General Session C Breakout Topics/Networking

iSTEM Summer Institute 2021

Click the links to jump to the breakout topic of interest in this document

Family Engagement

Title: i-STEM Breakout: Family Engagement Strategies
Description: This is a breakout to share and discuss strategies, resources, and best practices for family engagement in STEM.

Discussion Questions:

1) Why family engagement in the first place? What are the benefits of engaging families in a student's STEM learning?
   - Guest scientist: Invite parents to share their specialty in their fields of expertise
   - Family Engagement Nights: Once a month, families come and have activities to do and also take home and do. Provides further learning.
   - Older students teaching younger students – Older students teach younger students about science and show experiments.
   - Getting families on the same page to show the importance of education is one reason we want families engaged.
   - Title I: Schools that receive Title I money are required to host parent engagement activities where some kind of education is given
2) What kinds of activities work best for family engagement? Are some activities better suited for events versus the take-home context?
   - STEM Camp – STEM Camp is linked with 4-H after school programs. Themes like volcanoes.
   - STEM Room – Within the school day, has themes and is run as a 'special' for classes. Structured time with projects. Funded by fundraising money and scholarship.
   - Website: My favorite family engagement tool is my class website. I just created a free website through weebly (www.weebly.com) and I update it constantly. There are links to everything we are learning throughout the week. Parents can

watch videos and tutorials, listen to our reading stories, print spelling lists, etc. I love it!

- iSTEM library: Family engagement kits at the iSTEM library
- Take homes: We have done math packets for each grade level. The students get game instructions, dice, playing cards, and a few markers. We play a couple games in the classroom and then students take them home to play.

3) How does family engagement change as students get older?

- STEM Club – Breakout boxes, Fed families, and Cash prizes – made for a popular time for families to come.
- Spooktacular Night – Around Halloween, served pizza, decorated like Halloween, stations set up like MakeyMakey which is run by college students. Raffle set up for students to win prizes and fundraises money for school.
- From my experience I felt in our district the K-3 family engagement is much stronger for math/literacy/STEM nights. This is something I would like to continue to work on for the intermediate 4-6.
- It seems that as students get older, engagement is less. More kinder parents shows up than 4th and 5th graders in elementary.
    i. *I can second this. Parents feel they do not "Need" to help out. I have had parents volunteer in my Middle School science classroom to do labs/activities with the students (not last year due to COVID). When we did this, I had MANY parents want to be in - even the students volunteered their parents. However, the "classroom mom" idea is less prevalent.*
    ii. *That is so wonderful that you had volunteers at that level!*

4) What are good tips for getting families to show up at your family engagement events?

- Feed them! Be aware of other events in the community when scheduling an event.
- Prizes
- Check out STEM resources from the CSI Resource library: Heidi Adams, CSI i-STEM Resource Library 208-732-6429 hladams@csi.edu . Twin Falls Public Library. http://www.twinfallspubliclibrary.org/services/educatorkits
- Develop a committee and include parents, suggest community members/industry as well.
- STEM Night – Invited Children's Museum to come and run the event.
- STEM Night – Every grade comes up with 2 or 3 activities to do. Provides the families with kits to take home. Some families go around and collect kits for each of their students. Activities with food are popular! Community donations are used for family dinner. All teachers are to participate in Literacy or STEM night.
- Money – Grants from Thrivent ($250). Walmart donates, Michaels donates. Grants available for STEM rooms.
- Money
    o Idaho National Laboratory ($1500 for classroom projects)
    o Home Depot
    o Local Lions Club

- o Walmart Grants
  - o Sherwin Williams – paint, sealers, and supplies donated for mural…showed a picture of mural and aske what they could do.
- Build up student excitement! If the kids are excited, they will help encourage their families to go.
- food! We have a lot more people show up when we have something like pizza
- Zoom: It's been super helpful this year where meetings and events were also streamed or attended by Zoom for those busy parents who can't join in person.
- When we have put the activities at varying times in the afternoon, we get more parental involvement in things like Parent/Teacher conferences. Additionally, due to COVID this year, we ended up having the parents schedule times to meet with the teachers (similar to what an elementary school does), and we had about 85% turn out.
- We always do an all school assembly to get students excited and have them help get families to attend.
  - o *We had a professor from ISU, and the mathmagician (expensive but fun).*
- Getting the students involved and excited makes a huge difference. As a parent, if I see a flier about an event and my kids aren't interested in it or don't even know what it is, I probably won't rearrange my schedule to go.

5) How do we create spaces where different types of families feel welcome? (Such as: blended & non-traditional families, foster families, families who speak a language other than English)
   - STEM Night – Pizza is always better than hot dogs in bringing in families! During the live event, also Zoom the event for families that can't attend in person. Kits available for in-person and sent home for those who will be virtual.
   - Kits – Dice, dominoes, printed activity. Example: MnM math: sorting sheet, MnM's, instruction sheet.
   - We do several informal get togethers. Its set for the hours of 6 to 8 lets say and its come and go as you please
   - Cultural events
6) How do we create meaningful opportunities for family engagement while simultaneously supporting the learning & belonging of students whose families who are unable to engage?
   - ISU STEM Up: ISU did a STEM Up activity in our district in which they sent kits home to every family in the district. They had a day to come pick them up. But, for families who did not come, we sent the kits home with their student at school. They had a raffle for a drone for anyone who participated. They just had to go to a website and answer a question about the activity they did to be entered in the raffle. We had a huge amount of participation and families loved it!
   - If you are in Boise, Mathnasium came to our STEM night. They gave each grade level 1-2 passes for 2 weeks of free tutoring. (They are a little full of themselves which put a lot of teachers off, but…)

7) Other Notes
- ON Semiconductor- 208-233-4690
- Angie Miller- Idaho Power Education- amiller@idahopower.com 208-283-7545

Resources
AI Family Challenge Video

This is a video about her mom and her daughter who participated in the Technovation Families AI Family Challenge. This is one example of a really cool family engagement program where kids work with their families to complete challenges and solve problems.
https://youtu.be/0JwW2YKMJTA

TASC Family Engagement

This 6-pages document offer a guide to tools, strategies, and resources to engage families.
TASC Family Engagement

The Future of Work

Title: i-STEM Breakout: The Future of Work
Description: This is a breakout to share and discuss strategies, resources, and best practices for preparing students for the future with changing technology and jobs we don't know about yet.

Discussion Questions:

1) How are technologies changing the way you see your own role as an educator preparing your students for the future?

   - Teaching citizenship: It's every teacher's/parent's responsibility

2) How can we prepare our students for jobs we don't know about yet? How do we encourage them to not only be comfortable with technological change, but to thrive around it?
3) How do we have open, caring, productive dialogue about "the future oof work" with parents and caregivers who may feel uncomfortable or alienated by the idea of technological change?
4) How are you partnering with local businesses to understand their future workforce needs?
5) Other notes
   - 3D printing on the ISS
     https://www.nasa.gov/mission_pages/station/research/news/3d-printing-in-space-long-duration-spaceflight-applications

- Agriculture Rock Clearing Technology:
  Company link: https://www.terraclear.com/ and
  background: https://www.terraclear.com/company.

  Here's a press article on the company: https://www.geekwire.com/2018/robot-rock-picking-smartsheet-founders-next-big-thing-aims-solve-weighty-issue-farming/
- Summit Learning Cognitive Skills
  https://cdn.summitlearning.org/assets/marketing/Cognitive-Skills-Document-Suite.pdf
- STEM & Agriculture Resource: https://www.stemconnector.com/download-resource/food-and-agriculture-is-stem/

<u>Resources</u>
The Future of Work: Will Our Children Be Prepared?

This is a video about how a test-driven standardized model of education potentially trains children for a world that no longer exists, especially when accelerating advances in technology are eliminating any job that is routine.
[(236) The Future of Work: Will Our Children Be Prepared? - YouTube](#)

The Future of Work after COVID-19

According to McKinsey & Company, the pandemic has accelerated existing trends in remote work, e-commerce, and automation, with up to 25% more workers than previously estimated potentially needing to switch occupations. Watch the short video (2:37) near the top of the page.
[The future of work after COVID-19](#)

IBM New Collar Workers

This is a super short video (1:03 minutes) on how technology is radically shifting the way we live and work, and due to high tech skills gap, the American businesses are struggling to keep up.
https://www.youtube.com/watch?v=JgEzrM8-ELM

15 Jobs that don't exist yet

No one knows what a job search look like in 2050, but one popular estimate suggests 65% of primary school-aged kids will end up in yet-to-be-created careers. Read on for brief descriptions for 15 potentials jobs.
[15 jobs that don't exist yet](#)

The Future of Work: How Do We Prepare Our Students?

The article from Getting Smart website listed five types of learning experiences that allow students to see learning as a process, rather than a finite learning experience, which is essential for adapting to future jobs.

How Do We Prepare Our Students

21ˢᵗ-Century Skills We Need to Cultivate in Students

The article listed and explained a few ideas on how to prepare the students to be adaptable, adaptive, flexible, and ready to learn forever in the new world.

Comment: Did you see this comment about halfway through the article? Andrea recalled an article by a representative of a global company who stated that in 2020 there are going to be 10 new skills that his employees would need to have that they currently don't. The skill that had stood out for her was understanding how to be productive and collaborative while working in a virtual environment. "Not just how to communicate in a virtual environment, but really how to truly be engaged and productive and collaborate to get work done in a virtual environment," she said.

21ˢᵗ-Century Skills We Need to Cultivate in Students

Preparing for the Future: Building Interest in Computer Science

The article stressed the importance of computer science (CS) education, and it listed six resources to explore that will give students a chance to see how CS impacts our world and build their skills in a variety of focus areas.

Building Interest in Computer Science

Realistic Strategies for Inquiry-Based Learning in the Classroom

Title: Realistic Strategies for Inquiry-Based Learning in the Classroom
Description: This is a breakout to share and discuss realistic strategies, resources, and best practices for inquiry-based learning in the classroom.

Discussion Questions:
1) As an educator, what are some of the challenges you face with bringing more inquiry-based or student-centered models into your learning environment? What are some possible solutions to these challenges?

- https://www.eduprotocols.com/free-templates

- These are the class dojo discussion video/topics that I used this year. https://ideas.classdojo.com/b/conundrums

- I struggle with the chaos that may arise. One solution is to let it go!!!!
  - *Visual timers, speaking calmly, verbal reminders*

- Time constraints

- Learning to inquire: I work with k-6 and they have to get used to learning how to inquire. I have to do a lot of modeling for all ages and found a resource on recording sheets that really helped.

- Spoon Feeding: Students are used to being spoon fed answers.

  - *Somebody is going to tell me what they want me to say...*

  - *Just saying "I don't know, you can figure it out"*

  - *Encourage individuality and creativity in coming up with a solution - model the process we go through. Tell them exactly the thought process we go through to get to optons*

  - *Leave wrong answers - wrong answers are ok*

  - *Purposfully model mistakes!*

  - *I spelled purposefully on purpose ;)*

- Just try: I really struggle with my third graders giving up, or not even starting. The biggest problem that I struggled with last year was getting some of them to do something! I had several that would just sit there. I felt like all I said last year was "it's okay not to know, but it is NOT okay to not try". I don't know how to motivate children that just don't care enough to not even try.

- *I struggle to not LET certain students dominate the conversation. They know what they are doing, so what they have to say is useful to each other's learning.*

- Whiteboard: Leave a section on the whiteboard for questions.

- Fabric Chaos: Students are working with fabric selecting their own shapes, colors, and fabrics. They each get 4 pieces and go up to choose one group at a time. They can exchange pieces if they have permission. How can I make this less chaotic?

- Anonymous: Have some students working on designing, while others work on another piece of the project.

    - *Narrow the choices for each group*

    - *Time them*

- In my group we talked about starting with 2 platforms and moving through each step. Check out the HACK model if possible

- One of the challenges I have had is, students are afraid of being wrong, especially in mathematics and especially in middle school! One thing that helps me and my students is giving them tasks where there is no wrong answer and all thoughts and answers are correct/valid. Which One Doesn't Belong is helpful (wodb.com). Number talks are also excellent and there are many that can be found on the internet. There is a book too, Making Number Talks Matter by Cathy Humphreys.

- One challenge I have had is time. Admin tends to focus on math and reading, so sometimes science gets put on the back burner.

- Time and money

- Let them know it is okay to fail.

- Challenges: time, state standards, or wonder (older kids maybe).

2) How does the LCPS Lesson Structure use a balance of "openness and structure" to make inquire-based learning more manageable in the classroom setting?

- My understanding is that it is a very structured in the beginning and letting go slowly. The kiddos can eventually choose their own topic and explore it.

- *I agree. It is easy for the students to get lost and go off to the left...so if it is structured a little then the students can be more successful when it is more open.*

- Inquiry-based is not a free for all. It's important to have a framework and guiding questions for students to build from.

3) How can we build students' skills over time so they are "ready" for inquiry-based learning? (see graphic) How do we move them from one end of the pool to the other?

- Building debate/disagreement skills

- "I respectfully disagree with how you hit me with the ball [at recess]."

- Inquiry is inquiring-Questioning, wondering, exploring

- A Safe Environment: I think that is very important to build a classroom environment where being wrong, failing, and trying is the most important. Teaching them the power of "yet" and you have to make mistakes to learn and it's okay.

- Kids are naturally curious. They naturally inquire. Schools tend to "beat" that out of them and then teachers who want to do inquiry-based lessons have to pull it out of them. Let students be inquisitive from day 1 and keep it going!

- Scaffolding to show them it is okay to make mistakes (safe classroom).

4) Other Notes:
   a. Teaching for artistic behaviors: I use this resource a lot for the templates for tracking studio habits, pre post assessments and crafting lesson plans around choice /inqury.
      [TAB – Teaching for Artistic Behavior](#)
   b. Resources I have used to design inquiry lessons:
      OpenSciEd https://www.openscied.org/access-the-materials/
      Argument Driven Inquiry https://www.argumentdriveninquiry.com/
      Teaching Science with Interactive Notebooks
      https://www.amazon.com/Teaching-Science-Interactive-Notebooks-Marcarelli/dp/1412954037/
   c. What is SOLE
      https://www.edutopia.org/blog/getting-started-self-organized-learning-environments-jacquelyn-omalley
      https://startsole.org/about/
   d) These are the 8 studio habits of mind......
      http://www.everyarteverychild.org/assets/pdf/LoisStudioHabits.pdf
   e) https://wonderopolis.org/
   f) Link to Idaho Coaching Network lesson/unit plans [Idaho Coaching Network (google.com)](#) There are some inquiry type lessons here.
   g) 5E Inquiry Book https://www.amazon.com/Inquiry-Based-Science-Professional-Resources-Teachers/dp/1425806899
   h) Teaching English Without Teaching English: This is a really interesting perspective on teaching that is very inquiry based at its core:
      https://www.youtube.com/watch?v=8pZa6R3rmRQ&t=909s

Resources
What is Inquiry

According to Exploratorium, inquiry is an approach to learning that involves a process of exploring the natural or material world, and that leads to asking questions, making discoveries, and testing those discoveries in the search for new understanding. Read on for more details on the inquiry process.
[What Is Inquiry? | Exploratorium](#)

- I love doing this in science and in EL. I do many "I notice" "I wonder" activities in the beginning of my lessons. I wish I could figure out a way to do this more in math. I have been to conferences to get better with this, however it takes a lot of planning and would be easier with older students. But I have ideas to just play and rearrange numbers and manipulatives to start questions and ah ha moments. Exploring is key and I wish I had more time for it.

  - *I have done a gallery walk to do a I notice, I wonder.*

- Inquiry is eventually student directed learning. They attack a problem they are interested in or use a tool that they are given to investigate something.

- Inquiry learning allows for exploration of the natural and material world that leads to asking questions and making discoveries.

- Inquiry provides a cross-curriculum approach.

- Learning about the world around them: Giving the children the ability to explore and always continue learning without necessarily having structured boundaries.

- It is important for students to know about the problem or discovery what it is asking before they try to find the answer.

Lesson Structure: Inquiry Through Provocaicón
This 5-pages document explains *how Inquiry through Provocación* lessons can support students to develop their understanding of a concept individually and collaboratively, and this lesson structure can be used as students are learning new concepts or processes or integrating new ideas into an existing model.
[Inquiry through Provocación LCPS - Google Docs](#)

Types of Student Inquiry
There are four types of student inquiry: Structured Inquiry, Controlled Inquiry, Guided Inquiry, and Free Inquiry.
[1-Types-of-Student-Inquiry-1180x885.png (1180×885) (kqed.org)](#)

- Year-long Scaffolding: Moving through the different types of Student Inquiry throughout the year, or years as is available. Scaffolding procedures to prepare students for Free Inquiry.

- Small Groups: Starting with small groups or partners is helpful. These students can help each other.

- I tend to stay in the structured and controlled for the majority of my lessons. I love letting the kids go into guided and free, however it turns crazy and looks like free time for many of my students. So, I have to wheel it in. Definitely chaotic.

- I tend to stop at guided inquiry.
  - *Sometimes it is disappointing to see what they come up with in free inquiry.*

- Controlled to Free: I tend to use controlled inquiry as far as giving resources to avoid rabbit hole searches. Depending on the project I will let them have free inquiry. They come up with some amazing things and crazy things as well.

- I've seen a lot of teachers using STEM boxes. Would that be considered free inquiry?
  - *What are STEM boxes?*
  - *They put a variety of materials in boxes, like pencil boxes, and allow the students to explore the boxes during free time.*

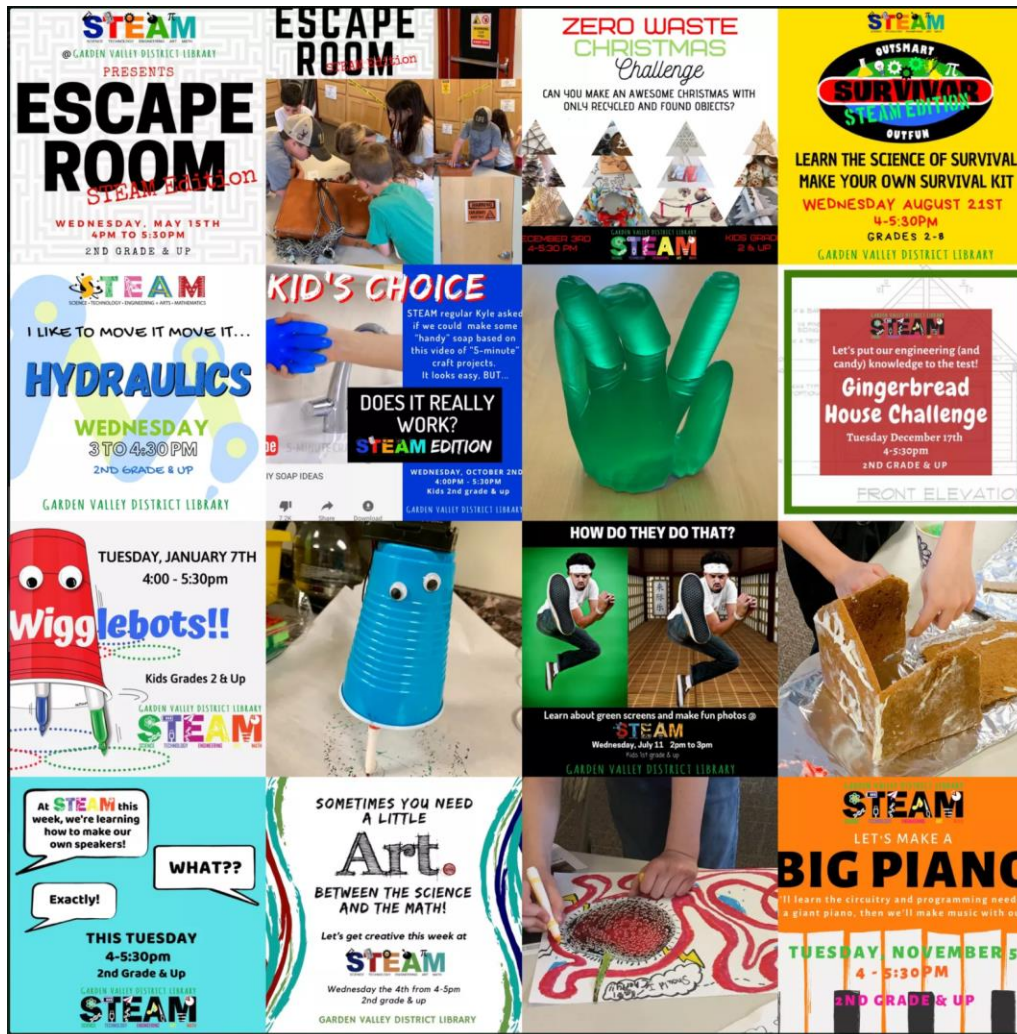## Value of School-Library Partnerships for STEM Learning

Title: Value of School-Library Partnerships for STEM Learning
Description: This is a breakout to share and discuss strategies, resources, and best practices for school-library partnerships for STEM learning.

Discussion Questions:
1) What are some examples of school-library partnerships for STEM learning that already exists in your community or elsewhere? What impacts have you seen so far? What were some of the challenges to building the partnerships? How did you move pass these challenges?

- My library has STEM kits to check out to students.

  - *ideas - https://libraries.idaho.gov/stem/make-it/make-it-kits/*
  - *https://libraries.idaho.gov/stem/make-it/*

2) What potential ideas would you like to bring to fruition? What are possible challenges, and potential solutions to these challenges?
3) How can you get your community involved in the school-library partnerships for STEM learning?

4) Other notes:

- *Check out this project STEM AC is supporting https://idahooutofschool.org/think-make-create-labs-land/*

- *https://www.caldwellpubliclibrary.org/mobile-makerspace*

- *Love this idea! Thanks for sharing! I will check this out for my school.*

- Grants: A list of regional or federal STEM grants for schools would be helpful.

- Resources: It would be great to have a list of resources for free STEM kits from local libraries, universities, etc.
    - https://bearlake.lili.org/try-something-new-kits/
    - https://libraries.idaho.gov/stem/make-it/make-it-kits/
    - idahooutofschool.org/funding-and-grants/
    - https://libraries.idaho.gov/stem

- Creating kits: blue prints ideas
- Brainstorm Ideas for HS:
    - Ways to engage HS students: Develop hands-on experiments and then students go out and present the information to the elementary schools.
    - Small project: Creative writing class. Made art out of a old book and added onto it. Books brought over to the classroom and students rewrote endings or things along that line.
    - Small Project: Using old books old library books for simple machines. Introduce: Overdrive - ebook version they have to get a library card to find the interest. Media production projects.
    - Another Idea: Teen program for Lego stop action films.
    - Project: Book trailers for a given book where people can use a QR code to see what the book is about. Need: Reach out to library to ask what they can offer students.

Resources
Building STEM Partnerships with Libraries
This short article advocates for building STEM partnerships between schools and libraries and explains the benefits of such partnerships.
[Building STEM Partnerships with Libraries - STEM Article (stemschool.com)](stemschool.com)

This is super interesting!

I like the final comment about a two-way street. How can we help them?

It would be great to have a list of resources for our area where we can access STEM kits for free, either through local public libraries, universities, other…

School-Public Library Partnerships Gain Strength During Pandemic
This article from School Library Journal showcased several examples of how libraries partnered with schools to provide more access to materials such as ebooks.
[School-Public Library Partnerships Gain Strength During Pandemic | School Library Journal (slj.com)](slj.com)

I've worked with our community library in the past, but the pandemic interrupted our partnership (like it did to every other aspect of society) so I'm looking forward to working together with them again.

Example of School-Public Library Partnership from Indiana
Deb Gaff, youth services librarian at the Bartholomew County Public Library (BCPL), shares valuable strategies for establishing a relationship with schools and how BCPL got started with these initiatives. This video is a bit long – 46 minutes – but the webpage does come with a PDF of presentation slides you can look at.

Creating Opportunities for Career Exploration – Middle School Level

Title: Creating Opportunities for Career Exploration – Middle School Level
Description: This is a breakout to share and discuss strategies, resources, and best practices for creating opportunities for career exploration for students in middle school.

Discussion Questions:
1) How can you encourage your students to explore careers? How can your students discern their strengths, passions, and challenges?

- Field trips

- Varied activities and/or research.

- Posterboard Idea: Hang posters in the classroom, they say "I like this, have this [skill set]" and students can post what careers would fit in that career

- *I like arts, I like space, I like sports, etc.*

- Engineering Careers Quiz
    - Have students take quiz.
    - Research top 3 matches
    - Choose the one they're most interested in.
    - Complete foldable on the one career.
  https://www.lockheedmartin.com/en-us/news/features/2017/engineer-quiz-eweek.html

- Personality tests/quizzes

- Engineering Career Foldable – Instructions – see appendix A in this document

- Learning blade

- Engineering Careers Foldable rubric – see appendix B in this document

- Here is some info on the 3 second Shapes Personality test I use at the beginning of every year. https://owlcation.com/social-sciences/Simple-Symbol-Personality-Test

2) How can you incorporate career-related project-based learning in the classroom? How can you design projects and activities to develop employability skills?

- Our science curriculum has a unit project designed around a problem and/or designed around a career.

- Bring in hands-on activities.
- *Or virtual field trips*

- Project-based: Students can research on what careers are connected to the project, and bring in guest speakers related to the career/project

- Career Exploration Class for a quarter: Explore careers, learn how to apply for a job, write a cover letter and resume, etc.

- Host a Career Expo:
  - Other schools can attend
  - Host it at a community college - show that it offers training, not just academic learning

- Survival Skills Class
  - How to sew a button, change a tire, etc.
  - Each mini-unit has a guest speaker from the community

3) Who can you bring into your classroom for interactions with business and community leaders?

- People in their careers, e.g., scientists. People in STEM careers.

- Counselors may have connections

- Try to remember that you do not need to necessarily "bring in" but you can do a zoom and have the business "show off" their job

- 4H Extension in your county is always willing to partner to bring hands-on projects.

- College interns. Universities often have students in local communities.

- Tap into parents - they can be huge resources. They range from doctors, plumbers, etc.

- Idaho STEM Ecosystem: Connect with various industry partners to bring in guest speakers

- Unions and parents are untapped potentials for guest speakers

- Chamber of Commerce

- Entrepreneurs. Boise has an Entrepreneur Day

- Virtual Field Trips: Might work better than bringing in guest speakers

4) What scalable online tools can you use to facilitate academic and career planning?

- Utilize school counselors

- Junior Achievement - Inspire to Hire Middle Grades Career Exploration Days - https://www.juniorachievement.org/web/ja-idaho/ja-inspire-to-hire

5) Other notes:

   a. Cyber.org
   b. https://cyber.org/career-exploration
   c. https://www.sde.idaho.gov/student-engagement/advanced-ops/index.html
   d. Google Lesson Plans : https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/research-career-paths/overview.html
   e. https://applieddigitalskills.withgoogle.com/c/en/curriculum.html
   f. https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/research-career-paths/overview.html
   g. Idaho Power
   h. Reach out to local unions in your area
   i. Idaho Power resource conservation program
   j. Code.org – offers training. Does offer coding in science. https://code.org/educate/science

Resources
Career Exploration Lesson Plan
This is an example of career exploration lesson plan by bizworld.org for grades 3-5 students and middle school students.
Career_Exploration_Lesson_Plan.pdf (bizworld.org)

Career Exploration in Middle School: Helping Students Dream Big, While Giving Them the Tools to Succeed
This is a six-pages document on the key findings of career exploration in middle school based on research.
Middle-School-Career-Exploration-Abbreviated.pdf (asa.org)

Career Exploration in Middle School: Setting Students on the Path to Success
This fourteen-pages document by Association for Career and Technical Education (ACTE) might be of interest to teachers, counselors and administrators. It recommends incorporating career-related project-based learning in the classroom, designing projects and activities to develop employability skills, and more.
[ACTE_CC_Paper_FINAL.pdf (acteonline.org)](ACTE_CC_Paper_FINAL.pdf)

Next Steps Idaho
This is an Idaho-specific website where you can browse hundreds of diverse jobs and careers, including Idaho's "hot jobs."
Careers - Next Steps Idaho

Career One Stop
This website is sponsored by U.S. Department of Labor. You can explore careers, take assessments, and plan careers.
Explore Careers | CareerOneStop

Creating Opportunities for Career Exploration – High School Level

Title: Creating Opportunities for Career Exploration – High School Level
Description: This is a breakout to share and discuss different career pathways (e.g. career ladder, career jungle gym, and braided rivers), and strategies, resources, and best practices for creating opportunities for career exploration for students in high school.

Discussion Questions:
1) How do the concepts of career jungle gym and braided river may be advantageous to the career ladder? Do you see any pitfalls to the career jungle gym and braided river concepts? How can you build a toolkit of STEM skills that can take students in multiple directions with their careers?

- These concepts have been around and is what teachers are already doing - just new names put on it.
- Students in correctional facilities are by default in a braided system or jungle gym model.
- these models feel like a lifelong learning, holistic approach.

2) How can you design projects and activities to develop employability skills?

- To be successful students need to learn how to think.

- Senior Project

- How do we help students that may not have the connections or 'in the know' to get job shadowing opportunities.

  A solution is to work with smaller businesses in rural communities

  Mentors are needed.

3) Who can you bring into your classroom for interactions with business and community leaders?

- Finding mentors/shadow sites
  Helping find out what STEM jobs are in the area and connecting them to students.

- Correctional Facilities
  Have CTE instructors and business owners are coming to speak to their students.

- STEM Diploma

- Need communication between employers and schools
  Students are being trained but schools don't know where to send them (e.g. drafting in correctional facilities).

  STEM School designation

4) What scalable online tools can you use to facilitate academic and career planning?

Resources
Reimagining STEM workforce development as a braided river
An article on a contemporary approach to today's science careers that look less like a structured pipeline and more like a collection of paths that change and adapt to the needs of the individual.
Reimagining STEM Workforce Development as a Braided River - Eos

Your Career is a Jungle Gym, Not a Ladder
Read a super short article on how, according to Sheryl Sandberg, we should treat our career like a jungle gym, not a ladder.
The Bamboo Project: Your Career is a Jungle Gym, Not a Ladder (michelemmartin.com)

Advanced Opportunities for High School Students
A webpage full of ideas for Idaho high school students to take advantage of advanced opportunities such as dual credit, technical competency credit, Advanced Placement, workforce training, career-technical credits, and International Baccalaureate programs.
Advanced Opportunities for High School Students - Next Steps Idaho

Next Steps Idaho

This is an Idaho-specific website where you can browse hundreds of diverse jobs and careers, including Idaho's "hot jobs."

Careers - Next Steps Idaho

Career One Stop

This website is sponsored by U.S. Department of Labor. You can explore careers, take assessments, and plan careers.

Explore Careers | CareerOneStop

Appendix A – Engineering careers foldable

Engineering Careers – Foldable

Procedure

In this activity you will be investigating an engineering career. The foldable you will create should highlight the responsibilities, salary range, best location, education and future demands for this type of engineer.

1. Take the quiz using the link in Google Classroom.
2. From the careers listed in your results, choose one from the top 3 of your list. Do some research on that engineering type. Take notes of the information you want to include in your brochure.
3. Create a brochure that highlights the information that you collected on your career. Make sure to include the following.
   - **Cover** - include the type of engineer in your title, include your name. Decorate however you like.
   - **Page 1** - Your top 3 results from the quiz, including the percentage.
   - **Page 2** - Provide a picture of an engineer working in this field – you may sketch your picture or print one on your own time.
   - **Page 3** - What type of work do people in this career perform?
   - **Page 4** - What is the current salary of this occupation?
   - **Page 5** - What are the working conditions? Inside/Outside? Office/Factory/Lab?
   - **Page 6** - What are the major job responsibilities?
   - **Page 7** - Is there a demand for this job in the future?
   - **Page 8** - What kind of education is needed for this type of work?
   - **Page 9** - What are 3 different colleges/universities you would consider going for this type of engineering? Location of each? How much is tuition at each?
   - **Page 10** –
     - What impact do you think engineers will have on your future?
     - Do you think you'll be interested in pursuing a career in engineering? Why or why not?

Notes for Foldable:

Cover:
Page 2:
Page 3:
Page 4:
Page 5:
Page 6:
Page 7:
Page 8:
Page 9:

Appendix B – Engineering Careers Foldable – rubric

Engineering Careers – Foldable Rubric

Topics	4 points	3 points	2 points	1 point
Content	Purpose of brochure is obvious. Addresses all highlighted areas.	Purpose of brochure is obvious. Does not address 1-2 of the highlighted areas.	Purpose of brochure is not obvious. Does not address 2-3 of the highlighted areas.	Purpose of brochure is not evident. Missing major details.
Grammar	There are no grammar errors. There are no spelling errors.	There are 1-2 grammar errors. There are 1-2 spelling errors.	There are 3-4 grammar errors. There are 3-4 spelling errors.	There are more than 4 grammar errors. There are more than 4 spelling errors.
Mechanics	Layout follows accepted brochure format. Brochure follows a logical sequence in the transfer of info.	Layout follows accepted brochure format. Brochure does not follow a logical sequence in the transfer of info.	Layout does not follow accepted brochure format. Brochure does not follow a logical sequence in the transfer of info.	Layout is very confusing. Brochure lacks a logical sequence in the transfer of info.
Neatness & Organization	• Easy to read. • Headings are used. • Color is used to amplify the organization.	One of the 3 is missing.	Two of the 3 are missing.	All 3 are missing.