Handouts for Hunt Session
US Math Recovery Conference
April 2023
Tacoma WA

Actionable Five

- ➔ Aim for Access
- ➔ Build from Strengths/Accommodate needs
- ➔ Allow Multiple Ways
- ➔ Support Students' Agency
- ➔ Connect to Meaning

4 children share 14 enchiladas equally. The children finish all of the enchiladas. How many enchiladas does each child eat?

NC STATE

S: [Makes piles of four cubes to a total of 12. Adds another pile for a total of 16. Stops. Thinks for a while.]

I: What are you thinking?

S: This one's harder because [long pause] nothing times 4 equals 14.

I: That's kind of like the first one . . . like nothing times two equals five. What if you imagine sharing them . . . all 14 enchiladas here. How would we share those?

S: [Puts down four tiles. Then deals out 14 tiles one by one to each person, gets unequal piles]. It is not going to be equal.

I: I wonder if you could make them equal. They all want the same amount.

4 children share 14 enchiladas

S: I don't know. You know, though. Can't you show me?

I: I'm interested in how you are thinking about it.

S: Well, I guess. . . . I was thinking [puts face in hands] you could try splitting them in half or something?

I: Split them in half. Why would we split them in half?

S: Is that right?

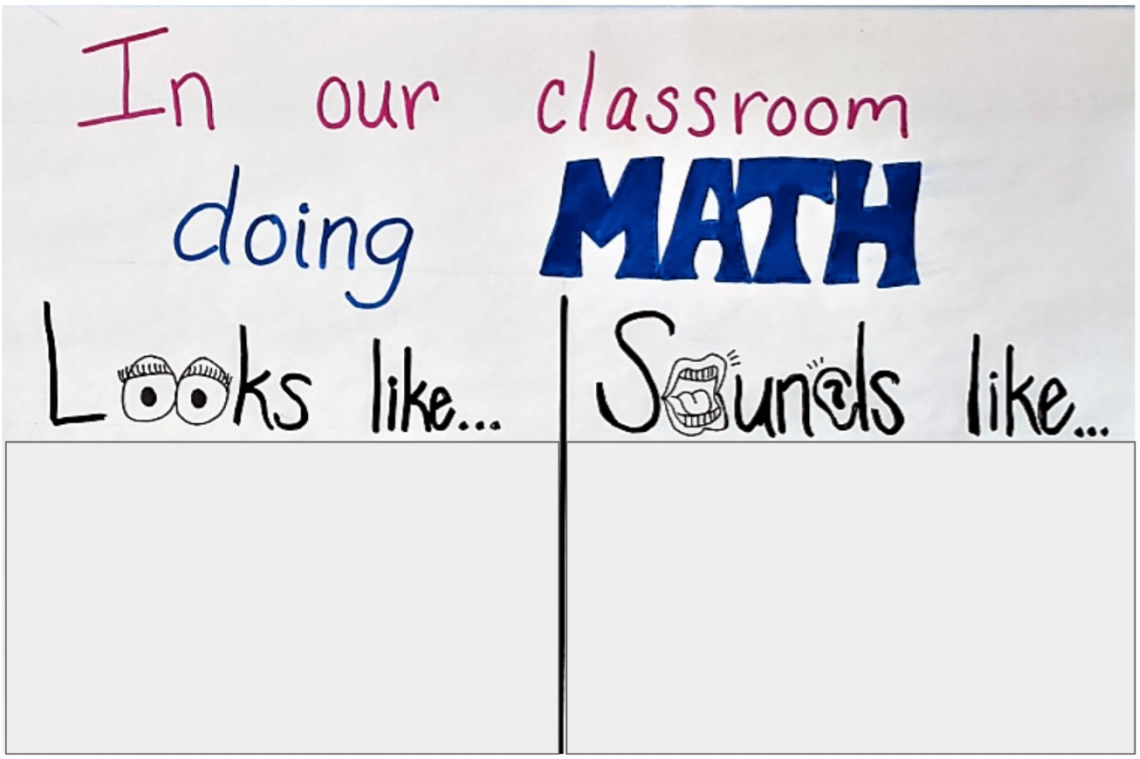
I: [listens]

S: Let's see if it's fair to the other groups . . . they had one . . . one . . . then they would each have to have one there. It is fair!

Brainstorm

Doing Math LOOKS Like	Doing Math SOUNDS Like

List



Tasks for Teaching Counting-On

(Number as Abstract Composite Unit, created by Tzur & Lambert)

Useful Task: *"How far from the start are you?"* (Turn-taking pair-game)

Game in space: Find a spot in class with at least 15 tiles; Mark "Start"

Person *A*: Role a die, hop over that many tiles while counting out loud, mark end spot with post-it

Person *B*: Stand on marked tile, role a die, hop while counting out loud, mark end with pots-it

Both: Figure out how many tiles hopped from start;

Switch roles, remove post-its, start-over.

Board Game (see chart):

Play game on chart

Important follow-up prompts (both for class tiles and board-game):

(After reaching the first addend): Are you surprised that this was the number?

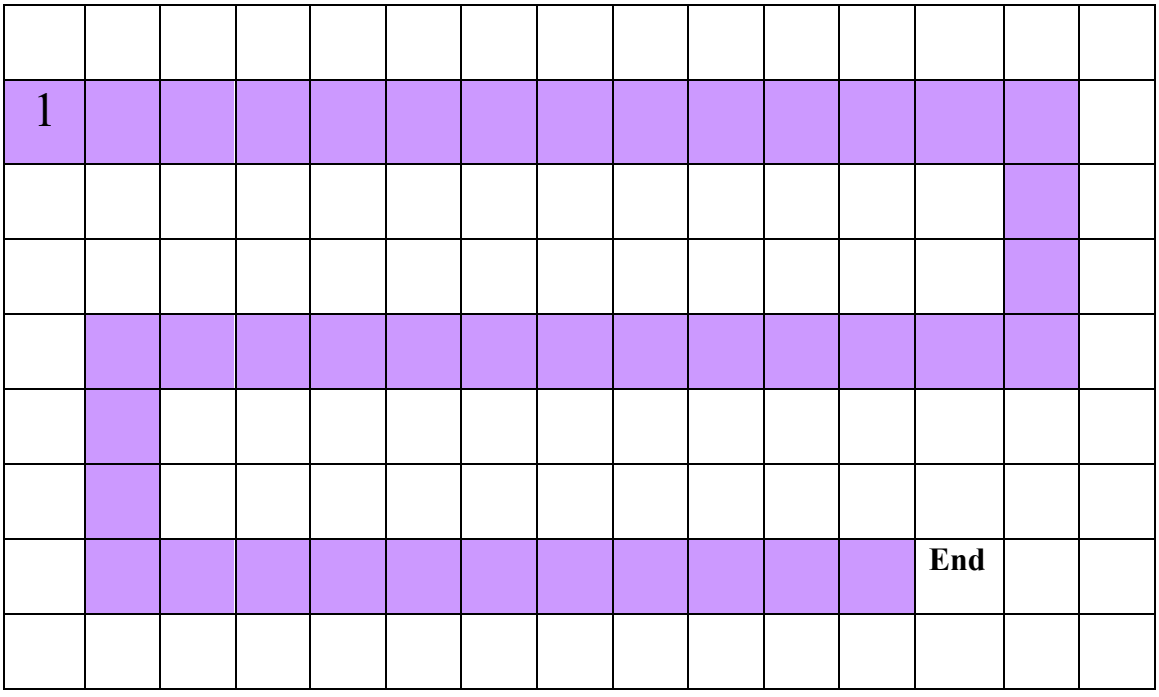
Do you have to count from one? Could you start counting at a different number? Why?

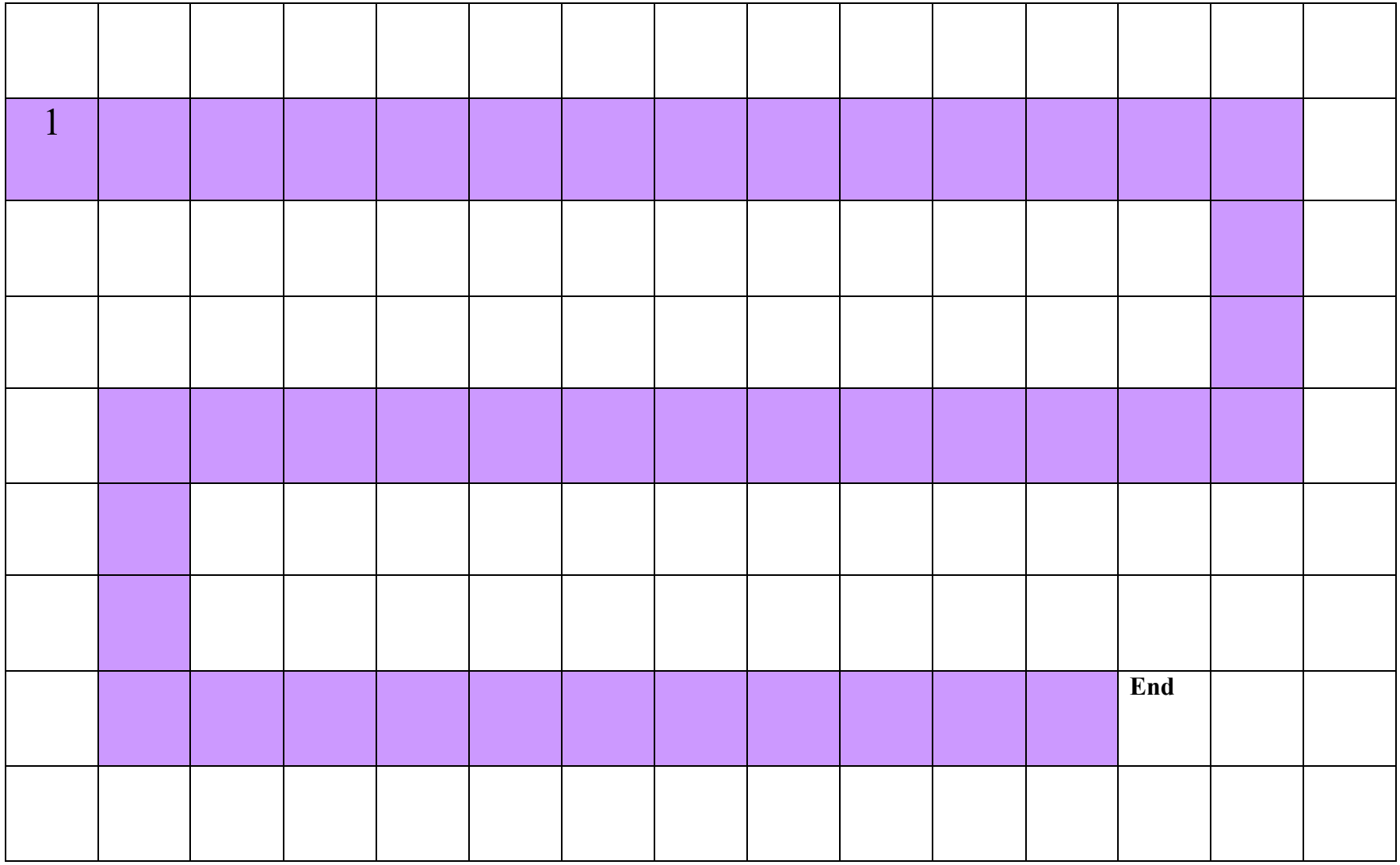
(If knowing that 'X' would hop x tiles and 'Y' would then hop y tiles): Can you tell how far from the start before hoping?

How did you know where to stop counting?

Cover tiles of first addend; Cover tiles of both addends

Present as missing addend problems ('X' hopped 6 tiles; 'Y' then hopped a few more and is now 11 tiles from the start; How many tiles did 'Y' hop?)





GAME BOARD

Emma Excerpts

Excerpt 2: Task: 6 + 9 (Session 2)

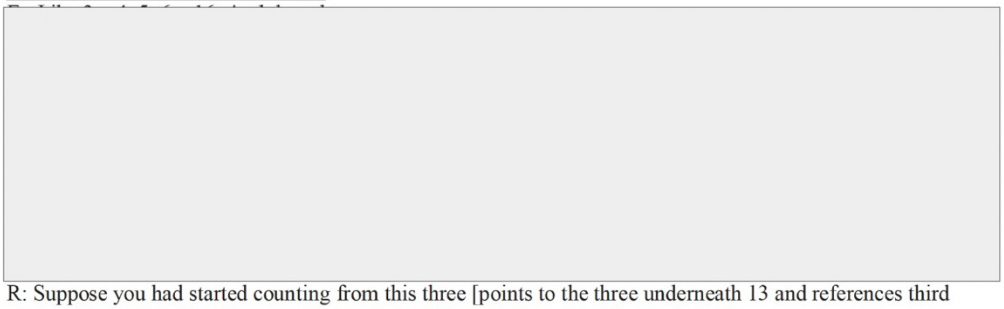
R: Six for me and nine for you [makes two covers writes six and nine on each]. How far from the start are you?

E: [moves fingers under the table] 15.
R: Oh. Did you do that in your brain?
E: [smiles] I used my fingers.
R: How'd you use your fingers?
E: Nine…10 [puts up a finger], 11 [two fingers], 12 [three finger], 13 [four fingers], 14 [five fingers; pauses, puts down five fingers], 15 [puts up one finger on the same hand].
R: Oh…so you started with the nine? Why start with the nine?
E: Because the nine is like a bigger number.
R: How'd you know when to stop counting?
E: [pauses for four seconds] Uhh…I don't know.
R: So you did nine… ten [puts up a finger], 11 [two fingers], 12 [three finger], 13 [four fingers], 14 [five fingers; pauses, puts down five fingers], 15 [puts up one finger on the same hand]?
E: [child nods yes].
R: How did you know when to stop counting?
E: [pauses then smiles broadly] Because five plus one is six.
R: Oh. OK. I understand.

Where does working memory become evident?

What teaching moves support the child to access noticing and reflection?

Excerpt 4: 3 + 13 (Session 5)



R: Suppose you had started counting from this three [points to the three underneath 13 and references third space on game board]? How would you do that? [removes paper and game board]
E: [puts up hand] 3…, 4 [raises one finger], 5 [raises 2nd finger], 6 [3rd finger], 7 [4th finger], … 8 [5th finger], 9 [6th finger], 10 [7th finger], 11 [8th finger], 12 [9th finger], 13 [10th finger; stares at ten fingers and pauses for 5 seconds].
R: 13…. How many have you counted so far?
E: Ten.
R: How many more do you need to count?
E: I think… [sticks out lower lip; pauses for 3 seconds]. I think…. [frowns, looks down]
R: [grabs a paper and pen] So you started at three [writes three and an empty number line] …and you did 4 [makes hop on number line], 5 [makes hop on number line], 6 [makes hop on number line], 7 [makes hop on number line], 8 [makes hop on number line], 9 [makes hop on number line], 10 [makes hop on number line], 11 [makes hop on number line], 12 [makes hop on number line], 13 [makes hop on number line]. Then you stopped and did this [holds up all ten fingers and wiggles them, covers up the number line].
E: Oh! 13… 14 [raises a finger], 15 [raises a finger], 16 [raises a finger]. I need three more. I needed three more to get 16.
R: How did you know it was three more?
E: Because my answer got me 16.

Where does working memory become evident?

What teaching moves support the child to access noticing and reflection?

Excerpt 4: 3 + 13 (Session 5)

E: Like 3…4, 5, 6…16. And then the one.
R: You said, 3…4, 5, 6 and the one. What's the one?
E: The one is the… [pauses; frowns].
R: Can you show me what you mean? [hands child a paper and pen]
E: So it was…13 plus 3 is… [writes 13 + 3 = 16 long form].
R: [points to the one in 13] So this is the one?
E: That's the one in the 13.
R: But is that like, ONE [shows one finger]?
E: Yeah only one.
R: So, if this is one, how come I can't just count one more…seven?
E: Because…three doesn't have a one.
R: Suppose you had started counting from this three [points to the three underneath 13 and references third space on game board]? How would you do that? [removes paper and game board]
E: [puts up hand] 3…, 4 [raises one finger], 5 [raises 2nd finger], 6 [3rd finger], 7 [4th finger], … 8 [5th finger], 9 [6th finger], 10 [7th finger], 11 [8th finger], 12 [9th finger], 13 [10th finger; stares at ten fingers and pauses for 5 seconds].
R: 13…. How many have you counted so far?
E: Ten.
R: How many more do you need to count?
E: I think… [sticks out lower lip; pauses for 3 seconds]. I think…. [frowns, looks down]
R: [grabs a paper and pen] So you started at three [writes three and an empty number line] …and you did 4 [makes hop on number line], 5 [makes hop on number line], 6 [makes hop on number line], 7 [makes hop on number line], 8 [makes hop on number line], 9 [makes hop on number line], 10 [makes hop on number line], 11 [makes hop on number line], 12 [makes hop on number line], 13 [makes hop on number line]. Then you stopped and did this [holds up all ten fingers and wiggles them, covers up the number line].
E: Oh! 13… 14 [raises a finger], 15 [raises a finger], 16 [raises a finger]. I need three more. I needed three more to get 16.
R: How did you know it was three more?
E: Because my answer got me 16.
R: OK. I wonder if there is a way to figure it out without having to know the answer first.
E: [shrugs]

Where do rote procedures become evident?

What teaching moves support the child to access noticing and reflection?