NEVADA ECE LEADERSHIP SERIES

Opening & Reflection

Nevada Early Childhood Leadership Series

Session 4

Session Objectives

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

- ICE BREAKER –

Share one of the best mistakes you've ever made. What was it?

What did you learn from it, and/or why do you consider it one of your best mistakes?

Reflection

Table Reflection and Discussion

- How did you have teachers dig into math talk and/or number sense? (What setting? What format? What activities or strategies did you use?)
- What went well? What evidence have you seen of the training on math talk and/or 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.

Do Now

Handouts, Page 1

Let's start with the why.

Generate a list of the benefits of teaching problem solving and reasoning as well as the challenges teachers may face in doing this effectively.

NEVADA ECE LEADERSHIP SERIES

Tracker System

Nevada Early Childhood Leadership Series

Session 4

Tracker Partner Work

Partners Reflect on Math Data

- Insert 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?

NEVADA ECE LEADERSHIP SERIES

Building Math Skills –Problem Solving and Reasoning

Nevada Early Childhood Leadership Series

Session 4

Objectives

- Explain why problem solving and reasoning is essential to young children's future math success
- Understand and describe key concepts for B-5 for geometry and measurement and how they promote problem solving and reasoning skills
- Plan for common opportunities to integrate problem solving and reasoning throughout the day
- Practice building problem solving and reasoning skills in geometry and measurement and building on learning from previous sessions

Agenda

Opening

Role Play

Excellence in Problem Solving and Reasoning

Connecting to Measurement and Geometry

Application: Plan and Practice

Closing

Let's dig in…

- With your partner, you will sit back to back.
- One partner will have a paper with several shapes on it, and the other will have a blank piece of paper and pen/pencil.
- **Your goal:** To get the person with the blank piece of paper to replicate the shape drawing as accurately as possible.
- **Rules:**
  You can't look at each other! You can use your voices only, ask questions, etc.

We will come back together and debrief this activity when we are done.

Returning to the Do Now

Let's revisit our role play and ice-breaker.

- How did it feel to engage in the role play? Did anything feel comfortable and/or exciting? Did anything feel nerve-wracking?
- What communication skills did you practice in the time you were working with your partner? How/where do you see them applying in real life?
- *Why do you think we might begin our session on problem solving and reasoning with embracing mistakes?*

Agenda

Opening

Role Play

Excellence in Problem Solving and Reasoning

Connecting to Measurement and Geometry

Application: Plan and Practice

Closing

Criteria of Strong Instruction that Involves Problem-Solving and Reasoning

Handouts, Page 2

- Rooted in **real-world problems and questions** through a **hands-on collaborative process** with teachers and peers
- Includes opportunities for students to **develop questioning, research and communication skills**
- Includes some kind of **guidance and structure** — not just a project or aimless play, but exploration and manipulation that has a purpose or a problem to solve
- Includes both **content and math practice standards**

Excellence in Action

Handouts, Page 3

In your handouts, gather evidence of the criteria of excellence:

- Rooted in **real-world problems and questions** through a **hands-on collaborative process** with teachers and peers
- Includes opportunities for students to **develop questioning, research and communication skills**
- Includes some kind of **guidance and structure** — not just a project or aimless play, but exploration and manipulation that has a purpose or a problem to solve
- Includes both **content and math practice standards**

Extend what you see: How could Anna's mother build questioning and communication skills here?

Agenda

Opening

Role Play

Excellence in Problem Solving and Reasoning

Connecting to Measurement and Geometry

Application: Plan and Practice

Closing

Handouts, Page 4

Key Ideas

- **Shape characteristics/attributes**: Noticing what makes each shape different, like knowing that a triangle has three points
- **Matching**: Recognizing common elements of shapes and matching pairs (circles, triangles, and squares)
- **Positioning shapes**: Understanding how shapes fit together and can be combined, like completing a puzzle

- *How can we apply the ideas of building problem solving/reasoning skills into geometry?*
- *What connections can you make to the math standards?*

Key Ideas

- **The size, length, height, and weight** of people or objects: Like when they describe a baby sibling as "short" and themselves as "tall"
- **The concept of capacity**: As they "fill" and "empty" a container with sand or water
- **The idea of distance**: Whether a favorite toy is "far away" or "close by"
- **The idea of time**: Concepts like before, after, later, soon and "in a minute."

Fill out the developmental progression chart as you watch.

- *How can we apply the ideas of building problem solving/reasoning skills to measurement?*
- *What connections can you make to the math standards?*

How?

On your table's chart paper, take the next 2 minutes to generate as many ideas of how you can practice problem solving and reasoning—each table will then have a minute to share out their ideas:

- Table 1: How can you practice problem solving and reasoning through GEOMETRY with INFANTS/TODDLERS?
- Table 2: How can you practice problem solving and reasoning through GEOMETRY with PRE-K STUDENTS?
- Table 3: How can you practice problem solving and reasoning through MEASUREMENT with INFANTS/TODDLERS?
- Table 4: How can you practice problem solving and reasoning through MEASUREMENT with PRE-K STUDENTS?

Agenda

Opening

Role Play

Excellence in Problem Solving and Reasoning

Connecting to Measurement and Geometry

Application: Plan and Practice

Closing

It's time to **PRACTICE!**

Handouts, Pages 6-7

Plan

- **Imagine** you are modeling a short activity focused on building problem-solving and reasoning skills through measurement or geometry (your choice of what key idea to explore!) for a teacher.
- Use the guided process in your note-catcher to **write one activity and at least three related question you could ask of students to build problem-solving and reasoning.**
- Use the 4 criteria to ensure your activity is high-quality and that the teacher is able to see clear evidence of each.
- Use the standards as needed to support your planning.

Feedback

- Swap your paper with the person sitting next to you.
- Read through the planned activity.
- Using the feedback catcher, note strengths in line with the four criteria 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 the 4 criteria.

Reflecting on Practice

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

- How could this quick practice activity support your teachers in gaining comfort and confidence planning for a problem-solving and reasoning activity?
- How will it support teachers' understanding of what is developmentally appropriate? Why is this important?

Agenda

Opening

Role Play

Excellence in Problem Solving and Reasoning

Connecting to Measurement and Geometry

Application: Plan and Practice

Closing

Leader Planning Time

Handouts, Page 8

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? (**Remember:** we expect you to share this content by the next Leadership Series training.)
- How will you deliver content to your staff? (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' problem-solving and reasoning skills? What tools will you create and provide them with?
- What challenges do you anticipate your staff may have with this content?

Exit Ticket

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 problem-solving and reasoning with students?

When and where will you prioritize focusing on problem-solving and reasoning? How will you hold yourself accountable for using these strategies?

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

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

Next Steps for Teachers

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

Break ☺

NEVADA ECE LEADERSHIP SERIES

Practice: Observation and Feedback Practice

Nevada Early Childhood Leadership Series

Session 4

Objectives

- Develop a deeper understanding of the math observation rubric in line with problem solving and reasoning
- Observe an ECE math lesson and take low-inference notes on evidence of problem solving and reasoning skills
- Prepare for delivery of feedback to a teacher
- Practice feedback delivery

Agenda

Opening

Digging Into the Rubric: Where Is Problem Solving and Reasoning?

Practice Observation Using the Rubric

Feedback Planning and Practice

Closing

Digging into the Rubric: Where is Problem Solving and Reasoning?

Take **5 minutes** to:

- Highlight and annotate Owning the Learning for connections to problem solving and reasoning.
  - Also look at indicators 1b and 2c.

- What evidence do you need to gather to effectively rate on those indicators and this competency?
- What questions do you have?

Agenda

Opening

Digging In to the Rubric: Where Is Problem Solving and Reasoning?

Practice Observation Using the Rubric

Feedback Planning and Practice

Closing

Practice Observation Using the Rubric

Handouts, Page 9

The purpose of this practice for you to have an opportunity to practice observing for problem solving and reasoning so that you can more nimbly do so in your own center/school.

Practice Steps:

- Watch the video clip and collect data in line with **Owning the Learning and indicators 1b and 2c** for teacher and student actions.
- You'll reflect and respond in three ways – first independently, then in pairs, and lastly summarizing our analysis whole group.

Observation Reflection

Handouts, Page 10

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 problem solving and reasoning?

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 looks 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.

Agenda

Opening

Digging Into the Rubric: Where Is Problem Solving and Reasoning?

Practice Observation Using the Rubric

Feedback Planning and Practice

Closing

Direct Feedback: *Share the Key Lever*

Handouts, Page 11

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.

Direct Feedback: Plan and Practice

Handouts, Pages 11-12

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.

Agenda

Opening

Digging In to the Rubric: Where Is Problem Solving and Reasoning?

Practice Observation Using the Rubric

Feedback Planning and Practice

Closing

Exit Ticket

Handouts, Page 13

- How confident do you currently feel in determining and sharing a key lever with your teachers for math? What is coming naturally? What will you need to continue to develop?
- How will you ensure you further your understanding of the math observation rubric before our next session?

NEVADA ECE LEADERSHIP SERIES

Closing and Reflection

Nevada Early Childhood Leadership Series

Session 4

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 problem solving and reasoning throughout the day)
- Provide feedback on the day's session

Agenda

Revisiting Your Vision

Looking Ahead to Our Next Session: Next Steps

Feedback Survey

Revisiting Your Vision

Today we dug deeply into what problem solving and reasoning 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.

Agenda

Revisiting Your Vision

Looking Ahead to Our Next Session: Next Steps

Feedback Survey

Looking Ahead to Our Next Session

Teacher Content: Cross-Cutting Concepts and STEM

We'll look at how our youngest learners connect math with other concepts, particularly science and what teachers can do to support this.

Leadership Skills:

Observing a classroom for evidence of cross-cutting concepts and STEM using key look fors in line with our vision.

Next Steps

Handouts, Page 14

Prior to our next Leadership Series training:

Teacher Observations:

- Conduct at least 3 teacher observations using the observation rubric (you should be rating on competencies 1, 2 and 3). Observe teachers during any time of the day to get an understanding of when/how math skills are being developed in their classroom.

Building Problem Solving and Reasoning Skills:

- Implement the teacher training content on Problem Solving and Reasoning with at least one small group of teachers (approximately 5 teachers) prior to the next training.
- Collect exit tickets at the end of the Problem Solving and Reasoning training session and bring those with you to the next training.
- Before and after the training: Observe a small group of teachers who will participate in the training (3-5) to assess if and how problem solving and reasoning development is being implemented in their classrooms before and after the training you provide. Complete the graphic organizer and bring it to the next training.

Reminder: Complete training for Number Sense and collect exit tickets and before/after observation data as well!

Ongoing:

Teacher Observations:

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

Agenda

Revisiting Your Vision

Looking Ahead to Our Next Session: Next Steps

Feedback Survey

Providing Feedback

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