

The Teaching and Learning of Mathematics is About Ideas

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A Disclaimer...





Be Patient



**The teaching and learning
of mathematics is a long
game.**



Go Slow To Go Fast



The Teaching and Learning of Mathematics is NOT About Right Answers





Tweet

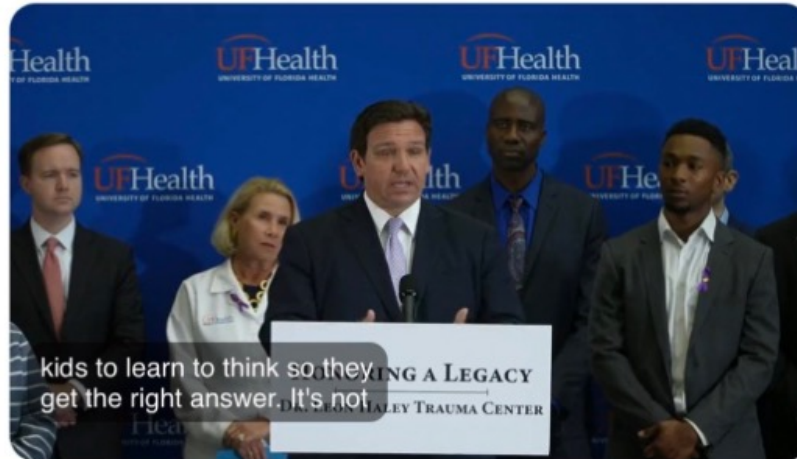
↻ Florida Department of Education Retweeted



Ron DeSantis ✓
@GovRonDeSantis



Math is about getting the right answer,
not about feelings or ideologies.
In Florida, we will be educating our
children, not indoctrinating them.



8:35 PM · Apr 20, 2022 from Florida, USA · Twitter for iPhone



When my students are learning
mathematics, the answer is less
critical.

It only tells me one thing.

How a student arrives at that
answer tells me LOTS of things.



Listen



How Do We Become Better Listeners?

- Ask questions you don't know the answer to
- Get away from the board
- Allow for more student talk
- Provide pause



Writing Instruction



**It's about the writer, not
the piece of writing.**

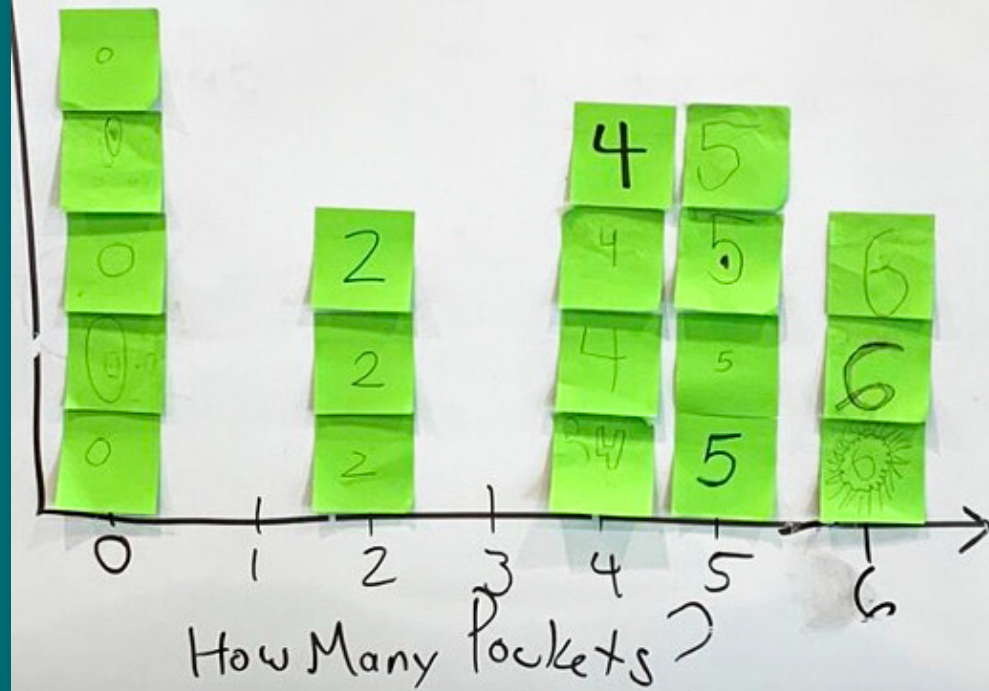
**It's about the
mathematician, not the
math problem.**



Forgive



How Many Pockets?



KEIRA: I don't want to do this today.

ME: Well, this is what we are doing.

KEIRA: Okay {Begrudgingly goes back to her seat}

A few minutes later...

KEIRA: I don't want to do this today.



What would you say and/or
do?



KEIRA: I don't want to do this today.

ME: Well, this is what we are doing.

KEIRA: Okay {Begrudgingly goes back to her seat}

A few minutes later...

KEIRA: I don't want to do this today.

ME: Keira, you told me that, but this is what we are doing. Can you please get to work?



The next day...



Part Two



Kids Have Important Mathematical Ideas



How Do We Determine What Important Mathematical Ideas Our Students Have?



Story Problem Routine



A farm is selling eggs by the dozen.

You buy 7 dozen eggs.



A farm is selling eggs by the dozen.

You buy 7 dozen eggs. How many eggs do you have?



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?



A Fourth Graders Thinking..



Retrieved from www.gfletchy.com



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How long to fill up the biggest pickle jar?







What questions do you have for this student?



**What do you notice?
What do you wonder?**





1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 120



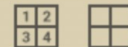
Clear All ↶ ↷ 🖋️ 📄 🖍️ 🖌️ 🗨️ T Multiples ▾





1	2	3	4	5	6	7	8	9	10
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31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 120



Clear All ↶ ↷



Multiples ▾





1	2	3	4	5	6	7	8	9	10
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71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 120



Clear All ↶ ↷



Multiples ▾



Consider this problem

Find the whole number that each fraction is equivalent to.

- $\frac{16}{1}$
- $\frac{16}{2}$
- $\frac{16}{4}$
- $\frac{20}{4}$

Illustrative Mathematics



Consider this problem

Anderson loves to play video games. In their favorite game, they need 436 gems to get a new skin for their character. Anderson currently has 289 gems. How many more gems do they need to have enough to buy the new skin?



Tommy's Challenge





THANK YOU!

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