September 2016

Ready, Set, Go

TTAC Region 4 at GMU

Success for All

A news brief linking people and resources to support quality practices in the education of all students

Number talks are ". . . classroom conversations around purposefully crafted computation problems . . . that students solve mentally" (Parrish, 2011). Number talks facilitate the development of computational fluency "while thinking and reasoning like mathematicians" (Math Perspectives, 2007). "During number talks, students are asked to communicate their thinking when presenting and justifying solutions . . . which leads to the development of more accurate, efficient, and flexible strategies" (Parrish, 2011).

Be READY to support students' development of computational fluency as they learn that they can make sense of mathematics in their own way, make mathematically convincing arguments, and critique and build on the ideas of their peers by incorporating number talks into daily instruction (Humphreys & Parker, 2015). A productive number talk may have these key components:

- "Keep it short (5-15 minutes).
- Do it every day.
- Give the students a lot of practice with the same kinds of problems.
- Encourage students to share and clarify their thinking.
- Teach intentionally.
- Create a safe and supportive environment.
- Name/Label the strategies that students use.
- Vary the number talk to meet the range of needs."

(Plummer, 2011)

SET the learning course by establishing a number talk routine that supports and stretches your students' understanding:

- Students put paper and pencil away.
- The teacher writes a problem on the board or document camera.

- Students solve the problem mentally and put their thumbs up when they have had enough time to think.
- The teacher invites students to share what they think the answer is and records each answer.
- Students are asked if anyone can explain how he or she figured the problem out.
- When volunteering to share their strategies, students defend their thinking. Teachers ask clarifying questions to help students communicate more clearly or to emphasize particular elements of the strategy.

(Humphreys & Parker, 2015)

For more information and ideas about doing number talks with students, GO to:

- From *youcubed at Stanford University*, this video featuring Dr. Jo Boaler contains information about number talks with some interesting different methods shared by Stanford students. https://www.youcubed.org/from-stanford-onlines-how-to-learn-math-for-teachers-and-parents-number-talks-2/
- The book *Number Talks: Helping Children Build Mental Math and Computations Strategies* by Sherry Parrish contains more than 850 purposefully designed number talks and a DVD featuring 19 number talks filmed in actual classrooms.
- Number Talks Quick Start Guide http://elemath.hallco.org/web/wp-content/uploads/2014/05/Number-Talks-Quick-Start-Guide.pdf – Developed by the Oakland (California) Unified School District, this document presents step-by-step instructions for structuring a number talk in a lesson.
- Inside Mathematics: Number Talks (http://goo.gl/aUAkWP) – From the Charles A. Dana Center at the University of Texas at Austin, this website provides an opportunity to explore videos of educators as they practice number talks with their students.
- Number Talks Toolkit (http://www.mathperspectives.com/num_talks.html) The Math Perspectives Teacher Development Center features number talk instructional tools.
- Implementing Number Talks Helpful Hints (https://goo.gl/bnUKyd) is a quick reference guide for implementing number talks from Math Perspectives Teacher Development Center which includes questions to ask and suggested strategies.
- Possible Number Talk Closing Scenarios (http://goo.gl/v47Pe9) - developed by the Elementary Math department of Hall County (Georgia) Schools, this document offers suggested closings to a number talk based on student responses and outcomes.

References and Resources:

- Boaler, J. (2016) *Mathematical Mindsets: Unleashing Students' Potential through Creative Math, Inspiring Messages and Innovative Teaching*. San Francisco, CA: Jossey-Bass.

- Humphreys, C. & Parker, R. (2015) *Making Number Talks Matter: Developing Mathematical Practices and Deepening Understanding, Grades 4-10.* Portland, ME: Stenhouse.
- Math Perspectives Teacher Development Center. (2007) *Number Talks*. P.O. Box 29418, Bellingham, WA 98228-9418.
- Parrish, S. (2010) *Number talks: Helping Children Build Mental Math and Computation Strategies, Grades K-5.* Sausalito, CA: Math Solutions.
- Parrish, S. (2011) "Number Talks Build Numerical Reasoning: Strengthen accuracy, efficiency, and flexibility with these mental math and computation strategies." *Teaching Children Mathematics.* Vol 18, No. 3, pp 198-206. Reston, VA: The National Council of Teachers of Mathematics (NCTM).
- Plummer, S. (2011) *Tips for Implementing Number Talks*. Bellingham, WA: Math Perspectives Teacher Development Center.

This news brief is a collaborative effort of the Virginia Department of Education Training and Technical Assistance Centers at George Mason University and James Madison University. This issue was prepared by the staff of the VDOE TTAC at George Mason University. For questions about content, please call 703-993-4496.