state and federal programs (Title I, II, IV, V, etc), through the PTA/PTO or library media specialist.
6. **STEM Resources**

The four pillars are as follows:

1. Create a robust STEM culture
2. Empower STEM teachers
3. Integrate business and education into the STEM network
4. Ensure high quality STEM experiences for pupils

[https://www.stempipeline.com/glbr-mistem/](https://www.stempipeline.com/glbr-mistem/)
6. STEM Resources

https://www.teachengineering.org/activities/view/cub_natdis_lesson06_activity1

More Curriculum Like This

- Tsunami Attack! Giant Wave Characteristics and Causes
  Elementary Lesson

- Naturally Disastrous
  Elementary Lesson

- All About Landslides: Land on the Run
  Elementary Lesson

- Checking the Surf
  Elementary Lesson
Why Collaborate?
Teacher Connections!

https://www.linkengineering.org/
Thank You!
Chris Kelly

kellychr@apsfalcons.net