

Making Math More Social

ZACHARY CHAMPAGNE

zakchamp.com |  [@zakchamp](https://twitter.com/zakchamp) | zacharychampagne@gmail.com



A disclaimer...



Math is for Everyone.



**What things do you do to get
kids to talk to each other in
math class?**



The Progression of My Thinking

- How do we make math class less teacher driven?
- How do we get kids to talk?
- How do we ask the right questions?
- How do we, as teachers, become better listeners?
- How do we help kids talk and listen to each other?
- How do kids “actually” talk about their math ideas?
- How do we create social math classrooms?



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- How do we ask the right questions?**
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- How do we help kids talk and listen to each other?
- How do kids “really” talk about their math ideas?**
- How do we create social math classrooms?**



What is a “Social” Classroom?

A classroom where:

- kids talk (or write) about their mathematical ideas (and those ideas related to the context or content of the problem) and those ideas are deemed as valuable.

- the talking and writing about mathematics happens, with or without the teacher, and between and among a single student, a small group of students, or the whole class.



**For math to be more
social, we need to ask
the right questions.**



Some Right Questions

- Questions you don't know the answer to
 - Questions with no wrong answers
 - Questions with lots of right answers



Questions You Don't Know the Answer to

- How did you get that?
- What relationships do you see?
- What other strategies might work?



Questions You Don't Know the Answer to

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Number Talk

$119 + 119$

$139 + 139$

$199 + 199$



Number Talk

4 Voz fuerte
3 Voz alta
2 Voz normal
1 Sussura
0 Silencio

238
119 + 119
Emerson (238)
9 + 9 = 18 → 38
10 + 10 = 20 → 238
100 + 100 = 200

278
139 + 139
Enzo
100 + 100 = 200 → 260
30 + 30 = 60 → 260
9 + 9 = 18 → 278


238
Cody
120 + 120 = 240 → 2
119 + 119 = 238

278
Liam
130 + 130 = 260 → 278
9 + 9 = 18

238
Ruby (238)
9 + 9 = 18 → 38
10 × 2 = 20 → 238
100 ÷ 2 = 200

278
Cody (278)
140 + 140 = 280
139 + 139 = 278

PIZARRA



NEVER
LOSE SOMEONE
STOP YELLING
FROM BEING
YOURSELF
LIVED

ONE WORLD

We are all better because you are here. ♥

kindness MATTER

we open are minds and hearts so we can discover the knowledge

Every single device is going to be better.

that you do so much

BLANK



How Did You Get That?

139 + 139

Liam

$$130 + 130 = 260$$
$$9 + 9 = 18$$

> 278

Cody 278

$$140 + 140 = 280$$
$$139 + 139 = 278 \downarrow$$

What Words Do Kids Use?

Liam: I was gonna do what Enzo did, but I could do two steps at the same time. So, I did $130 + 130$, then I doubled the 9s.

Mr. Zak: How did you get 278?

Liam: I put them together.

Liam

$$\begin{array}{l} 130 + 130 = 260 \\ 9 + 9 = 18 \end{array} \rightarrow 278$$

Cody: I went up to 140 and doubled it to get 280. Then I had to go back 2.

Mr. Zak: Why did you go back 2?

Cody: Ummmm...I don't really know.

Mr. Zak: Where do you see the 2 you went back?

Cody: I don't know, I just did it.

Cody 278

$$\begin{array}{l} 140 + 140 = 280 \\ 139 + 139 = 278 \end{array}$$



Story Problem Routine



Mr. Zak has 16 pieces of candy.

Ms. Claire has 9 pieces of candy.



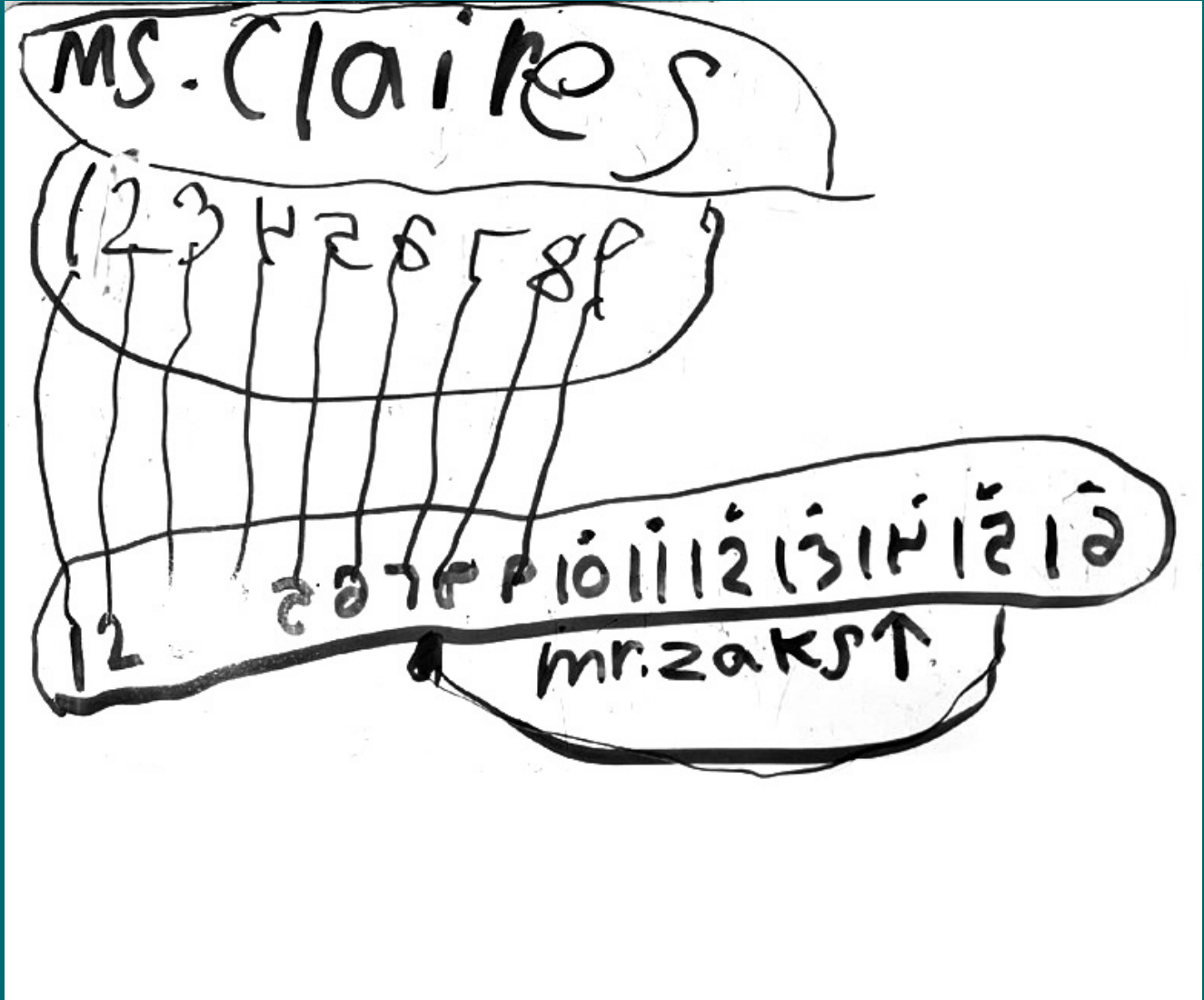
**Mr. Zak has 16 pieces of candy.
Ms. Claire has 9 pieces of candy.**

**How many more pieces of candy does
Mr. Zak have than Ms. Claire?**



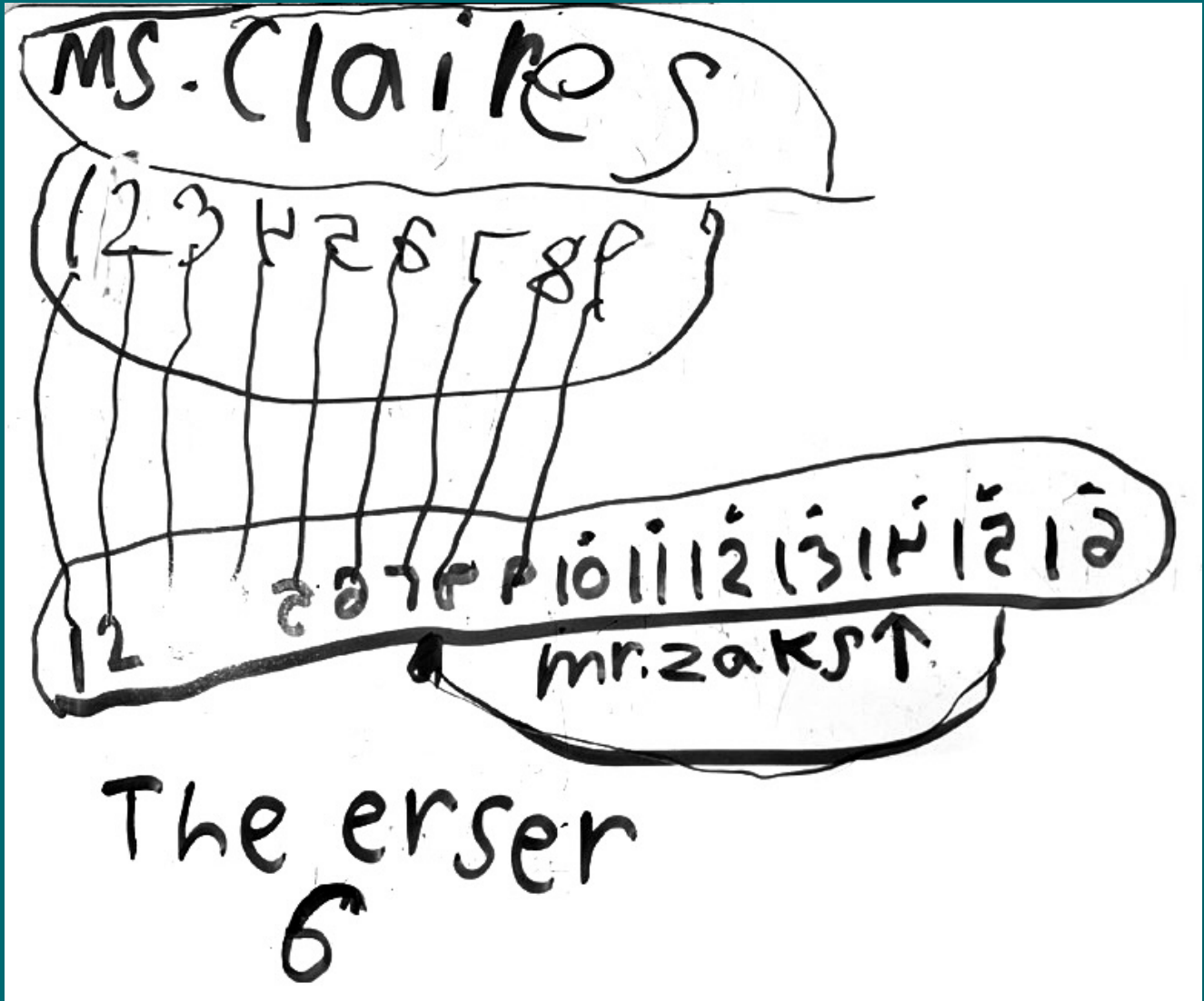
What are some ways that 1st grade students might approach this story problem?





The eraser
6





if $10+6=16$ then $p+z$ must $=16$
because you just take
one away from the 10
so that means that
you add one more
to the 6. answer 7



if it was ten it
would be 6 but its
nighn so it is 7

Great
Job



What Words Do Kids Use?

They both have 10 and 6.

They both have 7 as the answer.

Abby did two problems $10 + 6$ and $9 + 7$.

Abby used take away.

They both used numbers that weren't in the story.



Questions With No Wrong Answers

Which one doesn't belong?

Would you rather?

What is an estimate that is too low/too high?



Questions With No Wrong Answers

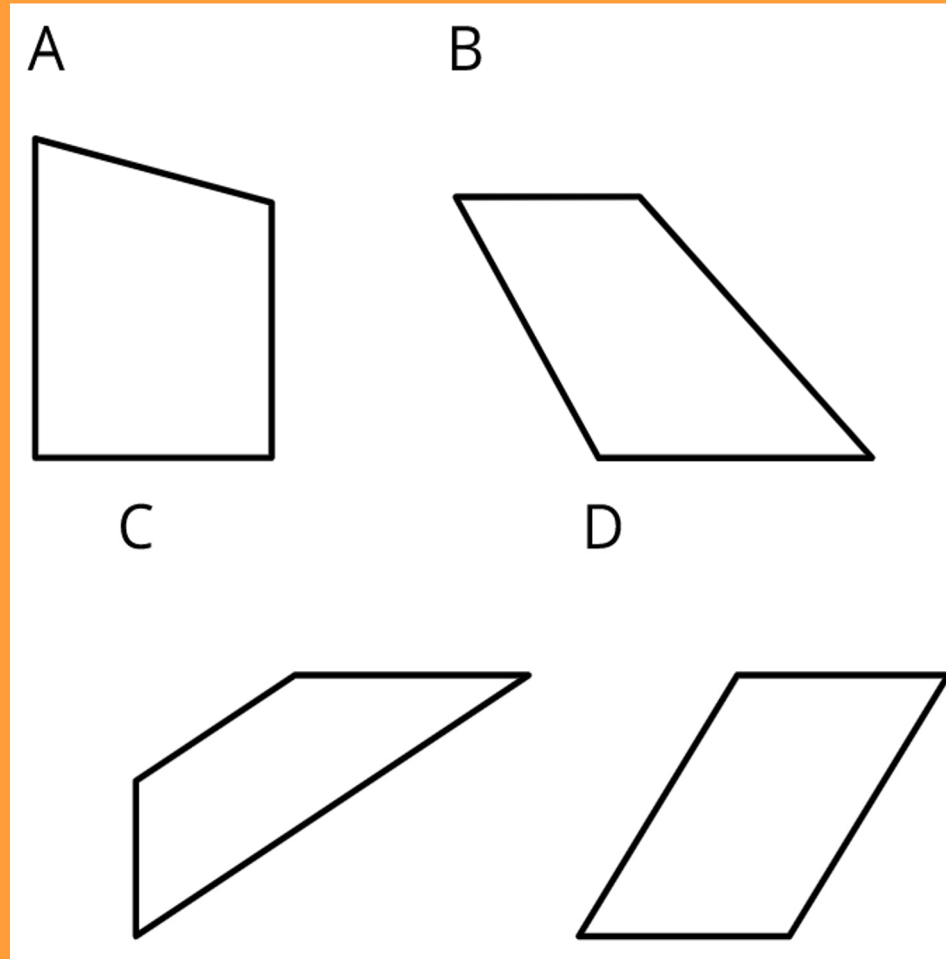
Which one doesn't belong?

Would you rather?

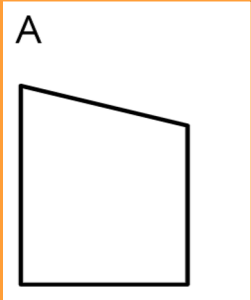
What is an estimate that is too low/too high?



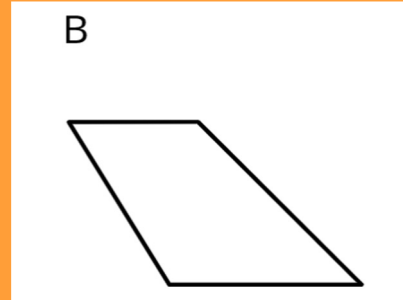
Which One Doesn't Belong?



What Words Do Kids Use?



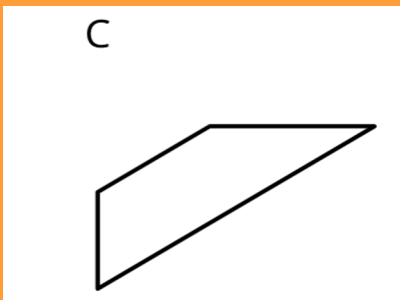
“Not a flat top”



“Tilted to the left”

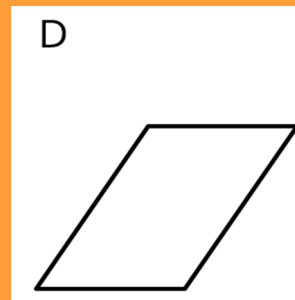
“Right is more slanted than the left”

“Corners more smashed”



“Most slanted”

“Least rectangular”



“Most normal”



When we add OUR words to a kid's idea, are we sending the message that the way they said it isn't correct?



When we add OUR words to a kid's idea, are we sending the message that the way they said it isn't correct?

Or even worse, are we ignoring that at times their language is in fact better than ours?"



Dr. Barbara Blanke and Kimberly Kelly

“Remember that
someone’s ideas
are a part of who
they are.”



Questions With Lots of Right Answers

What do you notice?/What do you wonder?

How many?

What information do you need to solve this problem?

What do you know about _____?



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What Do You Notice? What Do You Wonder?



Main Question: How Many Peaches Are in the Box?

Estimates

What information do you need to solve the problem?



What Information Do You Need to Solve This Problem?



What Information Do You Need to Solve This Problem?

Enzo: You could tell us the total weight of the peaches and IF the peaches weighed the same amount, we would need the weight of every peach.

Mr. Zak: What would you do then?

Enzo: Just divide.





All the peaches from the large basket

GFletchy



Which Math is More Important?

Enzo's Thinking



Determining the number of peaches

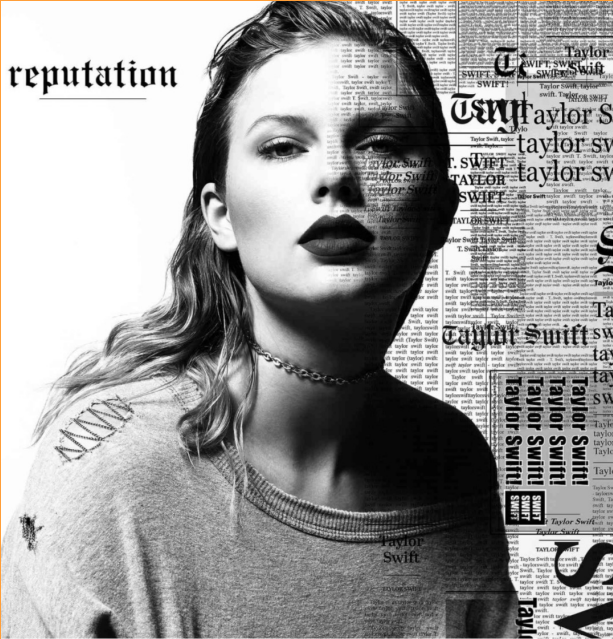


Which Record is More Important?

Lover



Reputation



Which Record is More Important?

Evermore



Folklore



Which Math is More Important?

Enzo's Thinking



Determining the number of peaches



All the peaches from the large basket

GFletchy



What Does Participation Look Like in a Social Classroom?

- It's NOT always sharing your ideas out loud
 - Squeezing all the math out of an idea
 - Participating as a listener



What Structures Help Kids Talk With Each Other?

- Quiet think time
- Turn and talk structure
- Don't just share answers...share ideas
- Comparing strategies
- What do you think about _____'s work?
- Authentic and known questions



**Being social is the
way we learn.**





THANK YOU!

ZACHARY CHAMPAGNE

zakchamp.com |  @zakchamp

zacharychampagne@gmail.com