**Some thoughts on helping parents understand what we’re doing in math and giving parents some practical ideas for really helping their children in math**

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I am often asked by teachers and administrators, “Yes, but what about the parents?” This is usually shorthand for things like “How can we convince them that the Common Core is best for their children?”, “How can we better help them understand the math we are asking their children to do?” and “How can we recruit parents to help their children without them resorting to just telling their children *how* to get answers?”

I think that the answers are **a school-wide written vision of the teaching and learning of mathematics, ongoing communication, and practical ideas for helping parents make mathematics commonplace in their children’s lives.** Let’s look at each of these in turn.

**Vision.** I am often surprised by the fact that nearly all schools and districts have vision and/or philosophy statements, but very few schools or districts have vision or philosophy statements about the teaching and learning of mathematics. Such statements, when collaboratively crafted help to focus everyone – students, teachers, administrators *and* parents on the direction the school or district is taking for mathematics and the reasons why. Here is the introduction to one such vision statement:

It is a core mission of this school that every student be prepared to be a confident user of mathematics, a powerful quantitative thinker, and a productive problem solver. This mission can only be achieved within a mathematics program that balances mathematical skills, concepts, and applications with instruction that emphasizes explanation, justification, and number sense. That is, our school is committed to, a mathematics program built on teaching and learning that actively engages students in experiences that stimulate curiosity, inquiry, joy and deep understanding of the mathematics outlined in the Common Core.

While an effective mathematics program must be *guided* by a clear set of content standards, it must be *grounded* by a shared vision of teaching and learning that is evident in the ongoing interactions among students, teachers and the mathematics found in every mathematics lesson.

The adults must consistently expect and support our students to:

* Persevere with solving interesting problems,
* Reason abstractly and quantitatively,
* Construct viable arguments,
* Critique the reasoning of others, and
* Model with mathematics.

Thus, teachers must consistently and expertly:

* Respond to most student answers with “why?”, “how do you know that?”, or “can you explain your thinking?”;
* Craft instruction around powerful tasks that promote reasoning and problem solving and promote productive struggle;
* Elicit, and celebrate alternative approaches to solving mathematics problems conveying to students that we value **understanding** and *not* just memorizing the right procedure to get the one right answer;
* Use and connect multiple representations – for example, models, diagrams, number lines, tables and graphs, as well as symbols – of all mathematical work to support the visualization of skills and concepts;
* Take every opportunity to develop number sense by asking for, and justifying, estimates, mental calculations and equivalent forms of numbers;
* Create language-rich classrooms that emphasize vocabulary, explanations and solutions in the context of meaningful discourse among students;
* Embed the mathematical content students are learning in real world contexts
* Devote the last portion of every lesson to formative assessment, for example, an exit slip, to assess student understanding.

When parents ask teachers why they are doing this or that, teachers and administrators can proudly and confidently turn to the vision and explain that these decisions are not only in alignment with the school’s vision, but are in the best interests of students.

**Communication.** When we think about it, when we teach math to children in exactly the same way it was taught to their parents there is delight from the parents for whom math worked (“it worked for me, so obviously it is what will work for my children”) and dismay from the parents for whom math did not work (“I hated it, and unless it is taught a lot better, my children are likely to hate it”). Conversely, when we teach math is rather different ways from how parents were taught, the delight and display simply switch audiences. That is why is it so essential that we are clear about what we are doing and why we are doing it. I find it helpful to:

* Ask parents to compare and contrast the math that they did in school to the math they do as citizens, consumers and workers. Even the hard core engineers end up admitting that they would be in deep trouble without the technology they use and their understanding of what button to press when. These discussions help parents understand that the world has changed dramatically and the math their children need has changed accordingly.
* Provide weekly problems for parents to tackle with their children that present the side of mathematics that requires perseverance, reasoning and making arguments;
* Send monthly letters home to parents explaining and describing the mathematics they can expect their children to be doing during the next month. Such letters help parents understand how and why we are using pictures and other representations and how and why we are focusing on a range of alternative approaches to doing mathematics.

Parents who feel in the loop and parents who grow to trust what their childrens’ teachers are doing are far less likely to protest when things don’t look the same as they did twenty and thirty years ago.

**Making math commonplace.** Finally, we need to curb parents’ natural inclination to want to help their children and “explain” how to do the math. Unfortunately, as we all know, this is often a recipe for confusion or disaster. It is also why, instead of asking parents to help their children, I find it most useful to ask parents to simply do everything they can – at the restaurant, the gas pump, the dinner table, the kitchen, the grocery store, etc. – to make the mathematics of daily life commonplace for their children.

Here are some examples of ideas that parents can use to best support the mathematical development of their children by making mathematics commonplace and fun whenever and wherever it occurs naturally in our daily lives. Questions can be simple and informal and answers can be responded to with “How did you get that?” or “Share with us your thinking?” or “Could you solve that in a different way?” For example:

**At McDonalds or any other fast food restaurant** – in line or at the drive-thru:

* About how much do you think your order will cost?
* What’s the least and most expensive reasonable meal we could order?
* Can we all get a meal and spend less than $20? How?
* About how much should the tax be?
* Is a Happy Meal a good deal?
* Does it make sense to order large soda if there are free refills?

**At the Restaurant:**

* You can spend up to $8 without going over. What could you order?
* So about how much do you think the bill will be?
* What’s the most expensive reasonable meal we could order?
* How much should we tip?

**At the gas station and on a trip:**

* So about how many miles per gallon are we getting?
* So if gas is $4.09/gallon, about how much will we spend?
* If we only have $30, how many gallons of gas can we get?
* About how much longer should it take us to there (looking at mileage signs)?
* If it’s 1:30 now, when do you think we’ll get there?

**At the grocery store:**

* How much do you think we just spent (looking at a full shopping cart)?
* What fractional part of the items is taxable (looking at the register tape)?
* About how much do we pay per item in the cart?
* What should the scale say if we order 1½ pounds of cheese?
* About how much will three-quarters of a pound of ham cost?
* What’s the unit price? Which is the best buy?
* What does it say on the nutrition label?

**At the bank:**

* What’s a withdrawal? What’s a deposit? Which is addition and which is subtraction?
* If I have $\_\_\_\_\_, how much will I have after a deposit/withdraw $\_\_\_\_\_\_?

**In the kitchen:**

* Recipes (Can you measure that much out?, How much more or less? Suppose we doubled/halved the recipe?)
* Measuring cups and spoons
* Ounces, cups, pints, quarts and gallons, ounces and pounds

**From the newspaper:**

* Graphs and tables
* Sports statistics
* Scavenger hunts (for percents, for numbers greater than 1000, etc.)

**Just for fun anytime:**

* About how big is that? (height, width, weight, capacity)
* About how many would fit? (For example: How many dogs could be fit in the car? How many McNuggets boxes could fit in the trunk? About how people could fit in this room?

**Powerful games:**

* Yahtzee
* Cribbage
* Card games (for example, Yahtzee, Uno, 24 and Set)

Those are some brief thoughts on how we can help our students’ parents and how they can best help us and their children.