

# Opening & Reflection

Nevada Early Childhood Leadership Series

Session 5

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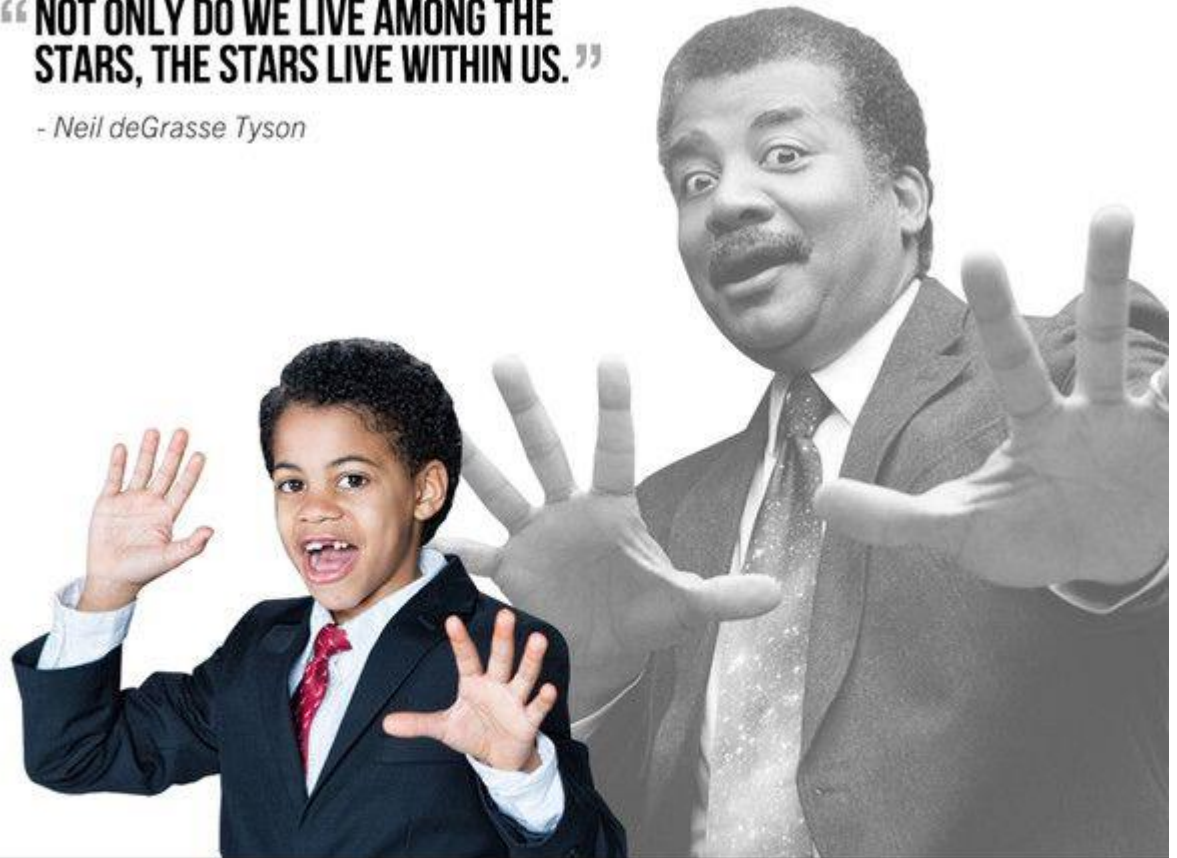
## Session Objectives

- Preview the scope of work for the day
- Reflect on the impact that number sense is having in their centers
- Share successes and challenges connecting around introducing number sense to teachers and implementation at their center/school

**“ NOT ONLY DO WE LIVE AMONG THE STARS, THE STARS LIVE WITHIN US. ”**

*- Neil deGrasse Tyson*

**- ICE  
BREAKER –  
What did  
you want to  
be when you  
grew up?**



**BECAUSE  
OF THEM  
WE CAN**

**YOU CANNOT BE WHAT YOU CANNOT SEE  
HELP OUR CHILDREN REIMAGINE THEIR POSSIBILITIES  
TAKE THE PLEDGE AT [BECAUSEOFTHEMWECAN.COM](http://BECAUSEOFTHEMWECAN.COM)**



### Table Reflection and Discussion

- How did you have teachers dig into number sense/problem solving/critical thinking? (What setting? What format? What activities or strategies did you use?)
- What went well? What evidence have you seen of the training on number sense thus far in their classrooms?
- What was challenging? How did you address the challenges?
- Group brainstorm ways to address outstanding challenges moving forward.



STEM JOBS  
WILL GROW  
**1.5x**  
FASTER  
THAN OTHER JOBS



Source 1

AND, ethnic disparities exist in STEM careers:

**ONLY 12%**  
OF SCIENTISTS  
& ENGINEERS ARE



**MANY CHILDREN FROM LOW-INCOME ZIP CODES DO NOT PURSUE STEM CAREERS BECAUSE OF EXTERNAL FACTORS SUCH AS:**

- lack of exposure
- poorly equipped schools
- lack of role models from STEM backgrounds



Source 2



**Jot down where and how you see the importance of science, engineering, and technology in the world around you. Why do we need to make these connections for our children?**

# Tracker System

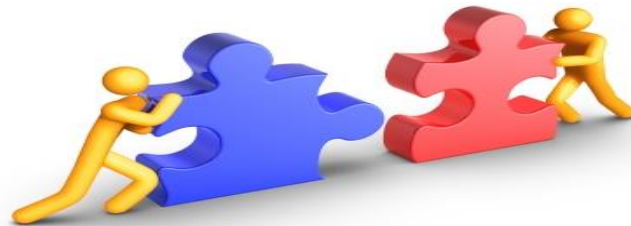
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### Partners Reflect on Math Data

- Discuss teacher data
- Brainstorm next steps to grow your teachers through PD opportunities and coaching
- What steps do you need to take as a leader between now and next session to ensure teachers are moving forward?



# **Building Math Skills – Math in its “Natural Environment” and STEM**

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## Objectives

- Articulate the connection with STEM to young children's future math success
- Understand and describe what STEM concepts are and how math exists in the "world around us"
- Plan for and identify opportunities to connect math, science, and the world around us
- Practice building students' math skills in STEM-based centers and as part of exploring/understanding the world around us

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# Agenda

Opening

## Why STEM?

Engineering and Technology

Science

Deep Dive: STEM in Action

Application: Plan and Practice

Closing

“Understanding the world around them is one of the strongest predictors of young children’s later science learning and reading, and a significant predictor of mathematics success.”

--Grissmer, et. al., *Developmental Psychology*, 2010



**Science** is a way  
of **thinking**

Observing, experimenting, making predictions, sharing discoveries, asking questions and wondering how things work

**Technology** is a  
way of **doing**

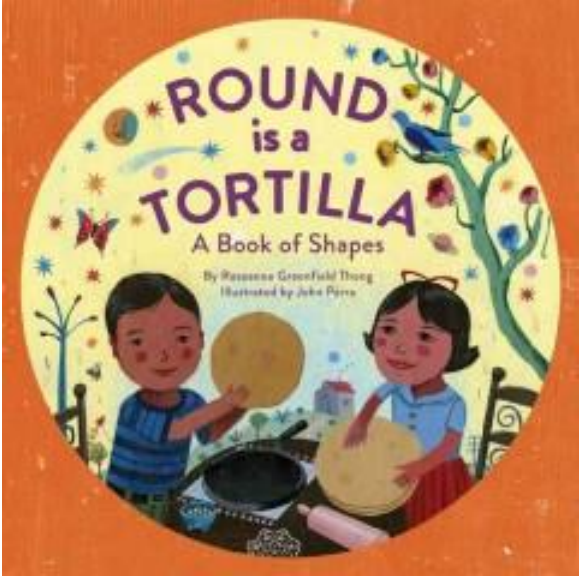
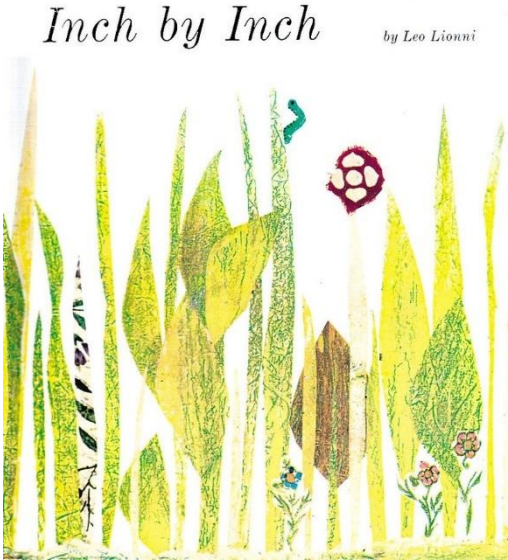
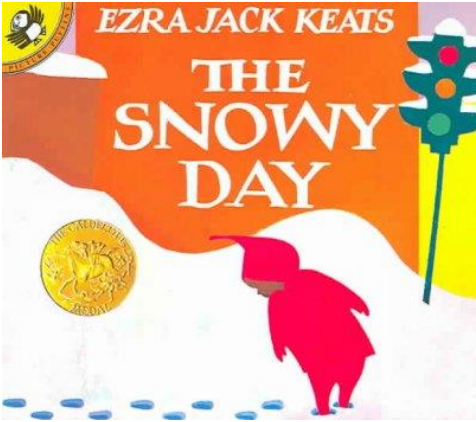
Using tools, being inventive, identifying problems and making things work

**Engineering** is a  
way of **creating**

Solving problems, using a variety of materials, designing and creating things that work

**Math** is a way of  
**measuring**

Sequencing, patterning, and exploring shapes, volume, and size



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In your handouts, respond to the following questions:

- What connections can you make between what we just saw and the vision of math we've built thus far in our series?
- How do you see the child engaging in
  - Problem-solving
  - Reflecting on their approach to problems
  - Productive struggle?

*Extend your thinking: What connections do you see to the rubric?*

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Opening

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Engineering and Technology

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In your handouts, consider:

What connections can you make between what you see in this video and the vision of math we've built thus far in our series?



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**Deep Dive: STEM in Action**

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# STEM in Action Deep Dive: How do we plan effectively for STEM opportunities?

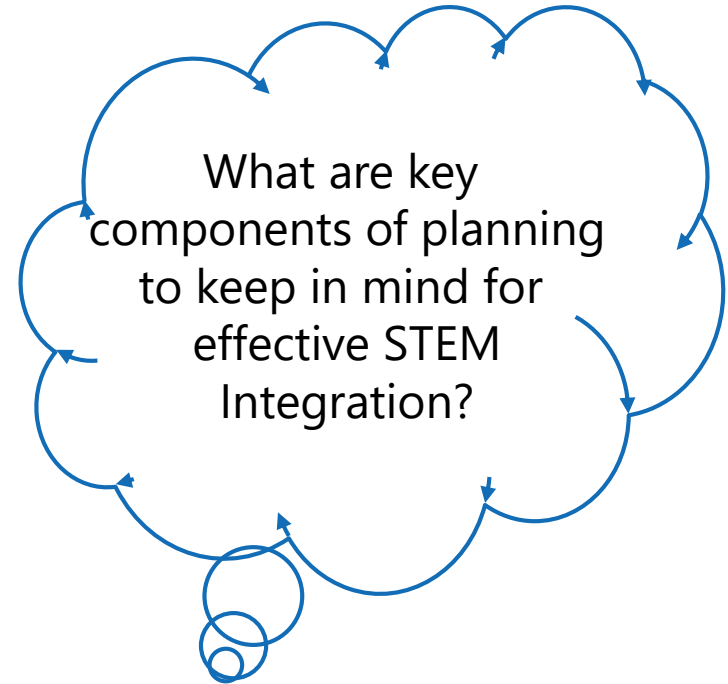
Handouts, Page 5-6

**Key Idea:** Effective STEM opportunities are intentionally planned to align to math standards, build children's problem solving skills, support them in productive struggle, and support them to explain their thinking.

**1-Independently:** Read through [the NAEYC article](#) for the static electricity task or the circuits task.

**2-In pairs:** Break down the static electricity task or the circuits task with a partner.

**3-In groups of 4:** Discuss what made these activities effective. What steps are needed in planning to ensure a STEM activity is fruitful?



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Based on our group brainstorming (**what centers/stations/activities in your rooms do you already have that support STEM exploration?**), pick **one** to focus on.

Use the guided process in your note-catcher to **plan** keeping in mind the notes about effective STEM planning from our previous activity.

**How can you use those opportunities that already exist (like water tables, block tables, etc.) and plan more intentionally for them instead of feeling like you need to create something brand new?**

We'll take photos of everyone's plans and share with the group after feedback and revision!



### Feedback

- Swap your paper with the person sitting next to you.
- Read through the planned activity.
- Note strengths as well as questions or areas of development.
- Highlight the biggest glow and biggest grow.



### Revise

- Swap back papers. Read through your partner's feedback and revise your plan to make it stronger in line with our vision of excellence in STEM.

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## Reflecting on Practice

Put your leader hat back on. Discuss the following questions with your group:

- How could this quick planning and practice activity support your teachers in gaining comfort and confidence with integrating STEM intentionally in their day-to-day work?
- How might you need to adjust or adapt this practice opportunity for your teachers?

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**Take the next several minutes to create a plan for how you will take this content back to your team.**

- When will you deliver this content to your staff and/or the teachers you work with?
- How will you deliver content to your staff and/or the teachers you support? (One whole-group two-hour professional development? Smaller groups? Smaller chunks of time? Direct facilitation vs. small group planning?)
- How will you support your team in furthering students' STEM skills? What tools will you create and provide them with?
- What challenges do you anticipate your staff and/or the teachers you support may have with this content?



***The questions below are for when you facilitate for your staff:***

What are your next steps for ensuring that you are constantly and intentionally building supporting STEM with students?

When and where will you prioritize focusing on STEM? How will you hold yourself accountable for using these strategies?

What questions do you still have about what you learned today?

What feedback do you have about the session for the facilitator?

### Next Steps for Teachers

- Draft sentence starters that will help you remember to use STEM strategies daily. Post these prompts around your classroom strategically.
  - Have your prompts posted by **PROVIDE DATE**.

Break 😊





### **Reflect on your experience using the classroom observation tool.**

How have you gathered the data you need from classroom observations?

What has worked well for you to make sure you input the data and make use of it in a timely manner to support teachers?

# **Practice: Observation and Feedback Practice**

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## Objectives

- Develop a deeper understanding of the math observation rubric in line with math integrated with science, engineering, and technology
- Observe an ECE math lesson and take low-inference notes on evidence of integration with science, engineering, and technology
- Prepare for delivery of feedback to a teacher
- Practice feedback delivery

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# Agenda

Opening

**Digging Into the Rubric: Where Is STEM?**

Practice Observation Using the Rubric

Feedback Planning and Practice

Closing

## Digging in to the Rubric: Where is STEM?



Take **5 minutes** to:

- Highlight and annotate connections to STEM that you see in the rubric
  - Be sure to look at: Integrated, Cohesive Learning
- What evidence do you need to gather to effectively rate a lesson that is integrating science, technology, and engineering with math?
- What questions do you have?



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# Agenda

Opening

Digging In to the Rubric: Where Is STEM?

**Practice Observation Using the Rubric**

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**The purpose of this practice is for you to have an opportunity to observe for integration of math and STEM concepts so that you can more nimbly do so in your own center/school.**

### Practice Steps:

- o Watch the video clip and collect data in line with all performance areas for teacher and student actions.
- o You'll reflect and respond in three ways – first independently, then in pairs, and lastly summarizing our analysis whole group.

### Take 2 minutes to look for trends in your notes.

1. How would you rate what we observed on the rubric? Does this teacher's instruction exemplify what we identified as critical for math and STEM concepts?
2. What is emerging to you as a primary area of development? (*You don't have to fully commit to your area of development quite yet!*)

### Take 3 minutes to reflect in pairs.

- Compare evidence you collected. Do your notes look similar?
- What was difficult about collecting evidence this way? Easy?
- Share your thinking about an area of development for this teacher.



**Be prepared to share out your responses with the group.**

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# Agenda

Opening

Digging In to the Rubric: Where Is STEM?

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**Feedback Planning and Practice**

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## Direct Feedback: *Share the Key Lever*

**Key Idea:** When you deliver feedback during the coaching conversation, you will use two strategies: *Share the Key Lever* and *Map the Conversation*. In this portion of the coaching conversation, the teacher should have a clear understanding of the growth area they are working on, why that skill is important, and what you are going to do in the conversation to build that skill.



### **To effectively *Share the Key Lever*:**

- Share concrete evidence from the observation that illuminates key lever you want the teacher to develop:
  - Show a video of the moment in the class that clearly demonstrates the problem. “What are the students doing? What are you doing?”
  - “Do you remember what happened in class when \_\_\_? [Teacher IDs what happened; coach provides data if teacher cannot]”
  - Use the observation evidence to explain what the teacher needs to improve.
- Share rubric data, where appropriate. Share your assessment of their rating, using the rubric language to deliver the feedback.





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## Direct Feedback: Plan and Practice

### Plan:

-  Continue focusing on the teacher that we observed.
-  Using what we revisited with *Share the Key Lever* (and our group discussion around an area of development), script what you would say to this teacher to begin delivering direct feedback.

### Practice:

-  When prompted by the facilitator, you will practice delivering the “Deliver Feedback” portion of your conversation with a partner. The person with shorter hair will go first.
-  After the first leader coaches, their “teacher” will provide feedback using the Feedback Cheat Sheet for *Share the Key Lever*.
-  After receiving the feedback, the original leader will update/revise their script, and re-practice, incorporating the feedback.
-  Once the original leader has re-practiced, switch roles and repeat.

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# Agenda

Opening

Digging In to the Rubric: Where Is STEM?

Practice Observation Using the Rubric

Feedback Planning and Practice

**Closing**



- With just one session in the math leadership series remaining, reflect on how you feel you can best use the observation tool in your work.
- Write one strength you want to keep building on with the rubric, one challenge you face, and one way you plan to address that challenge before our work together is complete.



# **Closing and Reflection**

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## Session Objectives

- Reflect on key concepts learned during the day and revise their visions to reflect that
- Articulate the next steps to take prior to the next session (including completing this session with teachers and observing for STEM integration throughout the day)
- Provide feedback on the day's session

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# Agenda

## Revisiting Your Vision

Looking Ahead to Our Next Session: Next Steps

Self-Assessment and Feedback Survey

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## Revisiting Your Vision

Today we dug deeply into what integrating math with science, engineering, and technology looks like in early childhood classrooms and centers.

Take out your vision from our last session together and look to see how/if problem solving and reasoning are present. Based on what we discussed and practiced today, revise your vision to reflect your deeper understanding and your learnings from today.

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# Agenda

Revisiting Your Vision

**Looking Ahead to Our Next Session: Next Steps**

Self-Assessment and Feedback Survey

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## Looking Ahead to Our Next Session

### **Teacher Content: Integrating Learning and Play**

We'll look at how play is an integral part of learning and what makes it effective and what teachers can do to ensure learning through play is purposeful.

### **Leadership Skills:**

Putting it all together—we'll have time to reflect on and put together all we've learned during our final session of the math series.

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## Next Steps

### Prior to our next Leadership Series training:

#### **Teacher Observations:**

- Conduct at least 3 teacher observations using the observation rubric (you should be rating on all competencies). Observe teachers during any time of the day to get an understanding of when/how math skills are being developed in their classroom.

#### **Integrating Math with Science, Technology, and Engineering:**

- Implement the teacher training content on problem-solving and reasoning with at least one small group of teachers (approximately 5 teachers)

**Play-based activity:** Come prepared with at least 1 play-based activity you see at your centers. We will have examples of activities you can use in the session but using something you are already seeing will be more relevant and useful!

### Ongoing:

#### **Teacher Observations:**

- Prioritize time in your schedule to conduct observations of teachers each week. Enter those teachers' ratings into the observation tracker.

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# Agenda

Revisiting Your Vision

Looking Ahead to Our Next Session: Next Steps

**Self-Assessment and Feedback Survey**



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## Providing Feedback

**Please take the next five minutes to complete the feedback survey for today's sessions.**