

Mathematics Monthly (K-5)

DECEMBER 2012/JANUARY 2013

Welcome to the third edition of Mathematics Monthly where you'll find a variety of suggestions, resources, and information to help you teach mathematics in grades K-5! December and January have been combined into this one issue. Again, please let me know if you have any suggestions for this newsletter.

Quick Tips from Math Solutions

Quick Tips are strategies to build fluency and help students become better decision-makers and problem solvers now and in the future. Central to the Common Core are the Standards for Mathematical Practice. These practices reflect the most advanced and innovative thinking on how students should interact with math content to master essential skills and their underlying concepts.

Make Sense of Problems & Persevere in Solving Them: Like most problems in life, there isn't always a checklist to tell us how we should begin to solve problems, or what resources we should reference to find a solution. Instead, we need to figure these things out on our own, or sometimes with the help of others. The same applies to math instruction.

Try This: Facilitate a classroom conversation around a grade appropriate yet challenging problem. Dialogue like this engages students and allows them to explore new ideas and strategies while creating a community of shared experience. Tips:

1. Ask students how they would describe the problem in their own words
2. Facilitate conversation to determine what is known and not known in the problem.
3. Inquire if there are any simpler ways to represent the problem.
4. Leverage manipulatives or use other visual aids to facilitate further discussion and understanding of the problem.

Let Students Explore! If they have adequate background to figure out how to make progress on a problem, then let them sort through how to tackle it. It's not about a right answer here—it's about letting students think about how they could solve a problem with what they know. This useful skill will help round out their problem-solving toolbox, connecting it to more advanced math and real-world applications for years to come.

Reason Abstractly and Quantitatively: Abstract and quantitative reasoning is a complex skill and a priority of the new Mathematical Practices. The challenge for classroom teachers is to re-think how you encourage your students to think differently about approaching math challenges.

Try This: Provide students with a grade-appropriate, open ended opportunity to consider how a problem can be deconstructed. For example, "The answer is 45. What equation(s) results in this answer?" There are many answers — $(5 + 10 + 20 + 10)$, (15×3) , $(60 - 15)$, etc. By leaving the question open ended, students are forced to think about the actual number 45, and consider how that quantity breaks apart and comes back together. Tips:

1. Always ask students to explain their results.
2. Use objects and diagrams to help visual learners.
3. Encourage group discussion so students visualize and understand alternatives.
4. When possible, avoid presenting a problem with only one solution.

Construct & Deconstruct! The goal is to help students to understand the relationship between part and whole. In this case, by encouraging students to truly grasp the meaning of quantities and how to represent them in multiple ways we are helping them to understand the relationship between the quantities and the solutions and even between the quantities themselves.

Source: mathsolutions.com

West Genesee Central
School District

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Resources

Edmodo is a great resource to use for getting and sharing information. If you have not yet joined the K-5 Mathematics group, please do. The code to join is 9fonhb. Thank you so much to those of you that have shared tips, websites, flipcharts, and more! Laura Hesler is currently putting together a database of all of the websites that have been previously shared by teachers so you will have them all in one convenient location. She is even categorizing them for you. A huge thank you to Laura for doing this! We (she) will update this periodically and send it out to you. Thanks to those of you that have shared these valuable websites!

But, in the enVision program . . .

I continue to get a lot of questions about the enVisions program concerning how closely we should be following it, if we should be purchasing the workbooks again this year, etc., so I want to try, again, to address some of the questions here. The enVisions workbooks were purchased as a resource, not a program. This was done because the current materials we were using were not aligned to the Common Core whatsoever, and we were not ready to purchase a new program for many reasons. These reasons were explained at the summer workshops as well as in the October newsletter (publishers aren't ready being one of the primary reasons, and neither are we.) While the enVisions materials are more closely aligned, they are far from perfect. We need to really understand what the standards are asking of us, then look to see if the enVisions materials support that. You will find that in many cases enVisions is a good fit, and in many cases, it is not and you will need to look elsewhere to find resources to help you. This is also true of some of the strategies you find in the enVisions workbooks. For example, enVisions may show you regrouping as a strategy for addition and subtraction in second grade, but the Common Core doesn't call for the traditional algorithm until 4th grade. It also may show the traditional long-division algorithm in 4th grade when the Common Core doesn't require that until 6th. Additionally, enVisions includes some things that do not need to be taught. So, we need to continue to muddle through things this year and really take the time to understand the standards. We will continue to use the parts of the enVisions workbooks that work for us, and continue to use Study Island and other resources, including each other, to supplement where needed until we are ready to possibly pilot and then purchase a program or additional resources. We will not be purchasing different workbooks in each school as we need to have consistency across the district.

The Progressions Documents (cont.)

The Common Core State Standards in mathematics were built on progressions: narrative documents describing the progression of a topic across a number of grade levels, informed both by research on children's cognitive development and by the logical structure of mathematics. These documents were spliced together and then sliced into grade level standards. From that point on the work focused on refining and revising the grade level standards. (source: www.engageny.org)

Engageny.org has a new look and for some reason I am unable to find the complete Progressions document on the site right now. I had previously copied them off for my own use however so I will be sending you the next document shortly. Kindergarten will be receiving the Counting & Cardinality document, and everyone will receive the Operations & Algebraic Thinking portion for their grade level and the grade level preceding. Again, this is not light reading, but it is important reading for you. Please take some time to read it when you receive it. Thank you.

Reminder:

Please remember to return the monthly mapping sheets to me by the 10th of each month. Some people are faithful about doing this which is greatly appreciated!

Kindergarten

I hope you can attend our next grade level workshop on January 22nd at 4:00. It will be held in the East Hill library. We will spend some time learning ways to use the Rekenrek as well as different number sense routines. We will also look ahead to the topics that will be taught in the 3rd quarter. If anyone has anything that they are willing to share and present to the group, please let me know before we leave for the holiday break. Thanks!

I just received a copy of a new book from the Responsive Classroom series. I know many people are familiar with doing morning meetings. There are four components to a morning meeting: Greeting, Sharing, Group Activity, and Morning Message. The book is titled, *Doing Math in Morning Meeting*. It has a lot of great, quick activities to do in the group activity portion of the morning meeting. I will try to pass along some ideas that seem to fit in with your curriculum. Here's one called "Number Lineup."

Prepare number cards beginning with 1 and continuing to the number of students you have. Shuffle the cards thoroughly. Give each student a card. At your signal, students line up in the order of their numbers as quickly as they can. Once the students get in numerical order, have them count from least to greatest. Then, pretend to be the north wind, blow on them, and have them "mess up" their line so they are no longer in order but are still in line. (You should model how to safely and carefully move when blown by the wind.) Have students switch numbers with someone close to them and signal them to line up in order again. Have the north wind blow again so that students "shuffle themselves." Challenge students to count down starting with the highest number. Once they say their number, they should sit down in the circle. Variation: Later in the year give them numbers that are spread out (2, 6, 12, 14, etc.,) and have the students line up in order.

1st Grade

Our next grade level workshop will be held in the East Hill library on January 15th at 4:00. Part of the workshop time will be devoted to creating questions for the Quarter 2 assessment. I think this will promote a better understanding of the standards that we are to teach. Please bring with you any materials that will assist you—your grade level standards documents, your laptop, etc. If anyone has anything they are willing to share and present to the group, please let me know sometime this month.

Here's an activity from the Morning Meeting book (see Kindergarten above) that you may want to try out. It's called, "Card Greeting." It reinforces a Kindergarten standard (K.CC.4d), counting, and problem-solving.

Prepare number cards, 1-10, enough for each student to have one. Either before or at the start of the meeting, give each student a card. All students stand in the circle. The first student counts the number of people represented by the number on his playing card and greets the last person counted. (For instance, if she has a 3, she counts three and greets the third person she counted.) She then sits down in the spot of the person she greeted. The person greeted then counts the number represented on his card, and so forth. Students who are seated should not be counted but can be acknowledged with a friendly face. As you near the end of the game (three people left standing), take student predictions about which person will be last to be greeted and why. Encourage students to use mathematical thinking as they make these predictions. For instance, if the greeting player has a 6, you could ask students to count six "in their heads" and see if they can figure out which of the two people will be greeted and who will be last.

2nd Grade

Our next grade level workshop will be held in the East Hill library on January 10th at 4:00. Part of the workshop time will be devoted to creating questions for the Quarter 2 assessment. Please bring with you any materials that will assist you—your grade level standards documents, your laptop, etc. If anyone has anything they are willing to share and present to the group, please let me know sometime this month. Thanks.

Engage NY (engageny.org) has recently posted a grade 2 curriculum module on place value, counting, and comparison of numbers to 1000. Caution: It is over 300 pages long! It does have some ideas in there that you may want to take a look at in your free time (ha!)

Here's an activity from the Morning Meeting book (see Kindergarten section) that you may want to try out. It's called, "Skip Greeting with Cards." It reinforces standard 2.NBT.5:

Give each student a number card. All students stand in a circle. The first student counts according to the number on her card and greets the last person counted. For instance, if the child has a 2, she counts two and greets the second person she counted. The two students add their two numbers to figure out their sum. The student who was counting and greeting then sits down in the spot of the person she greeted. The person greeted then counts the number represented on his card and so forth. Once students are seated, they should not be counted but can be acknowledged with a friendly face. Alert the other students to be listening for which pair has the greatest sum, least sum, or equal sums. At the end of the greeting, call on several students to share this information.

3rd Grade

Our next grade level workshop will be held in the East Hill library on January 9th at 4:00. Part of the workshop time will be devoted to creating questions for the Quarter 2 assessment. Please bring with you any materials that will assist you—your grade level standards documents, your laptop, etc. If anyone has anything they are willing to share and present to the group, please let me know sometime this month.

Hopefully you have received the testing guide for the NYS math assessment. It is important that you read through it sooner rather than later as it has implications for your instruction. While we were already aware of the clusters that should receive more emphasis (major, supporting, and additional), the guide actually specifies individual standards that will be emphasized, i.e., assessed with greater emphasis/frequency. These standards include: 3.OA.3, 3.OA.8, 3.NF.3, and 3.MD.7. The guide also notes that most test questions will target more than one standard. Some questions will assess an entire cluster and therefore will test 3rd grade standards as well as standards from past grades. We will spend some time in our workshop in January taking a closer look at these particular standards. Perhaps we (you) can share different approaches to teaching these standards. A last note from the testing guide—all students will need rulers for all sessions of the test. It would behoove you to make sure you have a classroom set now and give students practice with the ruler they will use on the test.

1st Quarter Assessments

Please don't forget to return your 1st Quarter Assessment Feedback sheet to me. Your item analysis isn't required—that was for your use, but if you're willing to share it, I'll take that too! Thanks!

4th Grade

Our next grade level workshop will be held in the East Hill library on January 8th at 4:00. Part of the workshop time will be devoted to creating questions for the Quarter 2 assessment. Please bring with you any materials that will assist you—your grade level standards documents, your laptop, etc. If anyone has anything they are willing to share and present to the group, please let me know sometime this month.

Hopefully you have received the testing guide for the NYS math assessment. If you haven't received it let me know and I will send you the link. It is important that you read through it sooner rather than later as it has implications for your instruction. While we were already aware of the clusters that should receive more emphasis (major, supporting, and additional), the guide actually specifies individual standards that will be emphasized, i.e., assessed with greater emphasis/frequency. These standards include: 4.OA.2, 4.NBT.5, 4.NF.3, 4.NF.4, 4.NF.6, and 4.NF.7. The guide also notes that most test questions will target more than one standard. Some questions will assess an entire cluster and therefore will test 4th grade standards as well as standards from past grades. We will spend some time in our workshop in January taking a closer look at these particular standards. We (you) can perhaps share different approaches to teaching these standards. A last note from the testing guide—all students will need a ruler and protractor for all sessions of the test. Please make sure you have classroom sets of these tools.

Grade Level Workshops

| | |
|--------------|------|
| Kindergarten | 1/22 |
| 1st Grade | 1/15 |
| 2nd Grade | 1/10 |
| 3rd Grade | 1/9 |
| 4th Grade | 1/8 |
| 5th Grade | 1/3 |

All workshops will be held at East Hill from 4:00 - 5:30.

5th Grade

Our next grade level workshop will be held in the East Hill library on January 3rd at 4:00. Part of the workshop time will be devoted to creating questions for the Quarter 2 assessment. Please bring with you any materials that will assist you—your grade level standards documents, your laptop, etc. If anyone has anything they are willing to share and present to the group, please let me know sometime this month.

Hopefully you have received the testing guide for the NYS math assessment. It is important that you read through it sooner rather than later as it has implications for your instruction. While we were already aware of the clusters that should receive more emphasis (major, supporting, and additional), the guide actually specifies individual standards that will be emphasized, i.e., assessed with greater emphasis/frequency. These standards include: 5.NBT.5, 5.NBT.6, 5.NBT.7, 5.NF.2, 5.NF.6, and 5.NF.7. The guide also notes that most test questions will target more than one standard. Some questions will assess an entire cluster and therefore will test 5th grade standards as well as standards from past grades. We will also spend some time in our workshop in January taking a closer look at these particular standards. We can share different approaches to teaching these standards. A last note from the testing guide—all students will need rulers and protractors for all sessions of the test. Please make sure you have classroom sets of these tools now.

Have a Happy Holiday if I don't see you before then, and even if I do!