

Activity Summary Table

What We Did	How We Did It	Why We Did It
<p>[Breakout #1] Identity Mapping Students represent their own identities through an open-ended identity mapping activity. Students are encouraged to include any aspect of their life, culture, personality and/or priorities that they think are an important part of their identity. Students then are introduced to diverse scientists and identify how these scientists involve their identity in the science they do. Class closes with the creation of a whole-class identity map and a "science in my life" survey.</p>	<ul style="list-style-type: none"> ● Individual Identity Map: Who are you? What people, places, languages, cultures and priorities shape who you are? ● Scientist Identity Maps: What can we learn from diverse scientists about bringing our whole selves to the science we do in this class? ● Whole-Class Identity Map: What do we each bring to this community of scientists that we can draw on as we work as a team? ● Science In My Life Survey: How has science impacted your life? What environmental, health, or other science-related topics impact you or your community? 	<ul style="list-style-type: none"> ● Meaningfully getting to know students: Creating a justice-centered, empowering science classroom begins by understanding your students. ● Challenging notions of "who does science": Learning about modern diverse scientists who study phenomena important to their identity and communities. ● Prioritizing classroom belonging: Intentional recognition that everyone is a generative member of our scientific community. ● Assessing student curiosities and scientific priorities: Collecting information that can be used throughout the year to keep science class relevant and meaningful.
<p>[Breakout #2] Localized Anchoring Phenomenon: Students are introduced to a local data set related to a shared experience- the COVID-19 pandemic. They make noticings and wonderings about the anonymized data then it is revealed that they know (and even live in!) the communities. They then develop a public question board to drive further investigations.</p>	<ul style="list-style-type: none"> ● Introducing the Anchoring Phenomenon: The COVID-19 pandemic is experienced differently by different people and communities, why? ● Analyzing Local Data: What similarities and differences are there among communities? Why might that be? ● Creating a Driving Question Board: What investigable questions can we make public? 	<ul style="list-style-type: none"> ● Planning for a purpose: Students draw on their own experiences to access science and envision change. ● Examining the intersections between science and social inequities: Students engage in making observations about relevant and localized data to begin to examine intersecting systems of oppression. ● Creating routines to return to: Students are asked to think about why and how we do science.
<p>[Breakout #3] Modeling Phenomena in Context: All students represent their thinking and current understanding of the phenomena through labeled drawings and written text. Our model for the culture-setting unit asks students to discuss the role that in/equity plays in our phenomenon, in addition to the scientific explanation. Student models are revised several times throughout the unit as they figure out more about the anchoring phenomenon.</p>	<ul style="list-style-type: none"> ● Initial Model: What prior experiences and knowledge do we bring to the table? ● Model Consensus: What do we all agree should be in our model? Are there drawing conventions we can all agree on? ● Gotta-Have Checklist: What are the core components our model needs to make sense of our phenomenon? ● Model Revisions: How has our thinking changed based on what we have figured out so far? 	<ul style="list-style-type: none"> ● Showcase student sensemaking: Students represent their thinking with text and drawings in a language and format that makes sense to them. ● Science in context: Scientific decision-making is embedded in complicated socio-political contexts. ● Hear all voices: All student ideas matter and are valued through consensus. ● Nurture revision as a good and necessary practice: Emphasis is on the development of understanding, not on a single correct answer. Students will revise their models to show changes in thinking over time.
<p>[Breakout #4] Experiment Design: Stemming from questions curated on a driving question board, students identified testable questions, designed and carried out experiments, analyzed data, and shared their findings.</p>	<ul style="list-style-type: none"> ● Testable vs. Groundwork Questions: What is a testable question? ● Experiment Design: How do we answer our questions through experiments? ● Sharing information: What can others learn from my study, and what can I learn from others'? 	<ul style="list-style-type: none"> ● We can all do science: Honoring student curiosity and questions with scientific experimentation. ● Modeling Scientific Practices: Students experience how science is performed.
<p>[Breakout #5] Community Connections: Students co-constructed FAQ sheets using credible information from experiences in class, medical mentors, and peer-reviewed online research. We printed the FAQs for students to post around school and to bring home to their communities.</p>	<ul style="list-style-type: none"> ● Mythbusters: How do we locate trustworthy information? ● Medical Mentors: What are other experts saying, and how do we "pull them in" to have conversations with us? ● Peer Review: In what way(s) does my information resonate with my community? ● FAQ Sheet: How do I communicate what I learned to and for people I care about? 	<ul style="list-style-type: none"> ● Empowering Students: Students advocate for issues that matter to them and to the global community! ● Honor Community Expertise: Students engage with diverse perspectives and honor community contributions! ● Data-Driven: Replacing 8 unit tests with authentic assessments increased students passing statewide assessments by 12.2%!

Breakout Room # 5: Community Connections

Mythbusters: How can we evaluate information to determine its reliability?

- Step 1:** Discuss what students have heard about the pandemic.
E.g. "It was hard for me to get an appointment," "I heard the vaccine has a microchip."
- Step 2:** Introduce methods to evaluate reliable evidence vs. misinformation.
 - o Our school's librarian came in to discuss the CRAAP Test.
 - o **STEM Tool 31: This is an opportunity to connect with a local librarian!**
- Step 3:** Research the information and sources from which students heard this information/misinformation. We used this as an opportunity to evaluate bias.
- Step 4:** Use classwork and research to answer the anchoring question.

Evaluating Sources with CRAAP

C	Currency - the timeliness of information When was the information published or posted? Has the information been revised or updated? Is the information current or out of date? Are the links functional?
R	Relevance - the importance of the information for your needs Is the information at an appropriate level? Have you looked at a variety of sources? Does the information relate to your topic or answer your question? Who is the intended audience? Is the information at an appropriate level? Have you looked at a variety of sources?
A	Authority - the source of the information Who is the author/publisher/source/sponsor? Are the author's credentials or organizational affiliations given, and what are they? What are the author's qualifications?
A	Accuracy - the reliability, truthfulness, & correctness of the content Where does the information come from? Is it supported by evidence? Has it been reviewed? Can you verify any of the information in another source? Does the language seem unbiased?
P	Purpose - the reason the information exists What is the purpose of the information? Do the author's sponsors make their intentions clear? Is this information fact, opinion, propaganda? Is it objective, impartial & unbiased?

Medical Mentors: How can we pull in expert opinions to inform our perspective?

- Step 1:** Generate a list of questions → these can come from the DQB!
- Step 2:** Invite local experts to answer student questions.
 - o We partnered with medical professionals at the University of Rochester.
 - o **STEM Tool 31: This is an opportunity to partner with local experts, including local medical professionals and students' community members (family, friends, etc.) who work in the field!**
- Step 3:** Use information from interviews to answer the anchoring question.

Peer Review: How can we provide opportunities to present our information to evaluate its reception by our community?

- Step 1:** Co-construct responses to the anchoring question.
- Step 2:** Introduce protocol to review student responses.
 - o We had students across classes review group drafts using a "glow, grow, question" protocol.
 - o **STEM Tool 31: This is an opportunity to invite an audience that can evaluate students' drafts, including school and local community members!**
- Step 3:** Revise drafts according to community feedback.

Group 5

Focus Question: Is the covid vaccine safe? And is it trustworthy?

Sep 24, 2021
So why exactly are these misconceptions dangerous?

Myths and/or Misconceptions:

- President Joe Biden announced his latest effort to stop the spread of COVID-19, he will be putting Americans who have chosen to not be vaccinated, into "quarantine camps" where they will be detained indefinitely until they get their shots. - *Oasis Fouq, The Stock Market, 2021*
- The New York Times will tell you that, as of Feb. 16, over 487,000 Americans have died from COVID-19, but I say it's all hogwash. All these insane people will tell you that it's all about the health of "The Public," but I don't know who that is, and I don't care. No one I know personally has died from COVID-19, so it simply can't be real! - *Sophia Pan, Spoke News, 2021*

The Facts and Science:

- "The FDA's approval of this vaccine is a milestone as we continue to battle the COVID-19 pandemic. While this and other vaccines have met the FDA's rigorous, scientific standards for emergency use authorization, as the first FDA-approved COVID-19 vaccine, the public can be very confident that this vaccine meets the high standards for safety, effectiveness, and manufacturing quality the FDA requires of an approved product." - Acting FDA Commissioner Janet Woodcock, M.D. This is important because the FDA is the one in charge of the public health on ensuring the safety on food supply, cosmetic, and products that transmit relation.
- "To date, the systems in place to monitor the safety of these vaccines have found only two serious types of health problems after vaccination, both of which are rare. These are anaphylaxis and thrombocytopenia syndrome (TTS) after vaccination with J&J/Janssen COVID-19 Vaccine." The Pfizer and the Moderna vaccine both have a 90% or more of effectiveness against covid, there would be side effects like, redness on the spot you were given the vaccine, tiredness and swelling which would be a normal reaction to the vaccine. (CDC, 2021)

Sep 24, 2021
OK, so you explained why the vaccines are safe. But what exactly makes them trustworthy? Some people might not believe they are safe yet...

Creating FAQ Sheets: How can we disseminate reliable information about the pandemic to our community?

- Step 1:** Provide student choice for students to create their FAQ sheets.
Students could make a slideshow, draw a poster, or design a virtual document.
- Step 2:** Allow time for students to get creative.
- Step 3:** Print out FAQ documents for students to disseminate.
 - o Our students posted their FAQs around the school and brought them home to their communities.
 - o **STEM Tool 31: This is an opportunity to communicate with local spaces that can post student work!**

Challenges:

- Identifying Connections:** It takes time and patience to establish connections and align schedules with local partners.
- Honoring Perspectives:** It is necessary to have challenging conversations and remain mindful of diverse experiences.

Ideas for your Classroom:

- Power of the Preview:** How can you use a Culture-Setting Unit to preview justice-centered practices and/or scientific content that you can leverage throughout the year?
- Authentic Assessment:** How can you empower students as agents of change while assessing their learning?

FAQ: Mask For Covid-19

Facts About Masks:

1. I believe the most effective way to end the global pandemic is wearing masks. In the article [Face Masks Really Do Matter: The Scientific Evidence Is Growing](#), it says, "Face masks are emerging as one of the most powerful weapons to **slow the virus's** transmission, with growing evidence that facial coverings help prevent transmission—even if an infected person is in close contact with others if face masks are emerging as one of the most powerful weapons to **slow the virus's** transmission, with growing evidence that facial coverings help prevent transmission—even if an infected person is in close contact with others. This evidence shows that face masks really are effective. It shows how wearing a mask can prevent the spread of the Covid-19 virus."
2. I believe the most effective way to end the global pandemic is by wearing mask. In the article [Mask To Protect Yourself From Covid-19](#), it states, "Wearing face masks is recommended as part of personal protective equipment used as a public health measure to prevent the spread of coronavirus disease 2019 (COVID-19) pandemic."
3. I believe the most effective way to end the global pandemic is to wear mask. In the article [Face Mask: Ditch The Covid-19 Pandemic](#), it says, "Wearing face masks is recommended as part of personal protective equipment used as a public health measure to prevent the spread of coronavirus disease 2019 (COVID-19) pandemic."

Common Misconceptions About Masks:

- 1) **Shortness of breath and may lead to death**
Response: This information is false. Masks are very breathable and are made up of breathable fibers. This is how it fails the CRAAP test.
- 2) **A way to control people**
Response: This information is false. Masks are a way to protect people and their own health. This is how it fails the CRAAP test.