Talk in Math Class? You Bet!

Math Solutions
FOUNDED BY MARILYN BURNS

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Welcome!

• **Uniquely You**: Introduce yourselves at your tables and find three things (outside the education world) that you share.

• Be prepared to share one thing with the whole group.
Photo Courtesy of TJ Jemison
Why Math Talk™?

- Talk can reveal understanding and misunderstanding.
- Talk supports robust learning by boosting memory.
- Talk supports deeper reasoning.
- Talk supports language development.
- Talk supports development of social skills.

Number Talks
During the session, you will...

- Participate in number talks
- Analyze classroom video
- Consider how to implement and use number talks as part of math instruction in your schools and classrooms

Dr. Sherry Parrish, Author
Why Number Talks?

Current standards expect that students will be able to:

• Construct viable arguments and critique the reasoning of others

• Compute efficiently, flexibly, and accurately
I can't take 7 from 3 so I borrowed a ten. I made the one a zero and the 3 became a 13. 13 minus 7 is 6.

No you have a different amount, because you have a 2, 11, and 18. That's why you can minus the 6 and 9.
Computation Strategies

• **Efficiency**
  – The ability to choose an appropriate, expedient strategy

• **Flexibility**
  – The ability to use number relationships with ease in computation

• **Accuracy**
  – The ability to produce an accurate answer
Key Components of Number Talks

• Classroom environment and community
• Classroom discussions
• The teacher’s role
• The role of mental math
• Purposeful computation problems
Compute Mentally

70 - 34
Classroom Video: 70-34

A How are students using number relationships to solve the problem?

B How would you describe the classroom community and environment?

C Which strategies demonstrate accuracy, efficiency, and flexibility?

D How are the students’ strategies similar to or different from your strategy?
Classroom Video: 70-34

*Subtraction 70-34 from Number Talks: Helping Children Build Mental Math and Computation Strategies by Sherry Parrish (Sausalito: Math Solutions, 2010)*
Classroom Video: 70-34

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Four Procedures and Expectations

1. Select a designated location.

2. Provide appropriate wait time for most students to access the problem.

3. Accept, respect, and consider all answers.

4. Encourage student communication.
Sample Response Prompts

• I agree with _____ because _______.
• I do not understand___________. Can you explain this again?
• I disagree with _______ because_______.
• How did you decide__________?
• I am thinking about this problem differently. Here is the way I solved it:_________________.
• My way is different from______. Instead of_____,
  I_________________.
• Can you explain the difference between ________and __________?
Compute Mentally

32 \times 15
Video Focus

A How does the teacher facilitate the classroom discussion?

B What conditions are present that foster a safe learning community?

C How is student communication encouraged and valued?

D How would you describe the teacher’s role during the number talk?
5.2 Multiplication 32 x 15 from Number Talks: Helping Children Build Mental Math and Computation Strategies by Sherry Parrish (Sausalito: Math Solutions, 2010)
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Facilitating the Classroom Discussion

The teacher…

• Asks questions
• Uses wait time effectively
• Sustains a community in which students feel empowered to arrive at answers
Conditions Fostering a Safe Learning Community

- Student use of appropriate non-verbal signals
- Teacher use of wait time
- No judgment of student responses
- All answers and strategies accepted for consideration
Encouraging Student Communication

The teacher…

• Repeatedly asks, “Who has another way?”
• Makes student thinking public through scribing
• Revoices students’ strategies
Purposeful Computation Problems

• 20 x 4
  19 x 4

• 30 x 3
  29 x 3

• 40 x 6
  39 x 6

• 49 x 2

• 39 x 5
  65 – 18
  148 + 324
Implementing Number Talks

• What interests you about number talks?

• What steps will you take to implement number talks in your schools or classrooms?

• What support will you need to implement number talks?
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