

Beyond Answer-Getting:

Shift the Instruction, Shift the Culture

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#NCTMSD2019

Welcome! #NCTMSD2019



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Learning Targets

Today, you will be able to:

- **Describe** how a flexible approach to problem solving builds a classroom community that organically develops risk taking.
- **Describe** instructional moves teachers can make to promote access & equity for young mathematicians.
- **Discuss** the benefits of open tasks to encourage flexible thinking.
- **Identify** digital collaboration tools that allow young mathematicians to share their thinking.



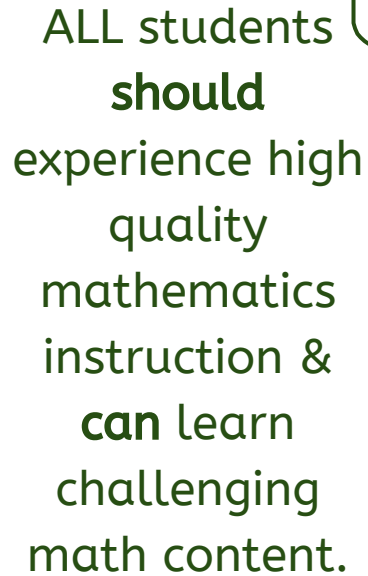
Synthesis of Ideas



Give One, Get One

Noticings/Wonderings to GIVE	Noticings/Wonderings you GOT from your partner...

Rationale/Why



ALL students
should
experience high
quality
mathematics
instruction &
can learn
challenging
math content.

Rationale/Why


ALL students
should
experience high
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Dependent
Thinkers
(learned helplessness)

vs.

Independent
Thinkers

Standards for Mathematical Practice



Make sense of problems & persevere in solving them	Reason abstractly & quantitatively	Construct viable arguments & critique the reasoning of others	Model with mathematics
Use appropriate tools strategically	Attend to precision	Look for and make use of structure	Look for and express regularity in repeated reasoning

Today's Experience

Common Core:

1.OA.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Visualize It!



Problem to Solve

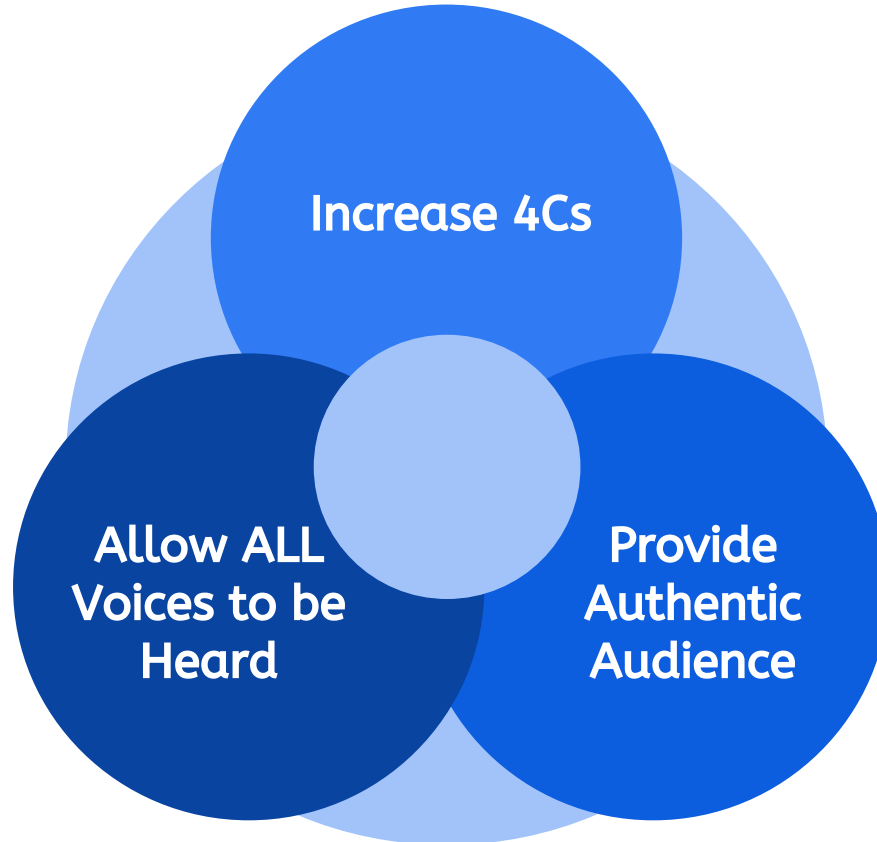
George has _____ pennies and Sandra has _____ pennies. How many more pennies does George have than Sandra?

(20, 13)

(9, 6)

(12, 8)

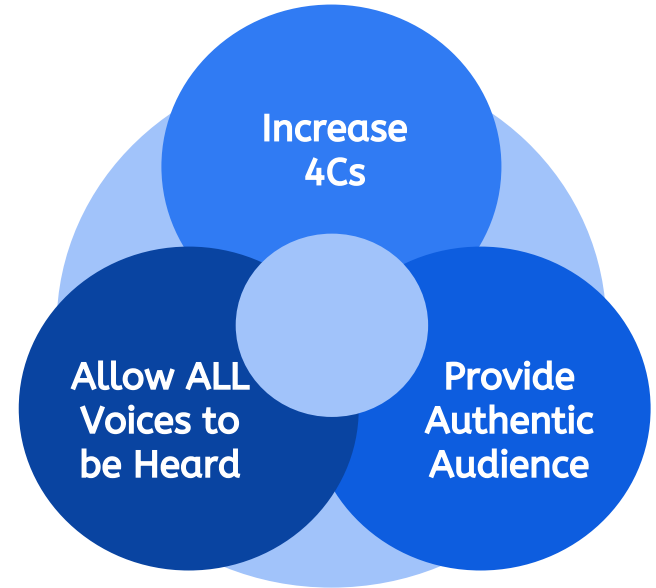
You Can Use Technology To...



Sharing Our Thinking: FlipGrid

FlipGrid

- Video discussion platform
- Free, Intuitive, Safe



Sharing Our Thinking: FlipGrid

<http://bit.ly/BeyondAnswers>

<https://flipgrid.com/c42b03e9>



Please Authenticate 🖐️

To record in this Grid you must authenticate.



Log In with Google






Log In with Microsoft



Remember Me

@gmail.com or @outlook.com

Sharing Our Thinking: Your Turn

1.  Create your video (Explaining 1 Strategy)
2.  Watch someone else's video
3.  Reply to the video you watched.

Response Stems

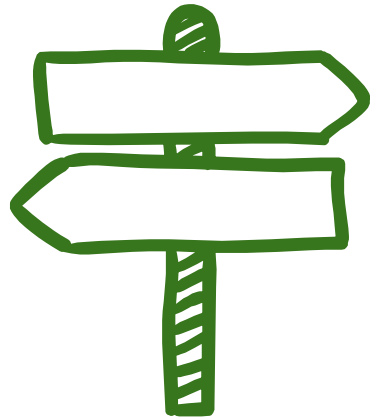
- One thing you did really well was...
- A question I have is...
- I agree/disagree with your thinking because....
- I would like to know more about....

Give One, Get One

Noticings/Wonderings to GIVE	Noticings/Wonderings you GOT from your partner...



Closing Questions, Comments, Ideas for Next Steps?



Thank You! #NCTMSD2019



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Sources

- Ryan and Courtney Flessner (show it two ways; multiple data sets)
- <http://www.wismath.org/Resources/Documents/Annual%20Conference/210JMetke-Low%20Floor%20High%20Ceiling%20Handouts.pdf>

