



... 15-Minute ...
In-Service Suites

COACHING TO SUPPORT EARLY MATH INSTRUCTION



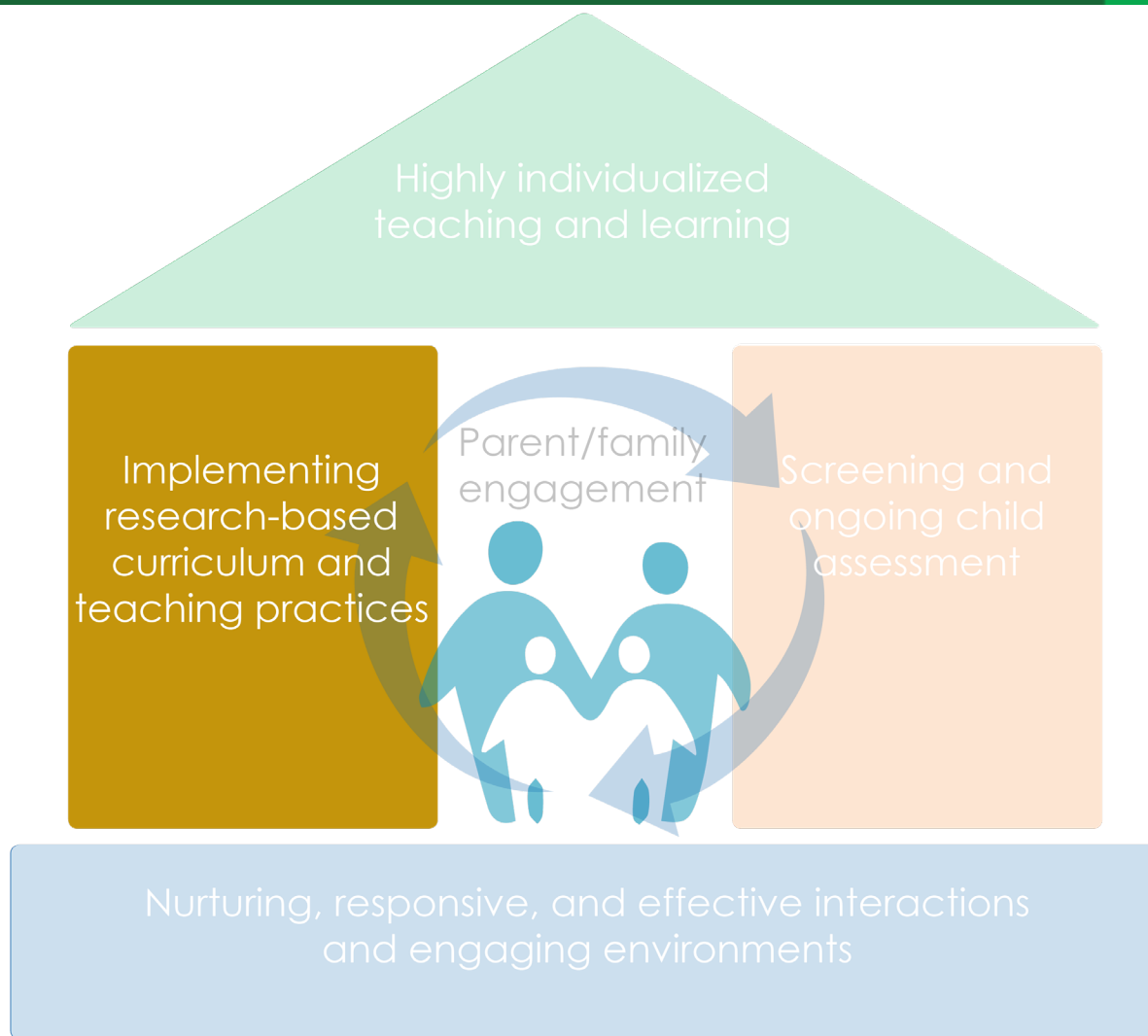
NATIONAL CENTER ON

Early Childhood Development, Teaching and Learning





Framework for Effective Practice





Objectives

- Understand why Practice-Based Coaching (PBC) is a powerful approach to professional development
- Understand how PBC components can be used to coach education staff on early math teaching practices
- Understand and practice methods for engaging in effective PBC cycles around early math teaching practices



Why Use Coaching?

- Coaching is an evidence-based professional development strategy that has been shown to:
 - Effectively support education staff in improving their practices
 - Result in increased learning in young children



What is Practice-Based Coaching?

An approach that uses a cyclical process to support effective teaching practices that lead to positive outcomes for children





Practice-Based Coaching Components

- Collaborative coaching partnership
- Shared goals and action planning
- Focused observation
- Reflection and feedback





Collaborative Coaching Partnerships





Establishing a Collaborative Partnership

- A collaborative partnership involves a teacher, family child care provider or home visitor (a coachee) and a coach planning and working together.
- It is developed over time by developing reciprocal and respectful relationships, shared vision, and trust.
- Establishing a collaborative partnership includes:
 - sharing professional experiences and backgrounds,
 - developing shared expectations, and
 - reaching a mutual understanding of the coaching process and purpose.



Sharing Math Experiences



As a coach, how would you use this activity with coachees?

- What is the earliest math experience that you can remember?
 - What did you feel during this experience?
- How has that influenced how you feel about math now?
- How do you think your feelings and previous experiences might be expressed in the classroom?



Shared Goals and Action Planning





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Shared Goals and Action Planning

1

Specify a teaching practice or a set of teaching practices.

2

Gather information about implementation of teaching practices through a needs assessment.

3

Use the information gathered about implementation, and identify priorities for coaching.

4

Set specific, observable, achievable goals based on priorities.

5

Develop an action plan for use as the coaching roadmap.





Teaching Practices

1

Specify a teaching practice or a set of teaching practices.

- I understand how children's counting and cardinality skills progress.
- I include materials in every learning center that encourage children to count and write numbers.
- I offer a wide range of materials that children can use to compare quantities.
- I use teachable moments as opportunities to build counting skills and understanding of cardinality.
- I lead small group activities and discussions focused on counting and cardinality.
- I ask questions that invite children to make predictions.



Needs Assessment

2

Gather information about implementation of teaching practices through a needs assessment.

TIPS FOR EDUCATION STAFF
MATH COACHING

NEEDS ASSESSMENT FORMATS

Needs assessments can be formatted in different ways to gather different information from coachees. We can gather information about:

- How often a coachee is using a practice
- How important he or she thinks the practice is
- What a coachee believes about the practice
- How comfortable he or she is in using that practice
- Whether or not the coachee would like to focus on this practice in coaching

Choose a needs assessment format based on the information you would like to gather. Following are five examples of different ways needs assessments can be formatted.

Practice	I am doing this...					I want to do this...					Difference between current use and desired use
	Not at all	All the time			Not at all	All the time					
	1	2	3	4	5	1	2	3	4	5	
I clearly teach, explain, and review the classroom rules and behavior expectations with children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Practice	How often?					Change needed?		Priority rank	Notes
	Never	Seldom	Sometimes	Usually	Always	Yes	No		
	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>		
Do you clearly teach, explain, and review the classroom rules and behavior expectations with children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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Practice	How well/how often					Change needed?		Priority rank	Notes
	Not at all	Slightly	Moderately	Very	Extremely	Yes	No		
1. I understand how children's counting and cardinality skills progress.	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input type="checkbox"/>	Very <input type="checkbox"/>	Extremely <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
2. I include materials in every learning center that encourage children to count and to write numbers.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
3. I offer a wide range of materials that children can use to compare quantities.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
4. I use teachable moments as opportunities to build counting skills and understanding of cardinality.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
5. I lead small group activities and discussions focused on counting and cardinality.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
6. I ask questions that invite children to make predictions.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
7. I ask open-ended questions to better understand a child's mathematical thinking.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
8. I collect data on children's demonstrations of math knowledge in the context of the math activities and discussions I provide.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
9. I provide instruction and feedback to children based on their individual needs.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>		

SAMPLE NORTHLAKE HEAD START TEACHER

Practice	How well/how often					Change needed?		Priority rank	Notes
	Not at all	Slightly	Moderately	Very	Extremely	Yes	No		
1. I understand how children's counting and cardinality skills progress.	Not at all <input type="checkbox"/>	Slightly <input type="checkbox"/>	Moderately <input checked="" type="checkbox"/>	Very <input type="checkbox"/>	Extremely <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1	
2. I include materials in every learning center that encourage children to count and to write numbers.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
3. I offer a wide range of materials that children can use to compare quantities.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
4. I use teachable moments as opportunities to build counting skills and understanding of cardinality.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input checked="" type="checkbox"/>	Always <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
5. I lead small group activities and discussions focused on counting and cardinality.	Never <input type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input checked="" type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	3	
6. I ask questions that invite children to make predictions.	Never <input type="checkbox"/>	Seldom <input checked="" type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	4	
7. I ask open-ended questions to better understand a child's mathematical thinking.	Never <input type="checkbox"/>	Seldom <input checked="" type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	5	
8. I collect data on children's demonstrations of math knowledge in the context of the math activities and discussions I provide.	Never <input checked="" type="checkbox"/>	Seldom <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	2	
9. I provide instruction and feedback to children based on their individual needs.	Never <input type="checkbox"/>	Seldom <input checked="" type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	6	



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Identify Priorities and Set Goals

3

Use the information gathered about implementation, and identify priorities for coaching.

4

Set specific, observable, achievable goals based on priorities.



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Develop Action Plan

5

Develop an action plan for use as the coaching roadmap.





Action Plan

15-Minute In-Service Suites **TIPS FOR EDUCATION STAFF**
MATH COACHING

SAMPLE ACTION PLAN FORM

Coach: Miranda
Coachee(s): Stephen
Date: Oct. 1

ACTION PLAN GOAL:
I will provide small group instruction to children to support their learning of counting, cardinality, and quantity comparison. I will collect data during these activities.

Steps to achieve this goal:	Resources needed:	By when:	Completed:
1. I will review the learning trajectories related to counting, cardinality, and quantity comparison.	learningtrajectories.org	Oct. 4	<input type="checkbox"/>
2. I will plan one week of small group activities to teach counting, cardinality, and quantity comparison (one activity per day).	learningtrajectories.org Weekly schedule	Oct. 7	<input type="checkbox"/>
3. I will implement small group activities during centers time, pulling small groups of children together for 5-10 minutes.		Oct 7-11	<input type="checkbox"/>
4. I will collect data during small group activities on children's math learning.	Data collection sheets	Oct. 7-11	<input type="checkbox"/>
5. I will review data and plan another week of small group activities to teach counting, cardinality, and quantity comparison.	learningtrajectories.org Weekly schedule	Oct. 14	<input type="checkbox"/>
6. I will brainstorm 3-5 questions to encourage predictions and elicit children's thinking.		Oct. 14	<input type="checkbox"/>

REVIEW	Date:	Date:	Date:
<input type="checkbox"/> Goal is achieved. <input type="checkbox"/> Goal is in progress. <input type="checkbox"/> Changes are needed.	Date: <input type="checkbox"/> Goal is achieved. <input type="checkbox"/> Goal is in progress. <input type="checkbox"/> Changes are needed.	Date: <input type="checkbox"/> Goal is achieved. <input type="checkbox"/> Goal is in progress. <input type="checkbox"/> Changes are needed.	Date: <input type="checkbox"/> Goal is achieved. <input type="checkbox"/> Goal is in progress. <input type="checkbox"/> Changes are needed.

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Focused Observation





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Focused Observation



- Observations centered on action plan
- Coach collects notes/data
- Coach uses other coaching strategies as needed (and agreed to by coachee)





Focused Observation

- Make a plan!
- Collect data
 - Notes
 - Checklists
 - Behavior counts

15-Minute In-Service Suites TOOLS FOR CENTER-BASED SUPERVISORS AND COACHES
MATH COACHING

FOCUSED OBSERVATION OF EARLY MATH

Teacher: _____ Coach: _____
Date: _____ Time spent in observation: _____ Time spent in meeting: _____
Observation focus: _____

Tally number of children teacher did/did not take notes on: _____ X
✓

Tally number of children given/not opportunity to respond individually: _____ X
✓

Children's ELOF goal: _____

Children's performance:						
Child	Skill	Independent	With Scaffolding	With Heavy Scaffolding	LT-Level	ELOF Progression
1.						
2.						
3.						
4.						

Additional notes: _____
Follow-up needed: _____

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Reflection and Feedback





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Reflection and Feedback

- Reflection
- Supportive feedback
- Constructive feedback





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Reflection and Feedback

- Reflection questions:
 - “How did math small groups go today?”
 - “What happened when Birdie made an error when counting?”
 - “What could you share with her mom to help’s Birdie count with greater accuracy?”
 - “What do you think you could do to support Tyrone in learning from his peers?”





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Reflection and Feedback

- Supportive feedback should be:
 - Related to the action plan
 - Specific
 - Data-based
 - Non-attributive
- Examples:
 - “I noticed that when Robbie counted incorrectly, you reminded him to touch each object only one time as he counted. You suggested he move the objects so he could keep track of the ones he already touched. After you gave him that suggestion, he was able to count correctly without help! When you gave him a high five, he had a big smile on his face!”
 - “Wow—you did a really nice job collecting data on each child’s counting skills during small groups today. That will really help you plan your next small group activity and the type of instruction you will provide!”



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Reflection and Feedback

- Constructive feedback should be:
 - Related to action plan
 - Specific
 - Data-based
 - Non-attributive
- Examples:
 - “I observed you giving at least three opportunities to respond to almost every child in your small groups today. Tabitha and William both engaged in some disruptive behavior during the small groups, and I noticed that they each got only one opportunity to respond. Next time, make sure all children get several opportunities to respond. That can help keep them more engaged and prevent challenging behavior.”
 - “I noticed that when you played the counting game in one of your small groups, Arnie counted eight objects correctly. However, when you then asked him how many buttons there were (to assess his cardinality understanding), he said, “Five,” and you didn’t respond. It would be helpful to provide Arnie with specific feedback when he makes a mistake. You could say, “The last number you said was ‘eight’. That means there are eight buttons.”).



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Reflection and Feedback Practice Scenario

- Consider this scenario:
 - Mary, a toddler classroom teacher, has an action plan related to providing more teaching related to one-to-one correspondence. During snack time in this classroom, the teachers work to set the table—giving each child one bowl, one spoon, one cup, and one napkin. Tyson notices that there aren't enough spoons for every child and says, "More spoons!" The teacher smiles and says, "Yes, we need more spoons."
- What questions could you ask Mary to promote reflection?
- What supportive feedback could you give Mary?
- What constructive feedback could you give Mary?



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The Cycle Continues!





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Review



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