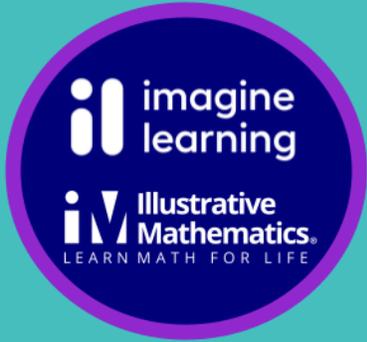


Leadership



Handout

2

Imagine IM for School & District Leaders

2.1 Review vs Warm-up Roleplay

Directions: Role-play each scenario with a partner. One partner takes on the role of the teacher, and the other partner acts as the student.

Scene 1	
Gradual Release	Problem-based
<div style="border: 2px solid #800080; padding: 10px; margin-bottom: 10px;"> <p style="color: #000080; font-weight: bold;">Warm-up</p> $5 + 9 + 5$ </div> <p>Teacher: Ok. Let's do some math! Think about our friendly number 10! I'll help you with the first one. Can anyone tell me what two numbers I can add to make 10?</p> <p>Student 1: 2 and 8!</p> <p>Teacher: (while annotating the slide on the board) Well, that's true, but in this problem, it's 5 and 5. Now, I have $10 + 9$. That's way easier to solve than $5 + 9 + 5$, right?</p> <p>Student 2: Yes!</p> <p>Teacher: Of course it is! Now I have an answer of 19. Good work!</p>	<div style="border: 2px solid #800080; padding: 10px; margin-bottom: 10px;"> <p>Find the value of each expression mentally.</p> $5 + 9 + 5$  </div> <p>Teacher: Please take 30 seconds of quiet thinking time to find the value of this expression. Give me a thumbs-up when you have an answer and a strategy.</p> <p>Teacher: What's the value?</p> <p>Students: 19</p> <p>Teacher: Did anyone get a different value? (after a moment) I invite you to share your strategy.</p> <p>Student 1: I noticed that $5 + 5$ is 10, so then I just had to add 10 and 9.</p> <p>Teacher: (annotated $5 + 5 = 10$ and $10 + 9 = 19$ as Student 1 spoke) Thank you for sharing that! Does anyone else want to share a strategy?</p> <p>Student 2: I added 5 and 5 first, too. But I thought of the 9 as 10. So I added 10 and 10 to get 20. Then, I knew I had to subtract 1 from 20, so the answer is 19.</p>



Discuss: How did it feel as the teacher? How did it feel as the student(s)?

Scene 2

Gradual Release

Warm-up

$$25 + 9 + 5$$

Teacher: Let's look at another one! It's a little bit harder, but remember we can use the friendly number 10! Do you see two numbers that go together to make a 10 or maybe a multiple of 10? Tell your partner!

Student 1 : (to a partner) Yes! 25 and 5 make 30.

Teacher: I heard Student 1 say 30! That's right! Who else got 30? Great work, you've been working on this strategy all year.

Teacher: Now, we can easily solve $30 + 9 = 39$. Raise your hand if you got that answer. (pauses for hands) Exactly...great job!

Problem-based

Find the value of each expression mentally.

$$5 + 9 + 5$$

$$25 + 9 + 5$$



Teacher: Let's look at another one. When you have the value and a strategy, put your thumb up. (Thumbs go up at different times during a one minute quiet thinking time.)

Teacher: Student 1?

Student 1: I got 39.

Teacher: Did anyone get a different number? (waits) Student 1, tell us about your strategy.

Student 1: I did the same thing I did for the first one. I made tens. First, I added $25 + 5$ to get 30. Then added $30 + 9$.

Student 2: Me too!

Teacher: That makes sense. Who thought about it in a different way?

Student 3: I just added 20 to 19.

Teacher: (anates 19 + 20 on the board) Hmm. Say more.

Student 3: Look at the first problem, $5 + 9 + 5$. See how it is in the second one? (stands up and points to the expression). I had to add 20 (points to the 2 in 25). $19 + 20$ is 39.

Teacher: Ahh. You used the first problem to help you solve the second problem. Interesting.



Discuss: How did it feel as the teacher? How did it feel as the student(s)?

Scene 3

Gradual Release

Warm-up

$$25 + 15 + 19$$

Teacher: Ok you are ready to do this on your own! Remember friendly tens.

Teacher: (after 2 minutes) Okay, who can show us how to do this one?

Student 1: I can! (student walks to the board and talks as he writes) $25 + 15$ is 40 and $40 + 19$ is 49...so 49!

Teacher: Close! Who can help Student 1?

Student 2: $40 + 19$ is 59.

Teacher: That's right. Don't worry, Student 1, I make mistakes like that all the time. Thank you for sharing your process.

Teacher: There is one more problem, but we are out of time. So we will save that one for homework!

Problem-based

Find the value of each expression mentally.

$$5 + 9 + 5$$

$$25 + 9 + 5$$

$$25 + 15 + 19$$



Teacher: Last one! Put your thumb up when you have a value and a strategy. (Thumbs go up at different times during a one minute quiet thinking time.)

Teacher: Ok. What's the value?

Many Students: 59

Student 1: I got 49.

Teacher: (writes 59 and 49 on board) Ok. Let's talk strategies! Student 2, how did you figure this out?

Student 2: I tried it like Student 2 did on the last one. We can see $25 + 9 + 5$ in this one (pointing to the last expression). The first number is the same, there is a ten added to the 5 and a ten added to the 9. That means I just had to add 20 to the 39.

Teacher: I see the two tens. Where did Student 2 get 39.

Student 3: That was the value of the last problem!

Teacher: Ahh. I see (circling the 39 from the previous problem). Student 2 used the strategy Student 3 used last time. Did anyone else do that? (several students answered yes)

Student 4: I didn't. (Teacher annotates as student 4 explains.) I started by adding the tens. There are 4 tens (Teacher underlines the two in 25, the one in 15, and the one in 19.) Then I put the two 5s together to make another ten.

Teacher: These? (pointing to the annotation, Student 4 agrees). Then what did you do?

Student 4: I added the ones $5 + 5 + 9$. It is 19. We did that in the first problem. $40 + 19$ is 59.

I started with $25 + 15$. I knew that $20 + 10$ was 30, and the 2 fives leftover made that 40, and $40 + 19 = 59$.

Teacher: That makes sense. Thank you for sharing. Let's go back to 49. Student 1, tell us about your strategies! I especially loved that you used other students' ideas.

Student 1: I did it the same way as Student 3. But I made a mistake. I only added 40 and 9.

Teacher: Do you want to change your answer?

Student 1: Yes. 59. (Teacher crosses out 49 on the board).

Teacher: When you were thinking about each expression, How did you decide which two numbers to add first?

Student 5: Fives are easy to add so I just looked at which numbers I could add to make a ten.

Student 3: I found how much I had to add to the last sum we found and added those numbers together.

Teacher: I noticed those two strategies as you all explained! Great thinking and communicating!



Discuss: How did it feel as the teacher? How did it feel as the student(s)?

2.2 Warm-up Teaching Notes

Directions: Independently read through the warm-up cards and teaching notes, noting anything that would be useful for teachers beginning implementation.

Learning Goal: Let's solve story problems and share our thinking with others.

Pacing: 10 minutes for warm-up activity and synthesis

About the warm-up

- Warm-ups help students get ready for the day's lesson, or give students an opportunity to strengthen their number sense or procedural fluency.

Activity narrative

- This Number Talk encourages students to think about place value and to rely on the properties of operations to make it easier to find the value of an expression mentally (MP7).
- The methods elicited here will be helpful later in the lesson when students make sense of and solve Put Together/Take Apart, Result Unknown problems with multiple two-digit addends.

Standards:

Addressing: 2.NBT.B.5

Find the value of each expression mentally.

$$5 + 9 + 5$$



Teaching notes

Instructional routine: Number Talk

Launch

- Display one problem.
- “Give me a signal when you have an answer and can explain how you got it.”
- 1 minute: quiet think time

Find the value of each expression mentally.

$$5 + 9 + 5$$



Activity:

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.
- This activity continues on the following cards.

Student response

- 19: I know $5 + 5 = 10$. $10 + 9 = 19$

Find the value of each expression mentally.

$$5 + 9 + 5$$

$$25 + 9 + 5$$



Student response

- 19: I know $5 + 5 = 10$. $10 + 9 = 19$
- 39: I added $25 + 5 = 30$ to make a new ten. $30 + 9 = 39$

Find the value of each expression mentally.

$$5 + 9 + 5$$

$$25 + 9 + 5$$

$$25 + 15 + 19$$



Student response

- 19: I know $5 + 5 = 10$. $10 + 9 = 19$
- 39: I added $25 + 5 = 30$ to make a new ten. $30 + 9 = 39$
- 59: I added the tens first ($20 + 10 + 10 = 40$). Then I knew $5 + 5$ make another ten ($40 + (5 + 5) = 40 + 10 = 50$). Last I added 9 more ($50 + 9 = 59$).

Find the value of each expression mentally.

$$5 + 9 + 5$$

$$25 + 9 + 5$$

$$25 + 15 + 19$$

$$25 + 30 + 15 + 19$$



Student response

- 19: I know $5 + 5 = 10$. $10 + 9 = 19$
- 39: I added $25 + 5 = 30$ to make a new ten. $30 + 9 = 39$
- 59: I added the tens first ($20 + 10 + 10 = 40$). Then I knew $5 + 5$ make another ten ($40 + (5 + 5) = 40 + 10 = 50$). Last I added 9 more ($50 + 9 = 59$).
- 89: I added 25 and 15 first because I knew it was 40 from the last expression. Then I added 30 to get 70. Last I added 19.

How did you choose which numbers to add first?



Activity synthesis

- “How did you choose which numbers to add first?” (I looked for ways to make a ten. I looked for ways to use sums I’ve done before. I added tens first then I tried to make tens with the ones.)

2.3 Warm-up and Teaching Notes Discussion



Directions: Review the warm-up and teaching notes. With your team, discuss:

How do the teaching notes connect to the instructional rhythm and to the teachers in the roleplay?

What are student responsibilities during the warm-up?

How do the resources support shifts in instructional practice?