

Region 11 K-2 Number Sense – DAY 3 – PLC Meeting 1

Classroom Conversation A

Choose at least a Number Talk or a Conversation about Problem Solving Strategies to investigate students' mathematical thinking in your class prior to PLC Meeting 1 at your site.

ENGAGING STUDENTS IN NUMBER TALKS	ENGAGING STUDENTS IN CONVERSATIONS ABOUT PROBLEM SOLVING STRATEGIES
<p>You may do a number talk with a small group or with your entire class.</p> <p>Adapt or use an <u>open number line</u> or <u>subtraction</u> activity from today's session. As you observe students working or listen to their thinking, watch for:</p> <ul style="list-style-type: none"> • Size of the intervals they chunk along the <u>open number line</u> – do they chunk by 10s, multiple 10s, get to a ten, 5s, 2s, or just by 1s? • Students who chunk first and then do one-by-one counting to solve problem • Students who chunk first interval using one-by-one counting, then continue with one-by-one counting, then recount all • Whether students count forward or backward or change direction based on different contexts <p>You might continue to do number talks using <u>rekenreks</u>, <u>ten frames</u>, or <u>dot cards</u>. Consider:</p> <ul style="list-style-type: none"> • related equations that may encourage students to derive an unknown fact from a known fact • equations that may encourage the use of making a ten • <u>mental math activities</u> from your curriculum materials <p>Reflection Questions for Your Number Talk</p> <ol style="list-style-type: none"> 1. What questions or prompts from you caused students to more clearly verbalize their thinking? 2. What strategies are most used by your students? 3. What new strategies are beginning to emerge? Why do you think that is happening? 	<p>Engage your students in at least 3 problems and have classroom conversations about their thinking and strategies.</p> <p>This month you can select from several problems. All problems use the same context of skaters at a skating rink to help with reading comprehension of the problems and to highlight the different actions in various problem types. A template is included if you want to run off problems for the students.</p> <p>Directions:</p> <ul style="list-style-type: none"> • You may do the problems/conversations over several days (the power of developing number sense over short, frequent experiences). You may do all three problems on the same day (the power of developing relational thinking by comparing and contrasting problems and solution strategies). • Select the number pair in the parenthesis that makes the most sense for the level of your students. You can differentiate and give different number pairs to different students. If you find large amounts of derived fact/recall strategies, consider using a more challenging pair of numbers. • With younger students or those with emerging number sense you can act out the problems, engage students in a classroom conversation, and, when appropriate, record their thinking on the board or chart paper. • Problems can be solved mentally, with manipulatives, or on paper/white boards. • You may read problems to students and clarify the context; manipulatives may be available. • Feel free to use your students' names in the problems or adapt problems to a context that interests your students.

GETTING READY FOR YOUR PLC

- As soon as possible after your classroom conversation, make notes of the highlights, misconceptions, strengths, perplexing moments, or ah-ha's that occurred during your discussion.
- Save any artifacts that will help you share your students' thinking, strategies, misconceptions, or mathematical strengths.

Artifacts might include: dot cards or number combinations you used, your notes, audio/video recording of the talk, copy of a recording chart you used.

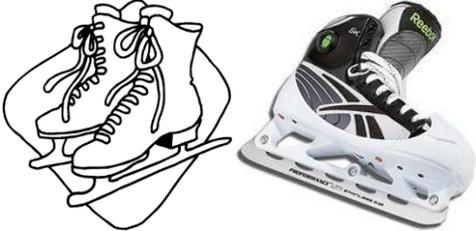
GETTING READY FOR YOUR PLC

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- Save any artifacts that will help you share your students' thinking, strategies, misconceptions, or mathematical strengths. Aim to have artifacts that reflect the thinking of at least 4-6 of your students whose work you find interesting. For example:
 - if your students work on paper, save 4-6 pieces of the work;
 - If they act out the problem, work with manipulatives, or work on white boards, you could photograph/video the work or describe it in your notes;
 - if you had students describe their thinking or strategies while you recorded, you could save the recording sheet or photograph the board space.

Problems to Use Following Session 3 of Region 11 Training

Note: This time, comparison problems and subtraction problems are included along with addition problems, though students may often use either subtraction or addition strategies to solve a given problem. All of the problems are listed together to help teachers select problems they most want to explore with their students. Because teachers report they present problems on the board, go over the context and vocabulary and have students work on blank paper, white boards, with manipulatives, etc, we did not format each problem individually. A template for 4 problems is provided if you want to give students printed copies of the problem (you can just copy/paste or handwrite in the problems on these templates).

You may want to go over the following words with students prior to reading the problems.

	<p>skate skates</p>
	<p>rink ice rink skating rink skaters skating children</p>
	<p>snack snacks snack stand refreshments</p>
	<p>bag of popcorn</p>

Problems to Use Following Session 3 of Region 11 Training

1. Join, Result Unknown

_____ children are skating on the ice rink.

Then _____ more children come and skate on the rink.

How many children are skating on the rink now?

(2, 3) (7, 4) (16, 6) (38, 5) (27, 34)

2. Join, Result Unknown

_____ children are buying snacks.

Then _____ more children come to buy snacks.

How many children are now buying snacks?

(6, 7) (18, 5) (37, 6) (26, 45)

3. Separate, Result Unknown

Almeda sees _____ children skating on the ice rink.

Then _____ children leave the rink to go home.

How many children are left skating on the rink?

(6, 3) (10, 7) (23, 5) (35, 25) (45, 27)

4. Separate, Result Unknown

Sam sees _____ children skating on the ice rink.

Then _____ children go to get snacks.

How many children are left skating on the rink?

(5, 3) (11, 5) (25, 7) (46, 23) (65, 37)

5. Join, Change Unknown

_____ children are skating on the ice rink.

Then some more students come to skate.

Now there are _____ children skating on the rink.

How many children joined the first group of skaters?

(4, 6) (7, 15) (14, 23) (20, 45) (28, 44)

6. Join, Start Unknown

Some children are skating on the ice rink

Then _____ children come and join the skaters on the rink.

Now there are _____ skaters on the rink.

How many children were skating on the rink at first?

(3, 5) (6, 13) (8, 23) (15, 32) (23, 52)

7. Separate, Change Unknown

Sam sees _____ children skating on the ice rink.

Then some students go to get snacks.

Now there are _____ children skating on the rink.

How many children went to get snacks?

(5, 2) (14, 7) (19, 8) (36, 16) (54, 25)

8. Comparison, Difference Unknown

_____ skaters are wearing black skates.

_____ skaters are wearing white skates.

How many more skaters are wearing black skates than white skates?

(4, 2) (11, 5) (18, 7) (23, 17) (43, 25)

9. Comparison, Larger Quantity Unknown

The workers at the snack stand sold _____ bags of popcorn in the first hour.

In the second hour they sold _____ more bags of popcorn than they sold in the first hour.

How many bags of popcorn were sold in the second hour?

(3, 2) (7, 8) (17, 6) (37, 8) (35, 28)

Name	Date
1.	

Name	Date
2.	

Name	Date
3.	

Name	Date
4.	