

# Advanced Module on the Science Seminar



*Session #3: How do you  
conduct a science seminar?*

# Session #3 Agenda

*How do you conduct a science seminar?*

- Extension Discussion: *Try it with your students!*
  1. Video: Stepping Back During Science Seminars
  1. Presentation: Roles and Expectations for the Science Seminar
  1. Activity: Science Seminar
  1. Discussion: Reflect on the Science Seminar
  1. Session Takeaways
- Extension – *Try it with your students!*

# Extension Discussion: *Try it!*

If you used the strategies covered in the last session, discuss:

1. What went well?
2. What was challenging for students? For you?

# 1. Video & Discussion: Stepping Back During Science Seminars-



Watch the video below, which describes the role of the teacher during the science seminar.

## Discussion Questions:

1. What role did the teacher play in the science seminar?
2. What strategies do you notice the teacher using to facilitate the science seminar?
3. What concerns do you have about running a science seminar in your classroom?
4. What do you think students will do well? What challenges do you anticipate students having?

## 2. Presentation: Roles and Expectations for the Science Seminar



### Student and Teacher Roles:

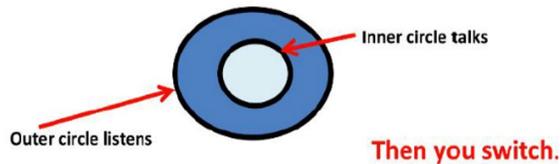
- Let students lead the discussion
- The teacher steps back and takes notes

# Seating During the Seminar

## Science Seminar Roles

Class Arrangement:.

- Half the class sits in the inner circle
- The other half of the class sits in the outer circle.



- Set up chairs in concentric U-shapes
- Teacher stands behind the circle, or off to the side



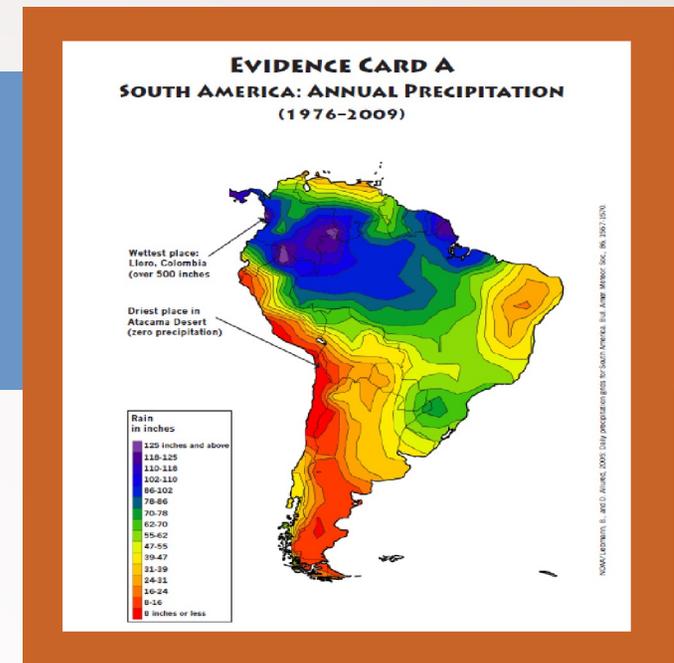
# Communicate Norms

- Use sentence starters and norms to offer students a way to speak to each other and offer critique
- Create a safe space for students to feel comfortable communicating with each other
- Allow for long, awkward silences.



# 3. Activity: Science Seminar

## Why Does the Atacama Desert Get So Little Precipitation?



**Claim 1:** Prevailing winds on the Pacific coast cause extremely low precipitation in the Atacama Desert.

**Claim 2:** The location of mountain ranges causes extremely low precipitation in the Atacama Desert.

**Claim 3:** Surface temperatures of the ocean cause extremely low precipitation in the Atacama Desert.

## 4. Discussion: Reflect on the Science Seminar

- As a “student,” what worked well for you? What was challenging?
- What types of interactional strategies can you see your students needing to engage in a science seminar?
- How could engaging in a science seminar help students develop a better understanding of the science content?

# 5. Session Takeaways

1. Allow for awkward silence.
2. Let students lead the discussion.
3. Chime in at the right moment.
4. Make a safe space.
5. Communicate norms.
6. Set up chairs in concentric “u-shapes.”
7. Include mixed ability levels in circles.
8. Encourage students to project supports.
9. Establish a hot seat.



# 1. Allow for Awkward Silence



*“So, long silent stretches are common when I've done a science seminar for the first time with students, and it's important to let that silence be there, I think, because if I jump in and try to push the seminar one way or the other, then already I'm taking it away from the students.”*

- Elizabeth Shafer,  
Teacher, Lawrence Hall  
of Science

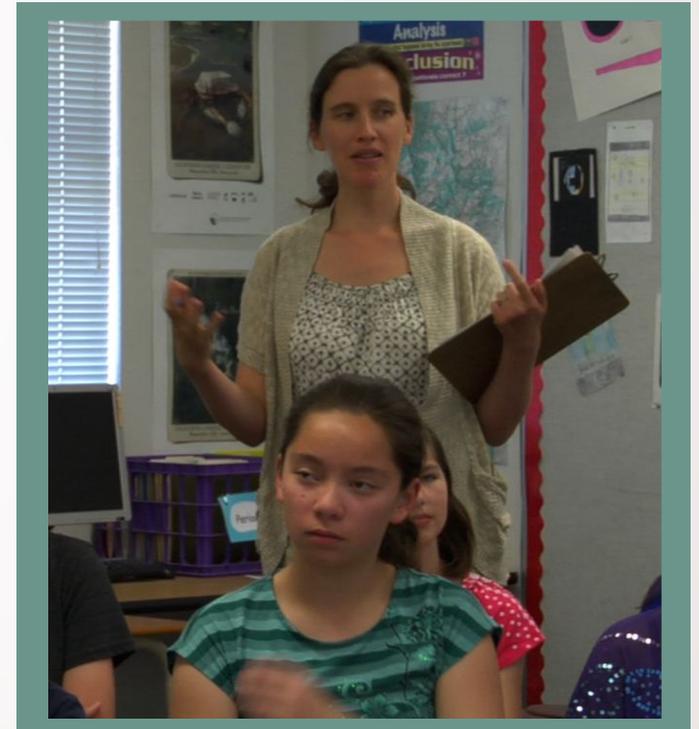
## 2. Let Students Lead the Discussion

*“The teacher's role in the seminar is really to step back and allow students a place and a time where they can share their ideas with each other. It's been my experience that the most powerful science seminars are when I've been able to step behind the semicircles and just allow the seminar to come from the students.” - Elizabeth Shafer, Teacher, Lawrence Hall of Science*



### 3. Chime in at the Right Moment

*“If the seminar stalls, there are a couple of things that I might do. First, I might make sure that we get through discussing all the evidence and really digging into the evidence and seeing if that can bring kids to a different understanding about a claim. Another thing I might do is, depending on the timing, I might let them know that it's almost time to switch semicircles, and I've also found that that can really motivate students who might have been holding back to share their ideas and get the conversation moving a little more quickly.” - Elizabeth Shafer, Teacher, Lawrence Hall of Science*



## 4. Make a Safe Space



*“Knowing that the social environment is a welcoming one where they can feel safe is often a first step to get a lot of kids on board with being comfortable in discussions in your classroom.”* - Dr. Megan Goss, Teacher, Lawrence Hall of Science

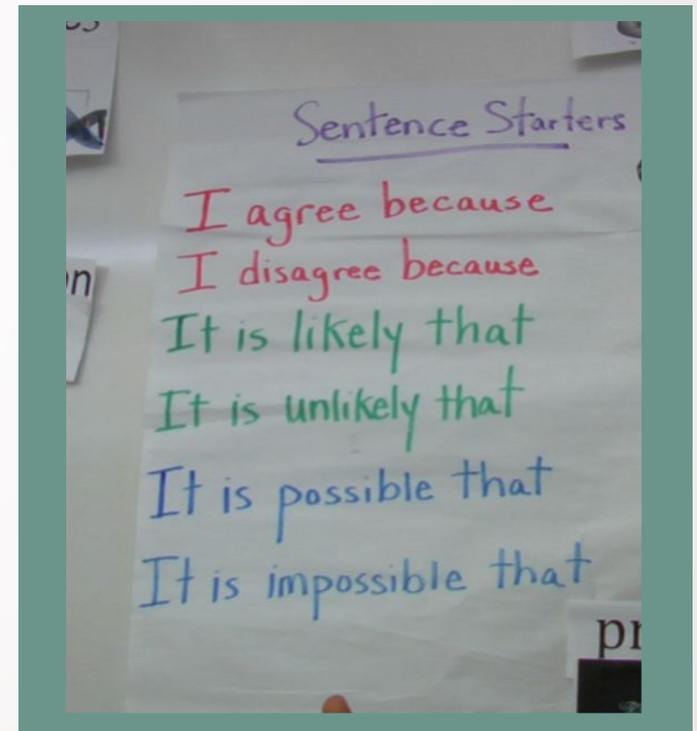
# 5. Prep Students the Day Before

*“Sometimes between preparation and lowering the stakes - this is not a quiz, this is not a test - [the Science Seminar] is a chance for us to come to a better understanding of this. Kids get a chance to take some risks.” - Cole Entress, Teacher, Lawrence Hall of Science*



## 6. Communicate Norms

*“Have...sentence starters and norms that you offer to the kids of how to speak with each other. And so, if you have those, then you can always respond to the kids who are talking aggressively...You can say, “Hey, say that again, but say it in a way that's respectful.” And if the kids know that that's going to be the response, then even the more reluctant talkers will feel a lot more comfortable and confident that they can speak up in class.” - Dr. Megan Goss, Teacher, Lawrence Hall of Science*



# 7. Set Up Chairs in Concentric “U-shapes”



## 8. Include Mixed Ability Levels in Circles



*“And it's okay if their contribution is not spot-on at the beginning, because that's the whole point. No one interprets everything right at first.”*  
- Cole Entress, Teacher, Lawrence Hall of Science

# 9. Encourage Students to Project Supports

*“I have a couple of little tricks that I use to keep myself from [interrupting] too much. One is to give myself the job of being in charge of the visuals listening to what a student says and making sure that an appropriate visual is projected so they can refer to [it]. - Jonathan Curley, Teacher, Lawrence Hall of Science*



# 10. Establish a Hot Seat



*“Sometimes people in the outer circle...have a burning desire to say something so we’re going to put one empty seat here--you may make one trip when you’re in the outer circle to the hot seat if you want to add a quick thought and then you return back.” - Cole Entress, Teacher, Lawrence Hall of Science*

# Extension: *Try it with your students!*

- *Before the next session, try a science seminar with your students!*



The Learning  
Design Group



## PARTNERS AND RECOGNITION



Developed in collaboration  
with Boston College



Funding provided by  
National Science Foundation

NSF DRL-1119584

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