

Appendix B: Primary Data-Collection Instruments

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Appendix B1 – Teacher Surveys

Teacher Pre-Survey (All Teachers)

Dear [Teacher name],

Thank you for your participation in the **REL Appalachia Early Math Toolkit** research project. As part of your participation in the study, we are asking you to complete a survey that has two sections. The first will ask about your background and the second will ask about your experiences teaching math.

You will receive a \$25 gift card to thank you for your time spent completing this survey.

If you have any questions please contact Sarah Gerard, project coordinator, at sarah.gerard@sri.com or 703-847-8545.

Part A: Demographics and Experiences

1. How many years have you been a lead teacher for the following ages/grade levels? Exclude student teaching or assistant teaching positions.

	Number of years
Early childhood (birth to age 5) *excluding kindergarten	[text]
Kindergarten	[text]
1st grade – 5th grade	[text]
6th grade – 8th grade	[text]
9th grade – 12th grade	[text]

2. Including this year, how many years have you worked in your current teaching placement?
3. What type of Virginia license do you currently hold?
 - a. Provisional
 - b. Collegiate Professional
 - c. Postgraduate Professional
 - d. Other
 - i. (If other) Please name the type of license you hold.
4. Which endorsement(s) are included on your license?
 - a. Early/primary education PreK-3
 - b. Elementary education PreK-6
 - c. Other
 - i. (if other) Please name the additional endorsement you hold.

5. What is the highest degree you have earned?
 - a. Associate's
 - b. Bachelor's
 - c. Master's
 - d. Education Specialist
 - e. Doctorate
 - f. Other degree
 - a. None

Part B: Preschool Math Teaching (Attitudes, Beliefs, and Confidence Survey)

This set of questions will ask about your attitudes, beliefs, and confidence in teaching math. Please select the option which best describes your agreement or disagreement with each the following statements.

[Programming note: Respondents indicate their agreement with the statements on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). *These items are reverse coded]

1. I am skilled at evaluating my students' math learning.
2. I can easily use math assessment results to guide my lesson planning.
3. Setting appropriate math learning goals for my students is easy for me.
4. I am good at anticipating when my students might be confused with a certain math concept.
5. Engaging students in math thinking is easy for me.
6. I am good at encouraging students to represent math in a variety of ways (such as drawings, manipulatives, symbols, and language).
7. I am skilled at connecting math learning to other curricular areas.
8. It is easy for me to help students explain their thinking about math.
9. Preparing engaging math experiences for my students is one thing I am good at doing.
10. I am skilled at furthering my students' math knowledge when they make math comments or discoveries.
11. Using assessment results to set math goals for some students does not come easy to me. *
12. It is not easy for me to engage some students in math learning. *
13. I struggle to help some students communicate their thinking about math. *
14. I find it difficult to help students see connections between their play and underlying math concepts. *
15. Some math concepts are difficult for me to teach. *
16. I find it challenging to adapt math activities for students who are more or less advanced than their peers. *
17. I am not a "math person." *
18. I have a hard time quickly calculating arithmetic facts in my head. *
19. I can easily convert fractions into percentages or decimal numbers.
20. I'm good at looking at numeric data and finding patterns.
21. Math was one of my best subjects in school.
22. I am not good at math puzzles. *
23. Just the word "math" can make me feel nervous. *
24. I can easily figure out how something would look from another angle.
25. I'm good at estimating the height of objects.
26. Estimating the distance between two locations is easy for me.

Thank you for completing your teacher survey! Please click "submit" to record your response.

Teacher Post-Survey (All Teachers)

Dear [Teacher name],

Thank you for your participation in the **REL Appalachia Early Math Toolkit** research project. As part of your participation in the study, we are asking you to complete a survey that has [three/four] components. The first will ask about your classroom experiences in the past school year, the second will ask about your professional learning experiences in the past school year, and the third will ask about your experiences teaching math.

Intervention only: The first will ask about your classroom experiences in the past school year, the second will ask about your professional learning experiences in the past school year, the third will ask about your experiences teaching math, and the fourth will ask about your satisfaction with the early math toolkit.

You will receive a \$25 gift card to thank you for your time spent completing this survey.

If you have any questions please contact Sarah Gerard, project coordinator, at sarah.gerard@sri.com or 703-847-8545.

Part A: Classroom Experiences

1. Which curriculum do you use in your classroom?
 - a. Ascend Curriculum
 - b. Big Day for PreK
 - c. Blueprint
 - d. Brain Based Learning by Blue Ribbon Results
 - e. Callahan Education
 - f. Childtime Empowered Child
 - g. Connect4Learning
 - h. Core Knowledge Preschool Sequence
 - i. Creative Curriculum
 - j. Curiosity Corner, 2nd Edition
 - k. Early Learning Matters
 - l. Exceed Preschool Curriculum
 - m. Experience Early Learning / Mother Goose Time
 - n. Fairfax County Public Schools Pre-K Curriculum *[delete unless in Fairfax County]*
 - o. Frog Street
 - p. Funnydaffer
 - q. Funshine Express
 - r. Get Set For School (Learning Without Tears)
 - s. HighReach Learning
 - t. HighScope
 - u. Kiddie Academy Life Essentials
 - v. Kindercare
 - w. LaPetite Academy Early Innovators
 - x. Learn As We Grow

- y. Learn Every Day
 - z. Learning Experience Academic Program (L.E.A.P.)
 - aa. Montessori Birth Through Five Curriculum: Virginia Montessori Association
 - bb. Opening the World of Learning (OWL)
 - cc. PLAYWORKS
 - dd. PreK On My Way
 - ee. Seedlings
 - ff. STREAMin3
 - gg. Three Cheers for Pre-K
 - hh. Tools of the Mind
 - ii. Virginia Beach Pre-K Curriculum
 - jj. World of Wonders
 - kk. Other (please list): _____
2. Do you speak a language other than English in your classroom or with your students' families?
- a. Yes (1)
 - b. No (0)
3. Which languages other than English do you use with your students or families? Select all that apply.
- a. Amharic
 - b. Arabic
 - c. Burmese
 - d. Chinese
 - e. Farsi
 - f. Kurdish
 - g. Nepali
 - h. Somali
 - i. Spanish
 - j. Swahili
 - k. Vietnamese
 - l. Other
 - i. Please list the other language(s) spoken.
4. [if an item is selected for 3] Please describe how the language(s) other than English is used in your classroom (e.g., 'I speak Spanish with students' families who prefer that language'; 'I can speak Arabic but always answer students in English if possible.').

Part B: Professional Learning Experiences and Support

This first set of questions will ask about different professional learning experiences you have had **over the past year** related to supporting students' math learning.

5. [control] Did you receive any professional development during this school year to support your math teaching? Select all that apply.
- Workshops or other training events
 - Materials or resources
 - Professional Learning Community (PLC)
 - Coaching
 - Faculty meetings
 - Other (Please describe: _____)

[intervention] Other than the early math toolkit, did you receive any professional development during this school year to support your math teaching? Select all that apply.

- Workshops or other training events
 - Materials or resources
 - Professional Learning Community (PLC)
 - Coaching
 - Faculty meetings
 - Other (Please describe: _____)
6. Approximately how much training did you receive for *[insert name of each selection in Q5]*?
- Less than 1 hour
 - 1 hour
 - 2 hours
 - 3-4 hours (half day)
 - 5-8 hours (full day)
 - 2 days
 - 3 days or more

Part C: Preschool Math Teaching (Attitudes, Beliefs, and Confidence Survey)

This set of questions will ask about your attitudes, beliefs, and confidence in teaching math. Please select the option which best describes your agreement or disagreement with each the following statements.

[Programming note: Respondents indicate their agreement with the statements on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). *These items are reverse coded]

1. I am skilled at evaluating my students' math learning.
2. I can easily use math assessment results to guide my lesson planning.
3. Setting appropriate math learning goals for my students is easy for me.
4. I am good at anticipating when my students might be confused with a certain math concept.
5. Engaging students in math thinking is easy for me.
6. I am good at encouraging students to represent math in a variety of ways (such as drawings, manipulatives, symbols, and language).
7. I am skilled at connecting math learning to other curricular areas.
8. It is easy for me to help students explain their thinking about math.
9. Preparing engaging math experiences for my students is one thing I am good at doing.
10. I am skilled at furthering my students' math knowledge when they make math comments or discoveries.
11. Using assessment results to set math goals for some students does not come easy to me. *
12. It is not easy for me to engage some students in math learning. *
13. I struggle to help some students communicate their thinking about math. *
14. I find it difficult to help students see connections between their play and underlying math concepts. *
15. Some math concepts are difficult for me to teach. *
16. I find it challenging to adapt math activities for students who are more or less advanced than their peers. *
17. I am not a "math person." *
18. I have a hard time quickly calculating arithmetic facts in my head. *
19. I can easily convert fractions into percentages or decimal numbers.
20. I'm good at looking at numeric data and finding patterns.
21. Math was one of my best subjects in school.
22. I am not good at math puzzles. *
23. Just the word "math" can make me feel nervous. *
24. I can easily figure out how something would look from another angle.
25. I'm good at estimating the height of objects.
26. Estimating the distance between two locations is easy for me.

27. This set of questions is about your perceptions of the **support you receive at your school**. Please select the option which best describes the extent to which you agree or disagree with each the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
My supervisor supports my actions and ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My supervisor allows me to provide input into decisions that affect me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My supervisor provides helpful feedback about my teaching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This school has a positive learning environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teachers in this school support one another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The morale of the school staff is low.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: Items in this table are from the Early Childhood Teacher Experiences Scale (ECTES). Fantuzzo, J., Perlman, S., Sproul, F., Minney, A., Perry, M. A., & Li, F. (2012). Making visible teacher reports of their teaching experiences: The early childhood teacher experiences scale. *Psychology in the Schools, 49*(2), 194-205.

Part D: Toolkit Satisfaction (Intervention Teachers only at the end of post-survey)

1. Please describe the most recent Early Math Toolkit professional learning training that you received: _____
2. How useful have the following toolkit resources been in supporting your understanding of this module’s math concepts and key instructional practices?

	Not useful	Somewhat useful	Useful	Very useful
Videos introducing math content and instructional practices	q	q	q	q
Videos demonstrating the instructional practices and activities with children	q	q	q	q
Teacher Learning Journal	q	q	q	q
Printable developmental progression	q	q	q	q
Progress Monitoring Logbook	q	q	q	q
Math stories	q	q	q	q
Math in Place	q	q	q	q

3. Did you participate in any “check ins with colleagues” as part of the toolkit professional learning?
 - Yes
 - How many “check ins” did you participate in?
 - Were the check-in protocols helpful? Why or why not? _____
 - No
 - What additional supports would have helpful for you to have? _____
4. Did you have adequate support and resources from your school for participating in the toolkit?
 - Yes
 - Somewhat
 - No
 - [If “somewhat” or “no”] What additional support or resources would have been helpful? _____
5. What barriers did you face in implementing toolkit activities? Please select all that apply.
 - Lack of support from school leadership
 - Accessing toolkit content online
 - More support needed to understand toolkit key instructional practices
 - Struggle to fit with existing curriculum
 - Other instructional priorities
 - Competing assessment priorities
 - Not enough time to have “check ins with colleagues”
 - Not enough time to complete the professional learning modules
 - Not enough time to plan for classroom use of the toolkit activities
 - Classroom behavioral disruptions

Other (please describe): _____

6. In what ways could the professional learning further support your **understanding** of key instructional practices (i.e., progress monitoring, dedicating math instructional time throughout the day, and supporting children in viewing and describing their world mathematically)?

7. In what ways could the professional learning further support your **use** of key instructional practices (i.e., progress monitoring, dedicating math instructional time throughout the day, and supporting children in viewing and describing their world mathematically) in your classroom?

8. How satisfied are you with the toolkit professional learning activities overall?

Very dissatisfied

Dissatisfied

Satisfied

Very satisfied

- [if “dissatisfied” or “very dissatisfied”] how could the module be improved?

9. How helpful was completing the Self-Assessment of Math Instruction (SAMI)?

Not at all helpful

Not helpful

Helpful

Very helpful

- [if “not helpful” or “not at all helpful”] how could it be improved?

10. Did you enjoy using the toolkit classroom activities?

Not at all

Somewhat

Very much (5 point scale with 3 anchors)

11. How likely are you to use the toolkit classroom activities in the future?

Very unlikely

Unlikely

Not sure

Likely

Very likely

12. What additional support from your school or division leaders would have been helpful?

Thank you so much for your time! Please click “Submit” to finish.

Appendix B2 - Teacher Instructional Log

Instrument background for reviewers: All teachers participating in the Early Math Toolkit efficacy study during the 2024-25 school year will complete an instructional log to document time spent on math-focused activities as well as information about the learning goals and format of activities. The REL AP study team plans to use a snapshot approach to gather information about a week at pre-intervention (beginning of the year), mid-intervention (middle of the year), and post-intervention (end of the year). These forms are estimated to take about 5 minutes daily to complete using Qualtrics online survey platform. During each of the three data collection weeks, the team will remind all participating teachers daily to complete the log via an email and/or a text at noon, depending on teacher preference. Given the Toolkit's supports for teachers to integrate math into classroom routines and transitions, the study team wants to ensure these routines are counted. The instructional log below is for one day; the same log will be completed each day for one week. Teachers will have space to add as many math activities as they want to report.

Instructions to teachers for completing the log: We would like to learn about the different ways children engage in math learning in your classroom.

Please share any activity that included math activities or lessons you think could support students' math learning, including things you did or math-related opportunities that children have as a whole class or in smaller groups. This can include:

- planned math instructional activities and
- opportunities for students to informally engage with math, like playing with blocks or shapes, using measuring tools, counting letters during literacy, or comparing quantities of food at lunch.

If you're not sure whether to include an activity, please list it and describe as best you can.

Please complete the math activity log at the end of each instructional day this week. You can save your progress to complete throughout the day if that is easier. It should take about 5 minutes per day. We will email or text you daily to remind you.

Preschool Math Instructional Log

Date: Monday, _____ [day of the week will pre-populate]

Did you have any math activities in your classroom today? We are interested in all informal and planned activities that could support student math learning. (yes/no)

(if no) Thank you! Please click Save below and complete the log tomorrow.

Math activity #1

Describe what you did: _____

Was this a planned lesson or an informal experience?

- Planned lesson
- Informal activity

What was the learning objective? _____

Number of minutes: ____

Format/setting (select all that apply):

- Whole group (ex: morning meeting, circle time)
- Small group (teacher-led)
 - o How many children participated?
- Center time / free play
 - o How many children participated?
- Mealtime
- Transition
- Outdoors
- Other: _____

Topic of math (select all that apply):

- Numbers & Operations
 - o Drop-down: subitizing (enumerating small sets without counting), counting, comparing sets, labeling quantities, basic problem-solving, symbols, numeral recognition, numeral recognition, showing numbers on fingers, labeling sets
- Measurement
- Shapes and spatial sense
- Data analysis (ex: graphing)
- Patterns
- Other: _____

Did you do more math activities today? We are interested in all informal and planned activities that could support student math learning. (yes/no; if yes, next math activity box appears)

Math activity #2

Describe what you did: _____

Was this a planned lesson or an informal experience?

- Planned lesson
- Informal activity

What was the learning objective? _____

Number of minutes: ____

Format/setting (select all that apply):

- Whole group (ex: morning meeting, circle time)
- Small group (teacher-led)
 - o How many children participated?
- Center time / free play
 - o How many children participated?
- Mealtime
- Transition
- Outdoors
- Other: _____

Topic of math (select all that apply):

- Numbers & Operations
 - o Drop-down: subitizing (enumerating small sets without counting), counting, comparing sets, labeling quantities, basic problem-solving, symbols, numeral recognition, numeral recognition, showing numbers on fingers, labeling sets
- Measurement
- Shapes and spatial sense
- Data analysis (ex: graphing)
- Patterns
- Other: _____

Did you do more math activities today? We are interested in all informal and planned activities that could support student math learning. (yes/no; if yes, next math activity box appears)

Thank you! Please click Save below and complete the log tomorrow.

Appendix B3 – Toolkit Implementation Checklist

Thank you for participating in the Teaching Math to Young Children Toolkit activities for this module. Your feedback is important to us to improve the toolkit’s activities and resources. The toolkit implementation checklist asks questions related to your use of toolkit activities in module X [Qualtrics will prefill]. Please take 5–10 minutes to complete the checklist for the current module.

Module [X – Qualtrics prefill]

- How many of the following professional learning activities did you complete for this module?

	None	Some	All	Estimated hours
Launch and watch videos	q	q	q	.
Teacher Learning Journal	q	q	q	.
Planning form to prepare for classroom use of toolkit activities	q	q	q	.
Self-Assessment of Mathematics Instruction (SAMI)	q	q	q	.

- How much of the following toolkit learning activities did you implement? (Check all that apply).

	None (0)	Some (1)	All (2)
Large-group activity			
Small-group activity			
Math routine			
Math stories			
Math in Place			
Math game			
Progress monitoring and data recording in the Progress Monitoring Logbook			

- Were you able to complete all the toolkit professional learning and classroom activities scheduled for this module?

- Yes
 No

- [If “no”] Why were you unable to complete the activities? (Check all that apply.)
 - Other instructional priorities
 - Classroom behavioral disruptions
 - Assessment administration
 - School closing (e.g., inclement weather)
 - Shortened week due to holiday, teacher in-service, assembly, or other school event
 - Other: _____
4. How much time on average did you spend implementing the toolkit classroom activities (e.g., large- and small-group activities, math routines, math games, math stories, Math in Place) with children each week?
- ____hours ____minutes
5. Did you (or a member of your teaching team) record at least one observation in the Progress Monitoring Logbook per student each week during weeks 2 to 4? (Check one.)
- Yes, I recorded at least one observation per student during weeks 2 to 4.
 - Yes, I recorded at least one observation for most students during weeks 2 to 4.
 - Yes, I recorded at least one observation for some students during weeks 2 to 4.
 - [If “yes”] Were you able to tailor your math instruction based on the observations?
 - Yes
 - No
 - No, I was unable to record at least one observation in the Progress Monitoring Logbook for some or most students during weeks 2 to 4.
 - [If “no”] Why were you unable to record observations for students?

6. Were any aspects of the toolkit professional learning activities unclear or confusing for this module?
- Yes
 - [If “yes”] What was unclear or confusing? _____
 - No
7. Did you have “check in with colleagues” during this module?
- Yes
 - [If “yes”] Did you use the “check in with colleagues” protocols?
 - Yes
 - No
 - No. There were no scheduled “check ins with colleagues” for this module.
 - No. There was a scheduled “check in with colleagues” during this module, but I was unable to attend.

8. Reflecting on this module, how has using the key instructional practices in your classroom been for you?

- Very easy
- Easy
- Difficult
- Very difficult

- [If “difficult” or “very difficult”] Please explain. _____

9. How useful have the following toolkit resources been in supporting your understanding of this module’s math concepts and key instructional practices?

	Not useful	Somewhat useful	Useful	Very useful
Videos introducing math content and instructional practices	q	q	q	q
Videos demonstrating the instructional practices and activities with children	q	q	q	q
Teacher Learning Journal	q	q	q	q
Printable developmental progression	q	q	q	q
Progress Monitoring Logbook	q	q	q	q
Math stories	q	q	q	q
Math in Place	q	q	q	q

10. Have the module’s classroom activities been appropriate (e.g., culturally and developmentally) for your students?

- Yes
- Somewhat
- No

- [If “somewhat” or “no”] Please share any modifications you made to improve the cultural or developmental appropriateness of the classroom activities: _____

11. Did an instructional leader observe your math instruction using the Early Mathematics Teaching Observation Tool (EMTOT) during this module?

- Yes

- [If “yes”] Did you engage in a professional dialogue with the instructional leader following the observation?

- Yes

- [If “yes”] a. Did you and the instructional leader follow the Teacher and Leader Professional Dialogue Protocol?

- Yes
- No

- I haven't heard of the Teacher and Leader Professional Dialogue Protocol.
- [If "yes"] b. How useful was the professional dialogue in supporting your math instruction?
 - Not useful
 - Somewhat useful
 - Useful
 - Very useful
 - [If "somewhat useful" or "not useful"]
Please explain your answer. _____
- No, but one is scheduled in the near future.
- No
- No

12. Please share any feedback about your experience so far or suggestions for improving the professional learning activities and resources.

Thank you so much for your time! Please click "Submit" to finish.

EMTOT

Early Math Teaching Observation Tool: Observer Form

REL Appalachia

Administration instructions

You will use the observer form to mark your observations and make notes during an observation. After you complete an observation, you will enter ratings into an online Qualtrics scoresheet.

Before the observation, complete the top box of the form on page 2. Ask the teacher what number and operations topics they will cover during the lesson, what the student learning goals for the lesson are, and when math instruction typically occurs during the week. You will rate only the number and operations topics (subitizing, meaningful counting, comparing and labeling magnitudes, and/or solving basic problems) the teacher will cover. However, you will rate all items related to daily, integrated math instruction time; progress monitoring; and viewing and describing the world mathematically during every observation. To the extent possible, schedule the observation so you see the fullest representation of teacher’s math instruction, which could include a math-based routine, large-group and small-group activities, a game, math stories, and math-in-place opportunities. Before the observation, familiarize yourself with the key instructional practices to be covered in the lesson.

If a teacher indicates in advance that the lesson will be focused on a particular numbers and operations topic, the observer will mark the other three topics as “not applicable.”

During the observation, use the relevant sections of this observer form to document evidence of what the teacher and students say and do related to the applicable key instructional practices. This evidence will substantiate ratings and indicate opportunities the teacher may have missed to implement a practice. If the evidence is clear, you might make preliminary ratings by checking if the teacher implemented the practice as specified with consistency, with some consistency, or with no consistency in the space provided.

After the observation, complete the bottom box on page 2. Record the length of the observation and the activities observed. You may need to ask the teacher clarifying questions about what you observed immediately following the observation. Next, revisit the evidence for each observed item to determine a final rating. If evidence spans two levels of practice (e.g., implementing some aspects of a practice *with some consistency*, and other aspects *with little consistency*), select the lower level (e.g., with little consistency). For number and operations topics not covered during the lesson, select “not applicable.” For example, if the lesson focuses on solving basic problems, you might not observe the subitizing practices listed in the EMTOT.

Early Math Teaching Observation Tool (EMTOT)

Teacher name:
 Observer name:
 Observation date:

Before the observation, consult the scheduling correspondence with the teacher and/or posted classroom schedule.

1. Which number and operations topic(s) will be covered during the observation?
- Subitizing
 - Meaningful counting
 - Comparing and labeling magnitudes
 - Solving basic problems
 - Other (describe in teacher's words): _____

2. When does math instruction typically occur during the school day and week?
- Daily: AM/PM (circle one)
 - 3-4 times a week: AM/PM (circle one)
 - 1-2 times a week: AM/PM (circle one)
 - Less than 1 time a week: AM/PM (circle one)

Before the observation, consult with the teacher.

1. What are the math learning goals for the lesson?

During the observation, rate practices using this scale:

Implements the practice when you observe an opportunity to implement the practice:

With consistency = all or almost all of the time as specified

With little or some consistency = rarely or some of the time as specified

With no consistency = never as specified

Not applicable to this lesson

After the observation, document details.

2. What was the length of the math instructional period you observed?

Start time: _____ Stop time: _____ Total length: _____

3. What was observed (check all that apply): _____ Large-group activity
 _____ Small-group activity _____ Individual activity _____ Centers
 _____ Routine/transition

Subitizing
<p>1.1 Prompts subitizing. The teacher asks children to tell how many they see and how they see that quantity (e.g., seeing 3 as “1 and 2”).</p> <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>1.2 Helps children see quantities in multiple ways The teacher extends children’s observations during subitizing activities by having them look at one representation of a quantity and describe it in multiple ways (e.g., seeing 5 as “4 and 1” and as “3 and 2”).</p> <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>1.3 Provides varied examples and non-examples The teacher facilitates children’s seeing the same quantity using <i>examples and non-examples in more than one way</i>, including using different visual arrangements, different objects, and finger displays.</p> <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>1.4 Gives feedback on subitizing The teacher provides verbal feedback regarding children’s correct or incorrect use of a number word, including non-examples (e.g., labeling four toys as “not three”).</p> <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>Describe lesson (post observation if needed): How many children were involved? Was it a formal lesson? Was it a game? How do the children play? Were there manipulatives? What were they?</p>

Meaningful Counting
<p>2.1 Models one-to-one counting The teacher models assigning only one number word to each item in a collection in at least one of the following ways:</p> <ul style="list-style-type: none"> • Pointing to each item while saying one number word. • Keeping track of/separating counted and uncounted items. • Using vocal inflection to emphasize the last number word that indicates the total and then repeat the last number word used with the name of the objects counted (e.g., “four pencils”). <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>2.2 Provides opportunities for cardinality practice As children practice one-to-one counting, the teacher asks children, “How many altogether?” after the child counts so that they have the opportunity to recognize that the final number word represents the total number of units.</p> <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>2.3 Varies one-to-one counting practice The teacher varies student opportunities to practice one-to-one counting in at least one of the following ways:</p> <ul style="list-style-type: none"> • Set size (subitizable vs. non-subitizable). • What children count (e.g., objects, pictures, days, sounds). • Order in which children count objects (e.g., starting with the first object in a line or the middle object in a line). <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>
<p>2.4 Helps children with counting errors The teacher helps children address their counting errors by doing at least one of the following:</p> <ul style="list-style-type: none"> • Practicing the counting word sequence with children. • Encouraging children to count slowly, so they assign only one number to one object when they count. • Helping children devise strategies to aid their counting (e.g., moving objects they have already counted). <p><input type="checkbox"/> <i>With consistency</i> <input type="checkbox"/> <i>With little or some consistency</i> <input type="checkbox"/> <i>With no consistency</i> <input type="checkbox"/> <i>Not applicable to this lesson</i></p>

Meaningful Counting

Describe lesson (post observation if needed): How many children were involved? Was it a formal lesson? Was it a game? How do the children play? Were there manipulatives? What were they?

Comparing and Labeling Magnitudes

3.1 Prompts children to compare quantities

The teacher asks children to make verbal comparisons of sets and numbers by prompting children to make "more than," "fewer than," and "same (number) as" statements.

With consistency With little or some consistency With no consistency Not applicable to this lesson

3.2 Encourages children to count to compare

The teacher prompts children to use one-to-one counting to compare quantities.

With consistency With little or some consistency With no consistency Not applicable to this lesson

3.3 Demonstrates the size/count order relationship

The teacher demonstrates that later numbers are larger and earlier numbers are smaller.

With consistency With little or some consistency With no consistency Not applicable to this lesson

3.4 Helps children discover the successor principle

The teacher helps children discover the successor principle by asking "what is one more than...?"

With consistency With little or some consistency With no consistency Not applicable to this lesson

3.5 Fosters fluency in comparing numbers

The teacher supports children's fluency in verbally and mentally comparing numbers by doing at least one of the following:

- Asking what comes after a number—providing a "running start" as needed.
- Asking what comes before a number.
- Asking whether one quantity is "more than," "fewer than," or "the same as" another.

With consistency With little or some consistency With no consistency Not applicable to this lesson

3.6 Pairs numerals with visual quantities

The teacher pairs written numbers (e.g., the numeral "3") with visual quantities (e.g., a picture of three objects) and number words (e.g., "three") using a cardinality chart or number list.

With consistency With little or some consistency With no consistency Not applicable to this lesson

Describe lesson (post observation if needed): How many children were involved? Was it a formal lesson? Was it a game? How do the children play? Were there manipulatives? What were they?

Solving Basic Problems	
4.1 Prompts by changing small sets of objects	The teacher prompts children to notice and discuss how the quantity of a set changes as objects are added or taken away from the set.
<i>__With consistency __With little or some consistency __With no consistency __Not applicable to this lesson</i>	
4.2 Uses problem-solving tasks	The teacher presents children with problem-solving tasks across classroom situations so children can see how to apply counting to solve everyday challenges.
<i>__With consistency __With little or some consistency __With no consistency __Not applicable to this lesson</i>	
4.3 Provides opportunities to solve problems with hidden results	<p>The teacher provides opportunities for children to solve problems with hidden results (e.g., covering a total quantity with a cloth) by implementing all the following steps:</p> <ul style="list-style-type: none"> Prompting children to count or subitize the initial quantity. Hiding the initial quantity and asking children to “help me” identify how many objects the teacher has removed or added to the initial quantity. Asking children to determine how many without showing children the final set. Revealing the total quantity and asking children to count to check the answer.
<i>__With consistency __With little or some consistency __With no consistency __Not applicable to this lesson</i>	
4.4 Supports use of problem-solving tools	<p>The teacher supports children in solving basic problems using at least one of the following tools:</p> <ul style="list-style-type: none"> Objects Fingers Drawings 5- and 10-frames
<i>__With consistency __With little or some consistency __With no consistency __Not applicable to this lesson</i>	
4.5 Provides opportunities to see a quantity in different ways	The teacher provides opportunities for children to see how a single quantity can be broken into two smaller quantities (e.g., how four can be broken into two and two).
<i>__With consistency __With little or some consistency __With no consistency __Not applicable to this lesson</i>	
<p>Describe lesson (post observation if needed): How many children were involved? Was it a formal lesson? Was it a game? How do the children play? Were there manipulatives? What were they?</p> 	

Other Math Topics

If you observe other math topics, please mark below.

- Geometry
 - Recognize shapes
 - Name/label shapes
 - Compare shapes
 - Attributes of shapes
 - Combine or separate shapes
- Patterns
 - Identify patterns
 - Extend patterns
 - Correct patterns
 - Create patterns
- Measurement
 - Compare measurable attributes
 - Use standard measurement tools (e.g., a ruler, scale, or measuring cup)
 - Use informal measurement tools (e.g., child's hand or foot)
- Data and Graphing
 - Collect information
 - Organize information
 - Represent information graphically
 - Interpret information or graphs
- Other, please describe: _____

Describe lesson (post observation if needed): How many children were involved? Was it a formal lesson? Was it a game? How do the children play? Were there manipulatives? What were they?

Daily, Integrated Math Instruction

5.3 Creates a math-rich environment

The teacher creates a math-rich environment by doing at least one of the following:

- Making math-related objects and tools readily available for children (e.g., blocks, foam shapes, different-colored cubes, rulers, sorting bins). _____
- Organizing math-related objects and tools so they are easy to find and use (e.g., keeping math-related objects and tools at eye level for children). _____
- Organizing activities and routines with numeric systems (e.g., numbering classroom rules on a poster or using displayed charts with sequenced directions and icons). _____

With consistency *With little or some consistency* *With no consistency* *Not applicable to this lesson*

Supporting evidence:

Progress monitoring

6.1 Tailors instruction

The teacher adjusts instruction* during large-group or small-group activities to support lesson goals.

** The teacher might intentionally tailor instruction during lesson planning, which would be evident during classroom instruction, and/or the teacher might adjust instruction in the moment during classroom activities. Tailoring instruction in the moment could include modifying the difficulty of the instructional task for small-group, large-group, and independent activities; changing the learning modality (e.g., quantity cards, physical manipulatives, physical actions, sounds, or re-teaching content and skills).*

With consistency
 With little or some consistency
 With no consistency
 Not applicable to this lesson (lesson appears to be appropriately tailored and is developmentally appropriate).

6.2 Documents information on understanding

The teacher documents information about children's understanding.

Do not ask to see the teacher's notes; only mark if the teacher documents something during the activity.

With consistency
 With little or some consistency
 With no consistency

Supporting evidence:

Viewing and Describing the World Mathematically

7.1 Connects formal math to children's informal math ideas

The teacher connects formal math vocabulary, symbols, and/or procedures to children's informal math knowledge and everyday experiences (e.g., explicitly connects formal terms such as “subtract,” “the minus sign,” “more,” or “fewer” to children’s everyday knowledge and terms such as “take away,” “bigger,” “smaller”).

With consistency
 With little or some consistency
 With no consistency
 Not applicable to this lesson

7.2 Uses open-ended questions to apply math knowledge

The teacher uses open-ended questions (e.g., “what,” “why,” or “how”) to engage children in at least one of the following:

- Answering a question using math vocabulary.
- Student-to-student conversations.
- Student-to-teacher conversations.

With consistency
 With little or some consistency
 With no consistency
 Not applicable to this lesson

7.3 Encourages meaningful math conversations

The teacher encourages children to think and talk about math using everyday problem situations according to at least one the following specifications:

- Asking children for their help solving an everyday problem situation.
- Using questions to prompt children to talk through their problem-solving process.
- Repeating or demonstrating the problem-solving steps back to the children in sequence using math vocabulary.

With consistency
 With little or some consistency
 With no consistency
 Not applicable to this lesson

Supporting evidence: