NUMBER TALK PLANNING WORKSHEET

| NUMBER TALK ROUTINE | Task(s): Shoe Billboards String 1. 7 shoes 2. 8 shoes 3. 9 shoes 4. 10 shoes 5. 8 shoes Questions: • How many shoes? (After agreement of the class) • How do you know? OR How did you get __? OR How did you see the shoes? • Can you tell me a number sentence that matches your thinking? 19 kinders and 2 first grade guest 2 first graders (ELD 2) | Target Goals (math, social, etc.) • Skip Counting by Twos • Doubles • Near Doubles | Anticipated Student Responses • Counting • Skip Counting by Twos • Say any number | Follow-Up Questioning Clarify • Can you explain in a different way? Or Revoice their answer and ask another student to repeat the strategy? Elaborate • Revoice their partial explanation AND Can you tell me more? Can you give me more details? • If they can't elaborate put the image up as a scaffold Justification • How do you know skip counting by 2 works? Or How do you know it is a double? |

Cognitive Coaching Planning Conversation

Purpose	Possible Evidence
Clarify **goals**	What is/are your goal(s) for this coaching cycle? What might be some of the connections of this goal to the CCSSM Standards and Instructional Shifts? What might be some of the connections of this goal to the T&LF? ● My goal is to pose questions in order to get students to fully explain their thinking. I want my students to provide answers with step-by-step details so I (and other students) can understand the process of their thinking. ● Math Practice 3 and Math Practice 7 connect to this goal.
Specify **success indicators** and a plan for collecting **evidence**	How will you know you are successful in reaching your goal? What might be some of the pieces of evidence you can collect? ● I will know I am successful if the students can clearly explain the processes of their thinking. ● I will know I am successful if other students are able to revoice or repeat another student's thought process. ● Whether or not the students are right or wrong, they will be able to fully explain their thinking/strategy ● Observation script, math practice checklist, & number string checklist
Anticipate **approaches, strategies, decisions,** and how to monitor them	What will guide your decisions about the selection of the task? What will guide your decisions about the teacher questions to be asked? What will guide your decisions about the teacher moves that are made? How might your questions/actions enhance student learning? ● Because when I read it the overview the strings, including images, were in developmental order and based on the books recommendation ● Based on student response I preplanned some questions, which required students' to clarify or elaborate or justify. ● Student learning will be enhanced through revoicing techniques as well as facilitating other student's thinking through group discussion to achieve the desired mathematical goal.
Establish **personal learning focus** and processes for **self-assessment**	What might you want to be sure to do well? How might you know you are doing it? If you could videotape this lesson, what might you want to see/hear in yourself when you replayed it? ● To not provide strategies, but rather to elicit their thinking towards a full explanation. ● More student talk less teacher talk ● I will know I am doing it by sticking to the lesson plan, and working hard to not give my "teacher" input, but rather listening more to student responses. ● If I could video tape my lesson, I would want to see students using talk moves and hand signals, students providing clear responses, and scaffolding techniques to help facilitate student thinking.

Reflect on the process and **explore** refinements	How has this process been helpful to you? What might be some of the specific things about this process that were helpful? ● Different, a little intimidating because this process is new to me. Where I'm at right now is having them refer to resources to support their thinking. ● It has been helpful for me in understanding and expecting students to use different resources, including listening and questioning other's responses. ● Finding new ways to give my students strategies to explain their thinking in math and other ways. ● Learning how to teach techniques that show that all students are thinking and participating whether they are speaking or not (hand signals)

Math Observation Notes

Focus of Observation:
To pose questions in order to get students to fully explain their thinking.
Lesson Objective/Learning Target:
Students use Double/Near Doubles or Skip Counting by 2s to find totals.
Task Description & DoK Level of Task:
Quick Images: Shoe Billboards A1 (Minilesson for Early Addition and Subtraction)

Time & Speaker Codes: Teacher (T), Students (Ss), Student (S)	Observation Script Notes (Including Teacher Talk/Teacher Moves & Student Talk/Student Actions):

10:09 am

Students sitting on the carpet. Talk moves and sentence frames (I agree with ___. & I disagree with ____). Review Hand Signals (practiced with students) and sentence frames.

10:15 am
First Image:
T: I'm going to show an image and pay attention.
T: Ready and shows the first image.
T: Ok. How many shoes did you see?
Ss: Using hand signals an
T: Please raise your hand. I see one answer.
T: S1 how many shoes did you see?
S1: 7
T: Show me if you agree with S1.
Ss: Using agree signal.
T: S1 Show me how you saw 7 shoes.
S1:
T: I like what she said. Could you repeat S1's strategy?
T: Could you repeat what she said, S2?
S2: She said that she saw . . .
T: Eyes on me. I can see that you are thinking.
T: You said you counted in pairs and you saw 1, 2 shoes and that is a pair, 3, 4 shoes and that is a pair, 5, 6 shoes and that's a pair, and then another one which is 7 shoes . S1 is that what you said.
S1: I saw 2 pairs, 2 pairs, 2 pairs, and 1 more shoe.
T: I will write down what you said. Writes 7 and 2 + 2 + 2 +1 =7. Ok that makes sense to me. Can we read the number sentence together boys and girls.
T & Ss: Read the number sentence 2 + 2 +2 + 1 = 7.
T: How do you know that this is right? How does this match the picture?
S1: Cause it is in pairs of shoes.
T: Ok should we look at the picture to see if it makes sense.
Ss: Yes
T: Ok, S1 can you come up and show me how you did this. I love how S1 can be the teacher.
S1: I see 2 and 2 and 2 and 1.
T: Do you see the strategy she saw? How she did it? Let's see if we can use S1's strategy for the next picture.

T: What word you use to explain what you saw?
S1: Pairs

Second Image
T: Ok let's look at the next image.
T: Ready and flashes the image. Think. I want to see your hand signals to see that you thinking. S3How many shoes did you see?
S3: 8
T: Do we agree or disagree? It looks like everyone agrees with you? S3, how did you know that you saw 8 shoes?
S3: I don't know.
T: Let me give you time to think. Close your eyes and visualize how you saw them? We all agree with you S3. Can you tell me how you saw them? You know I like your answer maybe it will help you if we pick a friend. Can you pick a friend to help you?
S3: points at S4
T: S4 how did you see it?
S4: I saw 4 and 4 more and then I counted together and it was 8.
T: Can you give me a number sentence that matches your thinking? Now S3 does it make sense what she saw and her number sentence?
S3: Four plus four equal 8.
T: S4 how does this match the picture?
S4: Because I know there was 8 and so I counted one part and another part.
T: You counted in parts. Ok Can you give me more information?
S4: four and another four.
T: How does this answer kind of match the other answer? How do they match up? It takes a lot of thinking. I want to hear from my visitor friend. How does this match up and what do you notice?
S5: That one has three 2s and
T: What does this remind me of?
S6: Double facts.
T: Double facts.
S6: A shriveled double fact.
T: Explain what you mean.
S7: 2 and the one is in the middle.
T: I kind of get what you are saying. Let's look at another picture. I want you to remember about parts and parts and I heard the word double.

Third Image
T: are you ready? Flashes the 3rd image. Ok who can raise their hand? Who can tell me ? How many shoes did you see? S9 how many shoes did you see?
S9: 9
T: Do you agree or disagree?
T: How did you see them S9?
S9 : I saw them all in total.
T: Can you give me a number sentence?
S9: 8 + 1.
 T: You saw 8 + 1 equal 9. How did you get those numbers?
T: Ok so there some flip flops and some shoes. How many flip flops were there?
S9: 8. And I saw 1 black shoe.

T: How did you see that?
S9: I counted in my mind.
T: Can anybody add to that. I going to record that 8 + 1 = 9
S10: Can you add to S9 thinking?
T: Oh I heard that word.
S10: 7 pairs of shoes and 1 that is different.
T: Repeats students' word. How did you get 7 pairs of shoes or flip flops?
S10: I saw the picture?
T: S10 come up and show me with the picture.
S10: Comes up to the picture. I saw 2 + 2 + 2 + 2 (flips flops) and then .
T: Show me with the picture?
S10: Points to the picture and to the number sentence.
T: Can I have one more friend come up and help s10?
S11: I disagree
T: Can you show me why you disagree?
S11: I was counting 8. There is only 8 of those shoes and 1 of those.
T: You are thinking like S9. S1 can you repeat how you got your answer.
S1: I count them in 2 pairs and added 1 more.
 T: Can you help me with this problem.
S1: 2 + 2 _+ 2 +2 + 1 = 9.
S9: No that equals 7.
T: Can you tell me why you disagree?
S9: Because it matches what is on the top (2 + 2 +_2 + 1 = 7)
S9: Oh there is another 2.
T: What is the number sentence ?
S9: 2 +2 + 2+2 +1.
T; Can you come and show me how you matched the sentence with the picture?
S9; You have 4 2s and 1 more.

Closing
T: Boys and girls I keep hearing the word pairs. Shows the pictures when we use pairs we are counting by . ...
Ss: We are counting by 2s.
T: Let's use count by 2s. She reviews the images and chorally counts by 2s with the class.

10:36 am

Observer: J. Espinosa   Room #: 43
Date 4/28/15 10:10-10:36 am   # of Students: 19 (1 First Grader)

Implementing Math Practices Checklist

Math Practice	Task Characteristics	Teacher Moves
# 1 **Make sense of problems and persevere in solving them.**	⊠ Has more than one entry point ⊠ Has multiple solution paths ⊠ Cognitively challenging, not overly-scaffolded ⊠ Requires balance of procedural fluency and conceptual understanding ☐ Requires students to justify solution using other solution methods	⊠ Structure individual think time and student-student talk time. ⊠ Allow time for students to struggle (make-sense, get-stuck-and-persevere), without "rescuing." ⊠ Probe student reasoning and justification. ⊠ Build in time for metacognition (think about and discuss solution process).
#2 **Reason abstractly & quantitatively.**	☐ Has a relevant, realistic context ☐ Can be expressed with multiple representations ☐ Requires students to frame solution in a context	☐ Expert students to interpret, model, and connect multiple interpretations. ☐ Prompt students to articulate connections between context and representations. ☐ Provide minimal scaffolding to support connect to the context.
#3 **Construct viable arguments and critique the reasoning of others.**	⊠ Is clearly stated ⊠ Is grade level appropriate ☐ Avoids single steps or routine algorithms	☐ Help students differentiate between assumptions and logical conjectures. ⊠ Model and prompt students to evaluate peer arguments. ☐ Expect students to formally justify their conjectures.
#4 **Model with mathematics.**	☐ Illustrates the relevance of the math ☐ Requires students to . . . ▪ identify variables and extraneous information ▪ compute & interpret results, report with multiple representations, and justify reasonableness of results	☐ Expect students to (or ask questions to help students) identify variables and procedures. ☐ Expect students to (or facilitate discussion) evaluate the appropriateness of the model.
#5 **Use appropriate tools strategically**	☐ Lends itself (or requires) using multiple learning tools ☐ Gives students opportunity to develop (or requires the use of) fluency in estimation and mental computations	☐ Allow students to choose (and state why) appropriate learning tools. ☐ Encourage creative tool alternatives. ☐ Expect (or model) error checking by estimation.
#6 **Attend to precision.**	☐ Contains precise, not wordy, instructions ☐ Includes assessment criteria for communication of ideas	☐ Demonstrate consistent expectation for precision in communication and solutions. ☐ Encourage student identification of incomplete aspects of process or solution.
#7 **Look for and make use of structure.**	⊠ Requires students to analyze task before automatically applying an algorithm ☐ Requires students to identify and compare the merits of different approaches	⊠ Question students about . . . ▪ …reasonable intermediate results? ▪ …justify algorithm or solution paths? ⊠ Prompt students to identify mathematical structures in symbolic expressions, geometric figures, graphs, tables, etc.
#8 **Look for and express regularity in repeated reasoning.**	⊠ Lends itself to (or requires) recognition of pattern or structure ☐ Connects to prior knowledge or future concepts in a cumulative, but non-routine way	☐ Help students understand why procedural shortcuts work. ⊠ Prompt students (or model) to make explicit, conceptual connections between prior and/or future concepts.

Cognitive Coaching Reflective Conversation

Purpose	Possible Evidence
Summarize impressions and **recall** information/data	How did you feel about the lesson? How did it go? What are some of the things you did that made you feel that way? I feel the very first image went well. I feel the student was able to explain her thinking very clearly and the other students were receptive to her reasoning and agree with her answer. She was able to explain her reasoning clearly. Having her explain her answer verbally and followed visually for support went well especially in helping the other students to understand. Following the script about asking how many shoes you saw and how do you know. Also when I revoiced her answer that helped because she said it softly and writing it down so students could visually see it also helped and asking her to show you how her number sentence matched the picture.
Analyze casual factors (start with consciousness)	What decisions did you make about how to monitor and adjust? What was your thinking about the sequence of the lesson? How did the lesson go compared to how you thought it might go? What are some things you did to make the lesson go as you described? What did you think the students walked away saying after that lesson? The first adjustment was with the student who said he didn't know. I had him choose another friend to help. I just had used that strategy before because I didn't want to loose him. Did try to keep the flow based on the lesson plan. I had a difficult time determining when a student should clarify or elaborate. I though I would not skip back to, be done with #1, be done with #2, and be done with #3, but I jumped back to the second number string because I didn't get another way to get $4 + 4 = 1$ and I wanted to have them connect back to pairs. I bounced around more than I thought I would. I would think the students thought I need to count by twos and have a strategy in place if they saw pairs again.
Construct new learning	What did you learn in the process of planning and teaching this lesson that you want to take with you to future delivery of lessons? What is one thing you want to be mindful of from now on? I think I could have had student elaborate. I was quick to revoice rather than giving them time to elaborate on their own and give them more wait time and time to complete their thoughts. For example with S10 I could have give S10 time to explain their answer rather than focus on whether it was right or wrong. What are some of the things your learning as a teacher of these kindergarten students? What might you be willing to commit to apply in the future? As a teacher, I am learning how to pick questions that are appropriate for their developmental level, as well as how much time and support is needed for them to formulate

	a complete thought. I am willing to commit to allowing my students more opportunities to think things through by using a "turn and talk" partner discussion technique, as well as allowing more wait time for students to formulate their answers.
Commit to application	How might you apply your new learning when planning future lessons? I will mindfully remember to have students turn and talk as well as give my students the appropriate wait time to come up with complete answers. What might be your one or two things you will try differently with the next number string (as it related to posing questions to have student fully explain their strategy)? I will lesson plan to put wait time as a strategy as well as providing students a chance to pair share before calling on a student.
Reflect on process of enhancing the lesson and **explore** refinements	How did your understanding of your students' possible responses influence your planning? How did your use of a particular math representation or model (number sentence if an image, ten frame, arithmetic rack, or money model) enhance students understanding of the target strategy and possibly the mathematics behind it? I planned on students' possible responses, and for the most part, I was right with their responses. This really influenced my planning since I had a plan in place to redirect my students if necessary. Having a number sentence written helped my students clearly see my focus strategy of using double facts, or counting by 2's to find a given amount. The student's were able to make connections by comparing the three number strings for all three images. Was this conversation helpful? Why or Why Not? This conversation was very helpful. It provides an opportunity to reflect on a lesson, debrief on what went well and why, as well as find and prepare for parts to improve in. I feel with practice and reflection, number strings will become a more fluid practice in my daily math routine.

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FEEDBACK CONVERSATION PROTOCOL
PRINCIPAL

Teacher _____

Principal _____

A. Warm and Clear Opening

☐ 1. Principal Acknowledges Teacher's Time.
   Thanks for meeting with me.

☐ 2. Principal asks Teacher for the Lesson's Aim.
   What was the goal for the lesson plan?
   Teacher Clearly States Lesson Aim.

☐ 3. Principal asks Teacher for the Aim of this Conversation.
   What would you like to get out of this conversation?
   Teacher Clearly States Aim for this Conversation.

> NOTES ON THE TEACHER'S AIMS FOR THE LESSON PLAN AND CONVERSATION
> *Prompts for clarification: Can you elaborate on that? Can you give me an example? Can you say more? What do you mean by...?*

☐ 4. Principal Paraphrases and Affirms the Teacher's (1) Aim of the Lesson and (2) Aim for this Conversation.
   Your lesson aim was {LESSON AIM} and by the end of the conversation you would like to {CONVERSATION AIM}.

☐ 5. Principal Clearly States their Goal for this Conversation.
   That's helpful. For me, by the end of the conversation, I would like to {PRINCIPAL'S AIM FOR THE CONVERSATION}...

B. Focus on What's Going Well

☐ 6. Principal Begins by Asking Teacher to Reflect on What Went Well.
   What do you think went well during the lesson plan? What were students doing well?

☐ 7. Teacher Reflects on What Went Well.

☐ 8. Principal Paraphrases What the Teacher Identifies as Going Well.
   It sounds like what you think went well were {POSITIVES TEACHER MENTIONED in Step 6}...

☐ 9. Principal Comments on Concrete, Specific Things That Went Well.
   In addition to what you mentioned, I noticed {POSITIVES}...

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FEEDBACK CONVERSATION PROTOCOL
TEACHER

Teacher _____

Principal _____

A. Warm and Clear Opening

☐ 1. Teacher Acknowledges Principal's Time.
   Thanks for meeting with me.

☐ 2. Principal asks Teacher for the Lesson's Aim.
   Teacher Clearly States Lesson Aim.
   My aim for the lesson was {LESSON AIM}.

☐ 3. Principal asks Teacher for the Aim of this Conversation.
   Teacher Clearly States Aim for this Conversation.
   In this conversation I am looking forward to {AIM FOR FEEDBACK CONVERSATION}.

☐ 4. Principal Paraphrases and Affirms the Teacher's (1) Aim of the Lesson and (2) Aim for this Conversation.

☐ 5. Principal Clearly States their Goal for this Conversation.

> NOTES ON THE PRINCIPAL'S GOALS FOR THE CONVERSATION
> *Prompts for clarification: Can you elaborate on that? Can you give me an example? Can you say more? What do you mean by...?*

B. Focus on What's Going Well

☐ 6. Principal Begins by Asking Teacher to Reflect on What Went Well.

☐ 7. Teacher Reflects on What Went Well.
   I noticed students were...

☐ 8. Principal Paraphrases What the Teacher Identifies as Going Well.

☐ 9. Principal Comments on Concrete, Specific Things That Went Well.

> NOTES ON THE PRINCIPAL'S GOALS FOR THE CONVERSATION
> *Prompts for clarification: Can you elaborate on that? Can you give me an example? Can you say more? What do you mean by...?*

C. Identify Challenges Facing the Teacher

☐ 10. Principal Transitions Conversation to Reflection of Areas for Improvement.

☐ 11. Teacher Reflects on Areas for Improvement or Challenges.

Some areas for improvement I feel I could work on… I would like some help addressing student actions such as…

☐ 12. Principal Paraphrases Teacher's Challenges.

It sounds like what's challenging you is X, Y, and Z., is this right?

D. Generate Ideas for Addressing Teacher's Challenges

☐ 13. Principal Offers Ideas and Resources for Addressing the Teacher's Challenges from Step 11.

> IDEAS FOR IMPROVEMENT
> *Prompts for clarification: Can you elaborate on that? Can you give me an example? Is this challenge important to you because…?*

E. Identify Other Areas for Improvement

☐ 14. Principal Offers Ideas on Other Opportunities for Growth Grounded in Evidence.

> NOTES ON NEXT STEPS
>
> ONE THING TEACHER WILL TRY
> DIFFERENTLY TOMORROW: _____

F. Prioritize Next Steps

☐ 15. Teacher and Principal Review Ideas for Change and Assign Priority.

G. End Positively

☐ 16. Principal Asks if This Conversation Was Helpful?
Teacher Gives Principal Feedback on What Worked.

My goal for this conversation was {CONVERSATION AIM} and I appreciated your {SPECIFIC FEEDBACK}.

☐ 17. Principal Make a Final Positive Statement/Recognizes Growth and Progress.

☐ 18. Thanks You for Time and Insights.