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[Aug 2, 12:34 PM] Guest8688: Good afternoon Jamie. Jennifer from Ontario, Canada here.

[Aug 2, 12:34 PM] jduncan: Hi Jennifer!

[Aug 2, 12:34 PM] MathDaddy47: Guessing, when paired with counting, can lead to the ability to estimate.

[Aug 2, 12:35 PM] Guest1681: We "estimate" words by using context clues to help us discover meaning.

[Aug 2, 12:35 PM] jduncan: Nice MathDaddy47! Definitely when paired with something more mathematical

[Aug 2, 12:36 PM] jduncan: Nice 1681! We use what we know to help figure out what we don't know

[Aug 2, 12:36 PM] Guest8869: Jumping in a bit late. Glad to be here!

[Aug 2, 12:36 PM] jduncan: Any estimates for the m&#amp;m's?

[Aug 2, 12:36 PM] jduncan: Welcome 8869!

[Aug 2, 12:36 PM] Guest8489: 9

[Aug 2, 12:36 PM] Guest1681: 12

[Aug 2, 12:37 PM] Guest8489: 2 is too low. 25 is too high

[Aug 2, 12:37 PM] Guest1681: 8

[Aug 2, 12:37 PM] MathDaddy47: Low - 5 High - 30 Est - 17

[Aug 2, 12:37 PM] jduncan: Nice with the too low and too high 8489! I wonder how that helps students with their reasoning???

[Aug 2, 12:37 PM] MathDaddy47: Oh, yeah. PEANUT M&#amp;Ms!!!

[Aug 2, 12:38 PM] Christina Tondevold: \*Just a note that some people may be behind...the video starts when they come to the page.

[Aug 2, 12:38 PM] jduncan: Thanks Christina!

[Aug 2, 12:39 PM] Tracy Roeser Casey: Hi Jamie! Thanks for doing this! I was excited to see you as a presenter!

[Aug 2, 12:39 PM] jduncan: Hi Tracy! :)

[Aug 2, 12:40 PM] MathDaddy47: Anticipation is emotional, which produces endorphins in the brain.

[Aug 2, 12:40 PM] jduncan: Interesting Math Daddy 47!

[Aug 2, 12:40 PM] zennedmath: MP#4

[Aug 2, 12:41 PM] jduncan: Any others SMP's?

[Aug 2, 12:41 PM] jenbell21: Woo Hoo! Yeah Jamie! :) Thrilled to continue to learn from you! Thank you!

[Aug 2, 12:41 PM] jduncan: Hi Jen! :)

[Aug 2, 12:42 PM] Bobby Song: 16

[Aug 2, 12:42 PM] Bobby Song: 8

[Aug 2, 12:44 PM] Diane Gunlock: Guessing just writing or saying a number, estimating using logical thinking with what you know.

[Aug 2, 12:44 PM] jduncan: Nice, Diane!

[Aug 2, 12:45 PM] Diane Gunlock: Well guessing at a word rather than using beginning sound, context etc.

[Aug 2, 12:46 PM] jenbell21: 14 M&#amp;M's - just right, too low 4, too high 30.

[Aug 2, 12:46 PM] jenbell21: Ready to revise my estimate! :) 9

[Aug 2, 12:47 PM] jduncan: What is the point of having a brave too low and too high?

[Aug 2, 12:47 PM] James Eliot: That is not a fun size of M&#amp;Ms

[Aug 2, 12:47 PM] jduncan: Are you sure, James?

[Aug 2, 12:47 PM] James Eliot: I need more

[Aug 2, 12:47 PM] Diane Gunlock: Was thinking 20 until I saw her pick up the bag.

[Aug 2, 12:49 PM] Guest8869: not a whole lot of estimating.. maybe a handful of times

[Aug 2, 12:49 PM] jduncan: Right? 8869 This is such a huge missed opportunity!

[Aug 2, 12:50 PM] Guest8869: they expect the kids to come in with number sense! they don't spend time to build it first. Our first unit is counting on the subtract!

[Aug 2, 12:51 PM] jduncan: Who do you mean by they? Publishers?

[Aug 2, 12:51 PM] Guest8869: Yes

[Aug 2, 12:51 PM] jduncan: So what does that tell us about how we use our pub. curriculum?

[Aug 2, 12:52 PM] Guest3988: First grade publisher starts with understanding addition

[Aug 2, 12:53 PM] MathDaddy47: They all shift on the # line and maybe get more brave.

[Aug 2, 12:54 PM] jduncan: What do you think you should start with, 3988?

[Aug 2, 12:54 PM] Guest3988: brave too low 7, just right 18, too high 22

[Aug 2, 12:55 PM] jduncan: @MathDaddy47 that moment when students notice that they all shift is a great moment for an awesome discussion about why that happens

[Aug 2, 12:55 PM] Guest1681: King size of course!

[Aug 2, 12:55 PM] Guest3988: Should start with making sure they have number sense to 20.

[Aug 2, 12:55 PM] Guest8869: We get caught up in a pacing guide, "I have to get these done by November." We need to be brave enough to set it aside and take time to develop number sense.

[Aug 2, 12:55 PM] jduncan: How does the reasoning from estimation carry over into other parts of the day?

[Aug 2, 12:56 PM] Christina Tondevold: Love it, 8869!!

[Aug 2, 12:56 PM] jduncan: @Guest8869 I love it!

[Aug 2, 12:57 PM] Tracy Roeser Casey: I think it will help kiddos think to help figuring things out.

[Aug 2, 12:57 PM] jduncan: So how do we do that? We study the standards and prove it.

[Aug 2, 12:57 PM] jduncan: I teach first, and we begin with understanding equal & equivalence.

[Aug 2, 12:59 PM] ColetteWhite25: Love counting the m&ms in groups of five. Important to use visual, 10 frames to reinforce number sense.

[Aug 2, 12:59 PM] Myra Collins: I think 5 is too low, 25 is too high and 14 is about right. Then I revised it to 12 after the package was opened.

[Aug 2, 12:59 PM] jduncan: Yep, Colette. That was not an accident

[Aug 2, 1:00 PM] Guest8869: It would be fun to do a follow up activity with another candy like Skittles.

[Aug 2, 1:00 PM] jduncan: Yes @guest8869!

[Aug 2, 1:01 PM] jduncan: You definitely want to plan sequential tasks that build on each other!

[Aug 2, 1:03 PM] Guest1681: From here couldn't we provide three or more different size/shape containers and a bag of marbles. Use this as a station where kids set up their own number lines and investigate estimations with varying size containers?

[Aug 2, 1:03 PM] Guest8869: We've done a whole class science project on comparing different chips bags of the same weight. We always start with estimating how many chips are in each bag. I look forward to incorporating the too high/too low and reasonable estimate.

[Aug 2, 1:04 PM] jduncan: Totally 1681!

[Aug 2, 1:05 PM] Myra Collins: Whether you use Jamie's ideas or Three Act Tasks, the quiet focus on estimation through strategic questions is great.

[Aug 2, 1:05 PM] jduncan: I'm glad you can use the too low and too high 8869!

[Aug 2, 1:05 PM] jduncan: I love how science is connecting to what we are doing in mathematics!

[Aug 2, 1:06 PM] Myra Collins: My first graders always started the year with lots of zeroes. A tiny jar of M&Ms might be estimated to hold 100, 1000 or more! But practice and discussion over the course of the year helped them make more reasonable estimates.

[Aug 2, 1:07 PM] jduncan: Discourse is definitely key!

[Aug 2, 1:07 PM] jduncan: It always is!

[Aug 2, 1:07 PM] Myra Collins: I've only seen it in measurement the past few years. I think number sense is sadly lacking most of the time.

[Aug 2, 1:07 PM] LMNmath: I think I missed this: when do you introduce the "brave too low" and "brave too high"?

[Aug 2, 1:08 PM] jduncan: Me to Myra! Only during the VERY SHORT estimation unit

[Aug 2, 1:08 PM] Guest1681: This also gives tangible meaning to the words "reasonable" and "non-reasonable". Those words confuse my 4th graders. What is a reasonable estimation? Sometimes they just can't tell. I really like this activity for my struggling students as well as a review for others. Thank you! Great information.

[Aug 2, 1:09 PM] jduncan: @LMNmath I usually start with the just right - only until we've done it a handful of times, then we add the brave too low and too high. Developing the understanding of the too low and too high takes time. The visual model of the number line is super helpful

[Aug 2, 1:10 PM] Tracy Roeser Casey: So do you have any numbers on the string?

[Aug 2, 1:10 PM] jduncan: You could always do the opposite and begin with the too low and too high to rule out impossibilities, then incorporate the just right

[Aug 2, 1:10 PM] jduncan: I don't have any numbers on the number line when we begin

[Aug 2, 1:11 PM] jduncan: I let the students put their numbers up and then take time to adjust

[Aug 2, 1:11 PM] Tracy Roeser Casey: Would you recommend that I make a number line with my kinders?

[Aug 2, 1:12 PM] jduncan: Yes, but I would build it with them at the beginning of the year, before you jump in and use it.

[Aug 2, 1:12 PM] Tracy Roeser Casey: Great idea! Build it up together! Love it!

[Aug 2, 1:12 PM] mrsllkinders: would be be a true numberline or is is a number path?

[Aug 2, 1:13 PM] mrsllkinders: should I call it a number line in front of kids

[Aug 2, 1:13 PM] jduncan: in kinder I would begin with a number path

[Aug 2, 1:13 PM] Tracy Roeser Casey: More of a number path I would think!

[Aug 2, 1:13 PM] jduncan: then progress toward an open number line

[Aug 2, 1:13 PM] mrsllkinders: the string with the index cards- love!

[Aug 2, 1:13 PM] Christina Tondevoid: Numberless word problems:  
<https://bstockus.wordpress.com/numberless-word-problems/>

[Aug 2, 1:13 PM] jduncan: When I used a number path we stuck post its on it

[Aug 2, 1:14 PM] jduncan: Thank you Christina@

[Aug 2, 1:14 PM] mrsllkinders: i thouht about post its as well- but figured the index cards slide better!

[Aug 2, 1:14 PM] jduncan: Here is a link to Ryan's site for the tasks:<http://visiblethinking.weebly.com/daily-routines.html>

[Aug 2, 1:15 PM] ColetteWhite25: Can't wait to use the visible thinking weebly! Thank you, Jamie!

[Aug 2, 1:15 PM] Tracy Roeser Casey: Awesome job Jamie!

[Aug 2, 1:15 PM] jduncan: You're welcome!

[Aug 2, 1:15 PM] jduncan: Thank you

[Aug 2, 1:15 PM] LMNmath: I think I missed this: when do you introduce the "brave too low" and "brave too high"?

[Aug 2, 1:17 PM] LMNmath: Another great one Christina! Thank you!

[Aug 2, 1:22 PM] Guest8459: I am so excited to start a new school year with math.

[Aug 2, 1:53 PM] Guest5497: 4, 24 I've had them before, so I know 4 is too low, and I've never had 24!

[Aug 3, 8:42 AM] Bonnie Cassivi Murphy: 22 m ms

[Aug 3, 8:43 AM] Bonnie Cassivi Murphy: too high 12

[Aug 3, 8:51 AM] Bonnie Cassivi Murphy: We do estimating monthly or biweekly in our 3 year old program.

[Aug 3, 8:53 AM] Bonnie Cassivi Murphy: Love the BRAVE idea!!!

[Aug 3, 8:57 AM] Bonnie Cassivi Murphy: just right 22, brave high 25, too low 19

[Aug 3, 9:15 AM] Bonnie Cassivi Murphy: LOVE the lego block ideas. Great visuall

[Aug 6, 11:29 AM] Guest2192 - : Hi!

[Aug 6, 4:52 PM] Guest9558: I love the slide on number sense and conversation about how it doesn't happen over a week.

[Aug 6, 5:01 PM] Guest9558: Love the number line activity. So much math can come from this one display!