Breakout #1: Addressing learning losses without compromising standards

What does learning losses look like for students in the science classroom?
- hard to see students and experience the face-to-face interactions
- Equity issues - the pandemic has really uncovered the huge discrepancy with students and access to learning

Experiences of the Group
- Pre-service
- MS and HS
- Special Education
- Professional Learning Support
- Elementary

How are you motivating students?
- Creating backpacks with materials to keep students interested and engaged while remote
- Just being aware that things needed to change is HUGE
- Smaller groups of learners to better facilitate conversations, interactions, collaborations

Giving students time to talk!
Facilitate open-ended conversations to keep it flowing
In science... let the phenomena lead the thinking and talking
Breakout #1 Cont.: Addressing learning losses without compromising standards

On Twitter - #NGSSchat 8:00 Central time

Hybrid is here to stay!

Keeping students active and talking

Maekayla (pre-service) feels very empowered and prepared! ;)

These kiddos are better prepared for LIFE

They have been working through a lot

They have been facing CRAZY adversity this past year!!

Definitely NOT the "lost generation"

Is it really learning loss? Big picture worldwide ALL students have gone through this pandemic

@haschweingruber on Twitter
Breakout Room #2: Sharing authentic assessment strategies

**Strategies using**

- Using chat box and respond to some responses, rather than calling on kids cold
- Self-directs projects / open inquiry when learning from home, some got really into it and put more into it than when in-person at school (lots of options)
- Use shared common experiences to respond to on assessments
- Using Edpuzzle, have individual students record their answers (like writing out of it) to get into their science and not worry about explaining their thinking formally
- At end of the week ask “Did we do any of these?” referring to SEPs or CCs to get them to reflect on their experiences they just did (to help see if they know what it is)

**More individual, self-directed work when learning remotely**

- Authentic assessment examples: lots of hands on projects (transfer knowledge into something they create)
- Talk through a diagram of pieces after they build their project, then they iterate and do their piece again
- Have students tally themselves when they are doing content or skills or SEPs or CCs while they are doing their learning experiences (within unit, marking period, across year)
- Integrate self-assessments into learning experience for their learning benefits AND for our assessment benefits

**Things to consider**

- Being mindful of our responses to their responses, and how that influences their learning and/or what we can glean about our students knowledge
- Context: what references do we use (do they work? can they relate it to the way I intend?)
- How do I make the assessment a deepening of their learning while I am also getting a sense of their understanding?
- Need to have some notion of what everyone else knows

**Struggles**

- How assess kids to understand what they know without stifling their knowledge and understanding by getting bogged down in science terms?
- Kids really struggle with drawing models / kids scared to put their ideas out there
- Struggle to know what individual students think vs. what whole class knows
- Hard to get all 3 dimensions into an assessment

**General thoughts**

- How we phrase things / difference in expectations based on the words we use and how they are heard/perceived
- Remember need to ask the right question, and then interpret their responses to make sense of what they know.
- The thing that I don’t find time to do well because of limited contact time with the students...need assessment to be continuation of their learning while doing it
- Always have to keep this in mind when working with kids

- Hard to do group, collaborative work remotely dynamically and seeing their interactions
- Sometimes get so into the creativity part of an authentic, engaging assessment they forget the science part
Breakout #3: Strategies to develop more inclusive classrooms (minimize biases and inequalities including technological challenges)

Obstacles to inclusivity:

**Obstacle 1:**
-- What are the materials kids need...and how is the exclusive & inclusive?

Suggestions #1:
-- Need to use simple, commonly available materials.
-- Using only paper is a good idea.
-- Even if you pack bags, people can’t pick them up; can’t send home. Using common things around the house is a good solution.
-- Do virtual labs so all can log on (doesn’t deal with issue of poor connectivity).

**Obstacle #2**
-- ESL students...different languages spoken

Suggestions #2
-- Translate into other languages as feasible.
-- Use a translator app.

**Obstacle #3**
-- How to be inclusive in how science and scientists are portrayed?

Suggestions #3:
-- Use Skype A Scientist a lot...show scientists that look like your all students.
-- Discover E Chats with Changemakers: Chats with Changemakers’ excellence. Using every day things. The chats are with diverse people from around the world.
-- Take the interest of the students and build around it. I suggest paper models check this out: https://www.dazzlingddiscoveries.com/engineeringwithpaper
-- The bundles of STEM Books NSTA publishes are a great way to find diversity represented.
-- The NSTA STEM public forum is a good way to interact with others, especially if you are somewhat isolated in your workplace (i.e., no other or only a few science teachers).

**Obstacle #4**
-- How to motivate students online

Suggestions #4:
-- Use place-based science to help with equity. It’s transdisciplinary & cross-cultural fostering scientific communication practices needed to address existing and emerging problems while truly involving stake holders from diverse backgrounds.

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Use NSTA’s excellent lesson plans...love the structure. There are so many lesson plans out there, not all are good, but NSTA is excellent! It captures the whole of what teachers need to teach a lesson.

---Create personal interactions. Love this virtual format because it allows for valuable interactions that is hard to get in other settings. It’s a different kind of networking. This is likely a practice we’ll keep post-COVID. Provides an opportunity for those who are more introverted to shared more easily.

---Provide time for students to think before answering; this is especially important with more introverted students.

---The online format allows small groups promotes interaction.

---Introduce information not commonly known and build on it. E.g., polar bears are a good topic for inclusivity. They are black skinned with white fur...give them black paper & white crayons or fur and have them make a polar bear...great discussions.
Best practices in hybrid teaching experiences
Examples of successful collaborations between informal and formal educators
Creative Ways to Support the Social and Emotional Needs of Students During Covid-19
Title of Session