

Building Relationships and Community in the New School Year

NCTM Webinar
August 28, 2023

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A word cloud of "Thank You" in various languages, including:

- English: thank you, gracias, merci, thank you
- Spanish: gracias, gracias
- French: merci, merci
- German: danke, danke
- Italian: grazie, grazie
- Portuguese: obrigado, obrigado
- Arabic: شكراً جزيلاً
- Hebrew: תודה, תודה
- Chinese: 謝謝, 謝謝
- Japanese: ありがとう, ありがとう
- Russian: спасибо, спасибо
- Ukrainian: дякую, дякую
- Polish: dziękuję, dziękuję
- Czech: děkuji, děkuji
- Slovak: ďakujem, ďakujem
- Slovenian: hvala, hvala
- Croatian: hvala, hvala
- Serbian: hvala, hvala
- Bosnian: hvala, hvala
- Macedonian: благодарам, благодарам
- Bulgarian: благодаря, благодаря
- Romanian: mulțumesc, mulțumesc
- Yugoslavian: hvala, hvala
- Albanian: faleminderit, faleminderit
- Malay: terima kasih, terima kasih
- Indonesian: terima kasih, terima kasih
- Thai: ขอบคุณ, ขอบคุณ
- Vietnamese: cảm ơn, cảm ơn
- Khmer: គុណវិបស័ក, គុណវិបស័ក
- Laotian: ກະລຸນາ, ກະລຸນາ
- Tagalog: salamat, salamat
- Filipino: salamat, salamat
- Malayalam: നന്ദി, നന്ദി
- Tamil: தודה, தודה
- Urdu: شکریہ, شکریہ
- Punjabi: ਧੰਨਵਾਦ, ਧੰਨਵਾਦ
- Swahili: asante, asante
- Shona: mhauruuru, mhauruuru
- Zulu: kuhlama, kuhlama
- Xhosa: mahalo, mahalo
- Yoruba: mabawo, mabawo
- Igbo: mabawo, mabawo
- Hausa: amin, amin
- Amharic: ጸና, ጸና
- Oromo: barbaada, barbaada
- Somali: ahlan, ahlan
- Arabic (Dialect): shukriya, shukriya
- Arabic (Dialect): shukriya, shukriya
- Arabic (Dialect): shukriya, shukriya



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Mission Statement

The National Council of Teachers of Mathematics advocates for high-quality mathematics teaching and learning for each and every student.



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NCTM Grants and Scholarships

Mathematics Education Trust (MET)

- 35+ grants, scholarships, and awards available to NCTM Members
- \$150,000 annually in funding to teachers, schools, and organizations
- Awards for:
 - Coursework and Scholarships
 - Professional Development
 - Research
 - Conference Attendance

	Winter Cycle	Summer Cycle
Opens	August 1	February 1
Due	November 1	May 1
Notification	February	July

www.nctm.org/grantsaward

S

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3 Big Ideas

- Building Relationships
- Building Student Identity
- Building Community



Why?



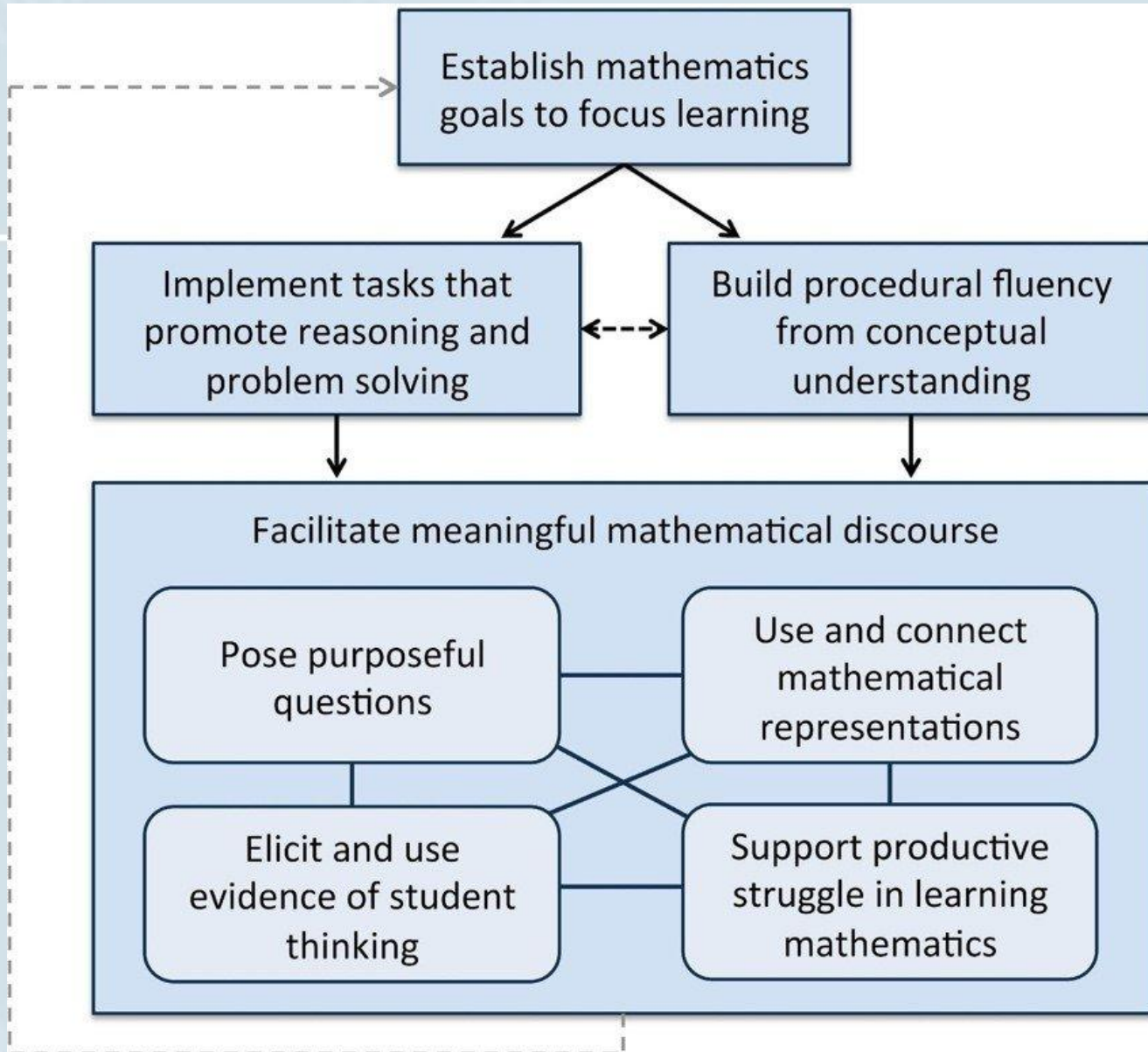
8 Effective Mathematics Teaching Practices

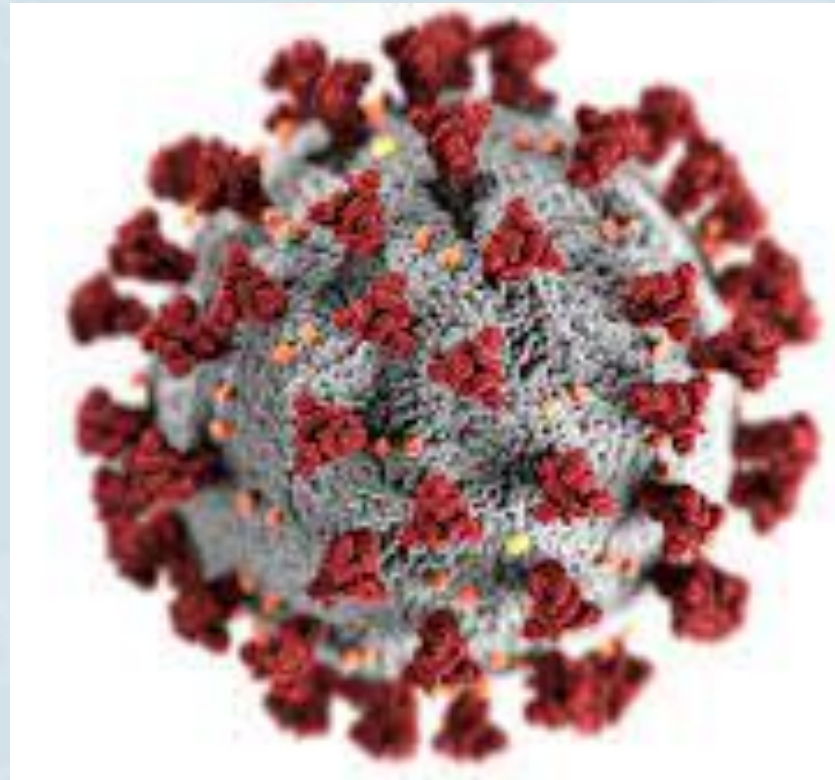
- Establish mathematics goals to focus learning.
- Implement tasks that promote reasoning and problem solving
- Use and connect mathematical representations
- Facilitate meaningful mathematical discourse
- Pose purposeful questions
- Build procedural fluency from conceptual understanding
- Support productive struggle in learning mathematics
- Elicit and use evidence of student thinking



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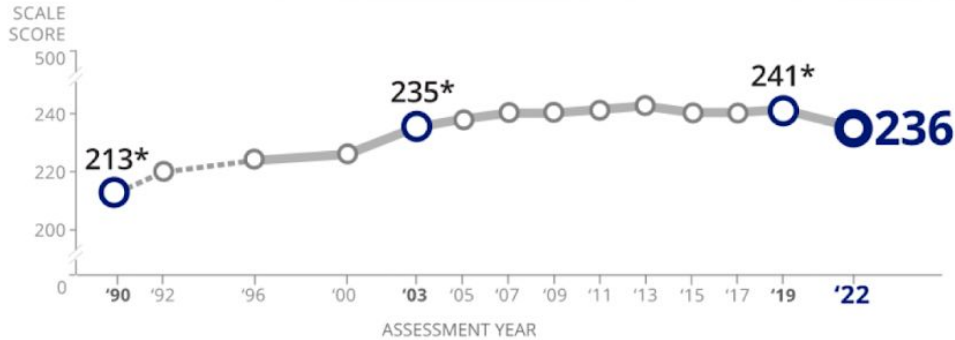


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Largest ever score declines in mathematics

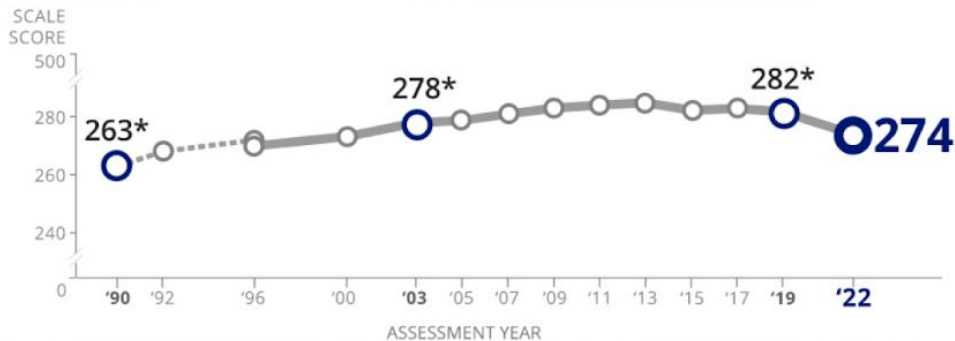
GRADE 4



↑ 23pts
compared to 1990

↓ 5pts
compared to 2019

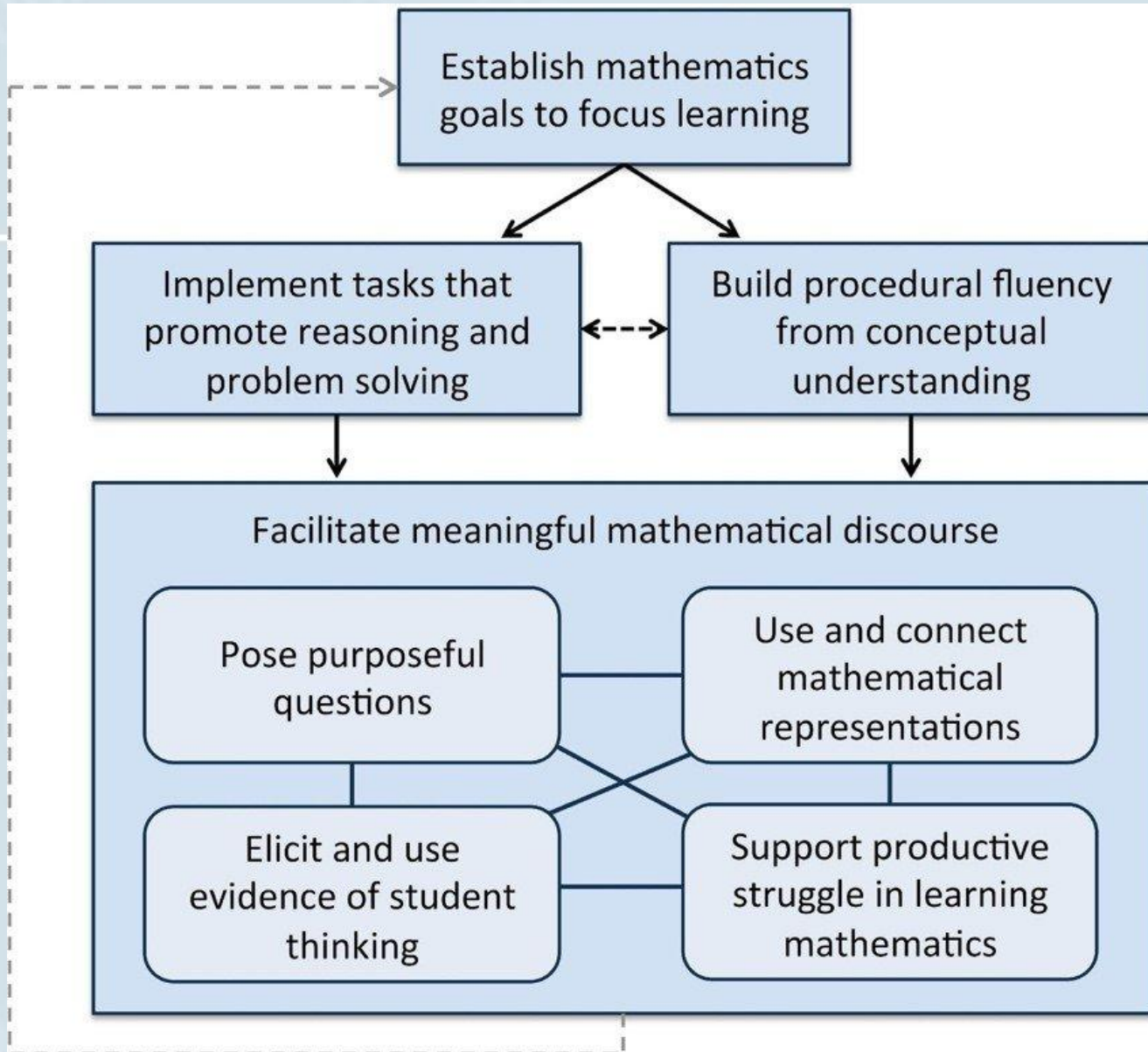
GRADE 8



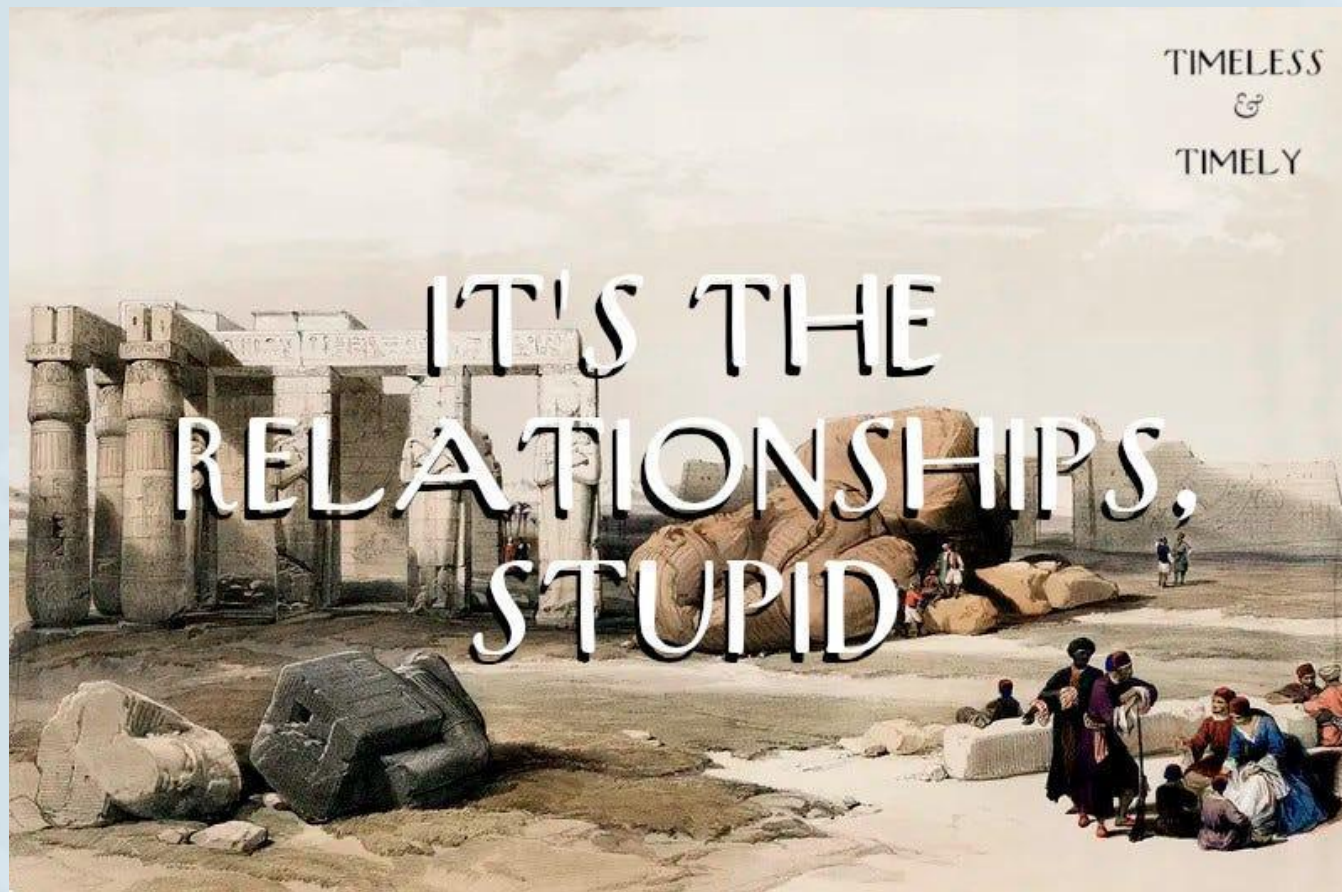
↑ 12pts
compared to 1990

↓ 8pts
compared to 2019

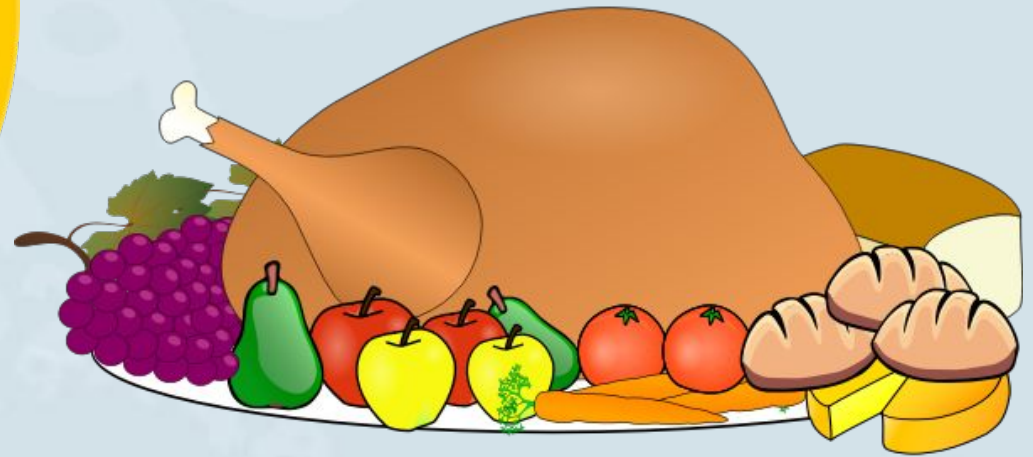




Building Relationships



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BUILDING RELATIONSHIPS WEEK 1 WITH

Name Tents



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What are some of your favorite ways to develop relationships?



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Building Student Identity



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What is identity?

Mathematics identity is the **disposition and deeply held belief** that people develop about their ability to **participate and perform** effectively in mathematics.

(Aguirre, Mayfield-Ingram, and Martin, 2013)



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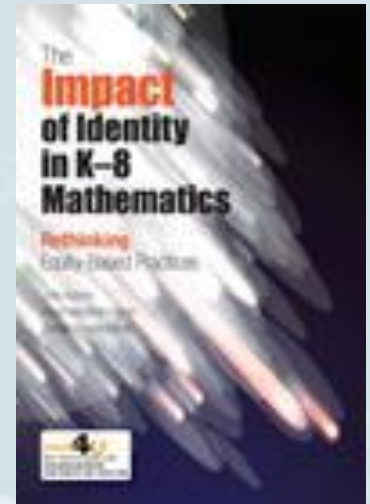
OPPORTUNITY



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5 Equitable Practices

- Going deep with mathematics
- Leveraging multiple mathematical competencies
- **Affirming mathematics learners' identities**
- Challenging spaces of marginality
- Drawing on multiple resources of knowledge (math, culture, family, community)



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(Aguirre, Mayfield-Ingram, and Martin, 2013)

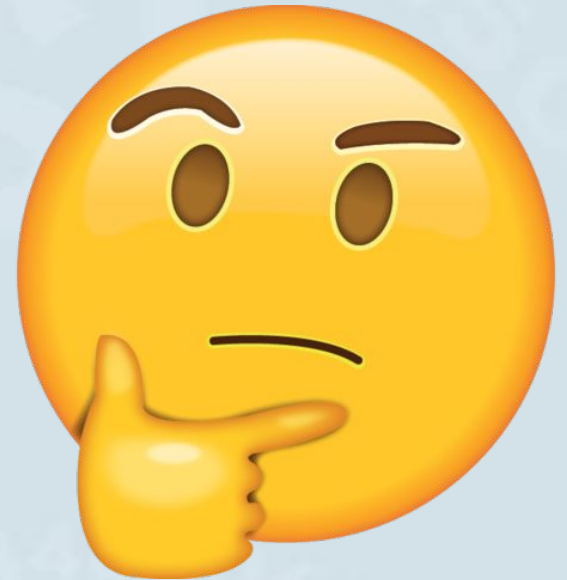
9 Equitable Teaching Practices

- Draw on students' funds of knowledge
- Establish classroom norms for participation
- Position students as capable
- Monitor how students position each other
- Attend explicitly to race and culture
- Recognize multiple forms of discourse & language as a resource
- Press for academic success
- Attend to students' mathematical thinking
- Support development of sociopolitical disposition



Create an emoji for when you...

- think about math
- do math
- encounter a challenge
- overcome a challenge
- figure out something in math
- would rather be doing something else
- are proud of yourself
- are proud of yourself in math





I feel happy because maths fun
and we learn in math!!!!



I fill nevers win
i am in math

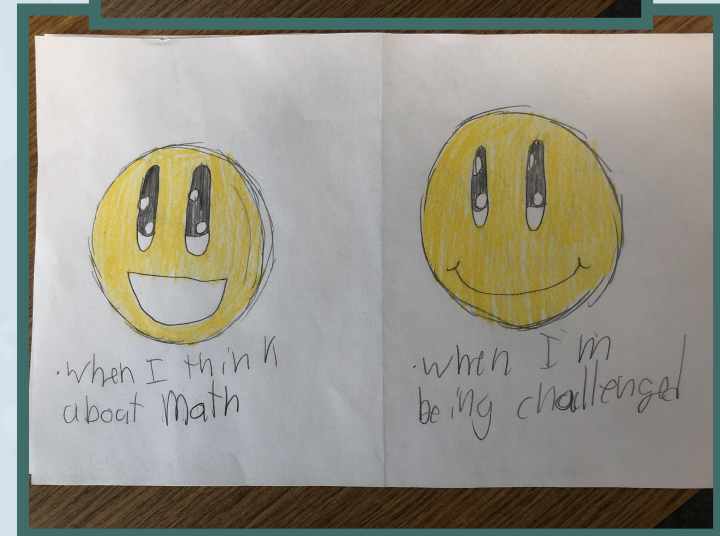
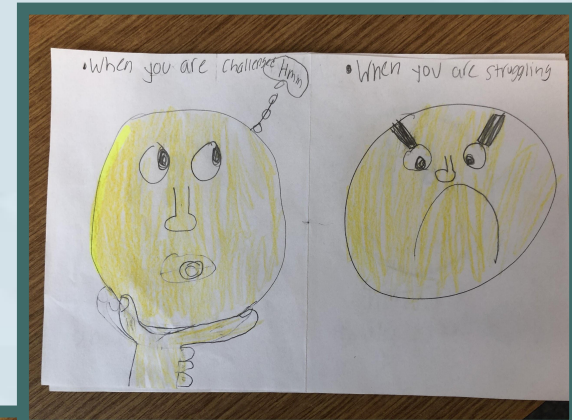
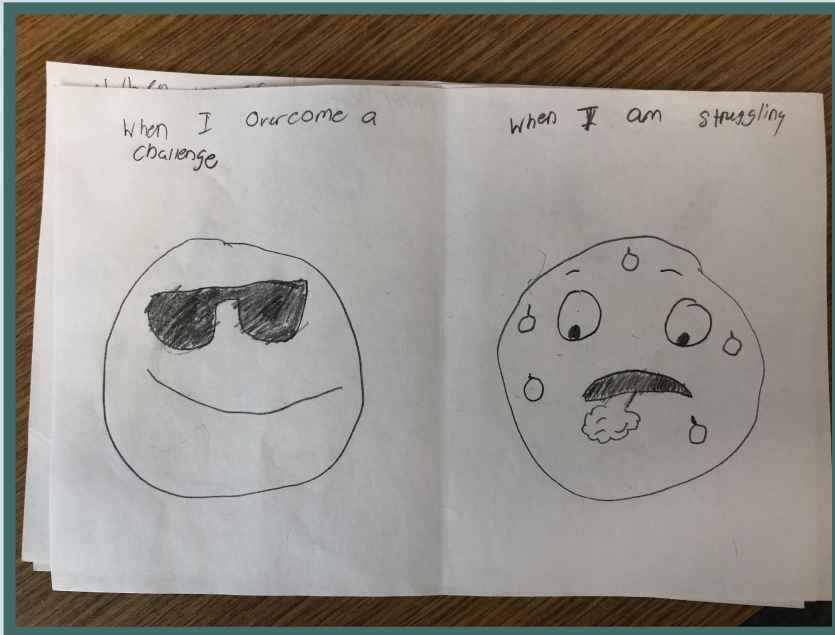


I don't know
what we are I don't know
gonaw term. what numbers are gono come 4.

When I think
about math



What does their emoji tell you?



Mathematics Learning Biography

- How do you feel about learning math?
- How do you think you compare to others in your class?
- What is the best thing that has ever happened in math?
- What is the worst thing that has ever happened in math?



Beliefs Inventory/Survey

- Early in the year
- Quarterly
- Beginning/end of year
- Using scales or smiley faces



Younger Math Student Survey Questions

I like math.

I can do math.

It's OK to ask for help.

I like to add, subtract, and work with numbers.

I like working with math by myself.

I like working with others during math.

I like to talk with my friends about math.

It's OK to make mistakes in math.

I keep trying when math is hard.

I like answering questions in math.

I like to use tools in math.

I am good at math.

Beliefs Inventory/Survey

- Early in the year
- Quarterly
- Beginning/end of year
- Using scales or smiley faces



Older Math Student Survey Questions

I am sure that I can learn math.

My teachers have been interested in my progress in math.

If I can't do a problem, I keep trying different ideas.

Certain people are naturally better at math.

Math is hard for me.

In mathematics, you are rewarded for your efforts.

I get a sense of satisfaction when I solve a math problem.

I'll need math in my future.

Math is worthwhile.

I can do well in math.

I prefer to work with others when doing math.

My teachers think I'm the kind of person who could do well in math.

What are some of your favorite ways to develop student identity?



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Building Community



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Identity and Community

Community is a collection of identities that interact with one another in supportive or destructive ways.

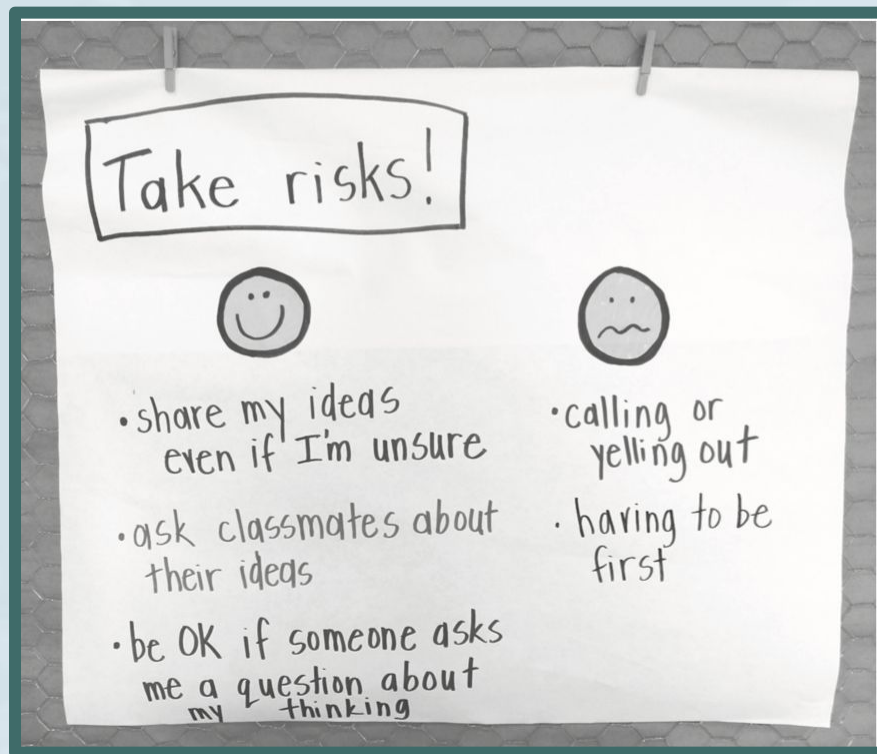
built and maintained



Norms are created, reinforced, and updated

norms for productive struggle

Establishing Norms



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

4 4's

$$4 \ 4 \ 4 \ 4 \ = \ 0$$

$$4 \ 4 \ 4 \ 4 \ = \ 1$$

$$4 \ 4 \ 4 \ 4 \ = \ 2$$

$$4 \ 4 \ 4 \ 4 \ = \ 3$$

$$4 \ 4 \ 4 \ 4 \ = \ 4$$

$$4 \ 4 \ 4 \ 4 \ = \ 5$$

$$4 \ 4 \ 4 \ 4 \ = \ 6$$

$$4 \ 4 \ 4 \ 4 \ = \ 7$$

$$4 \ 4 \ 4 \ 4 \ = \ 8$$

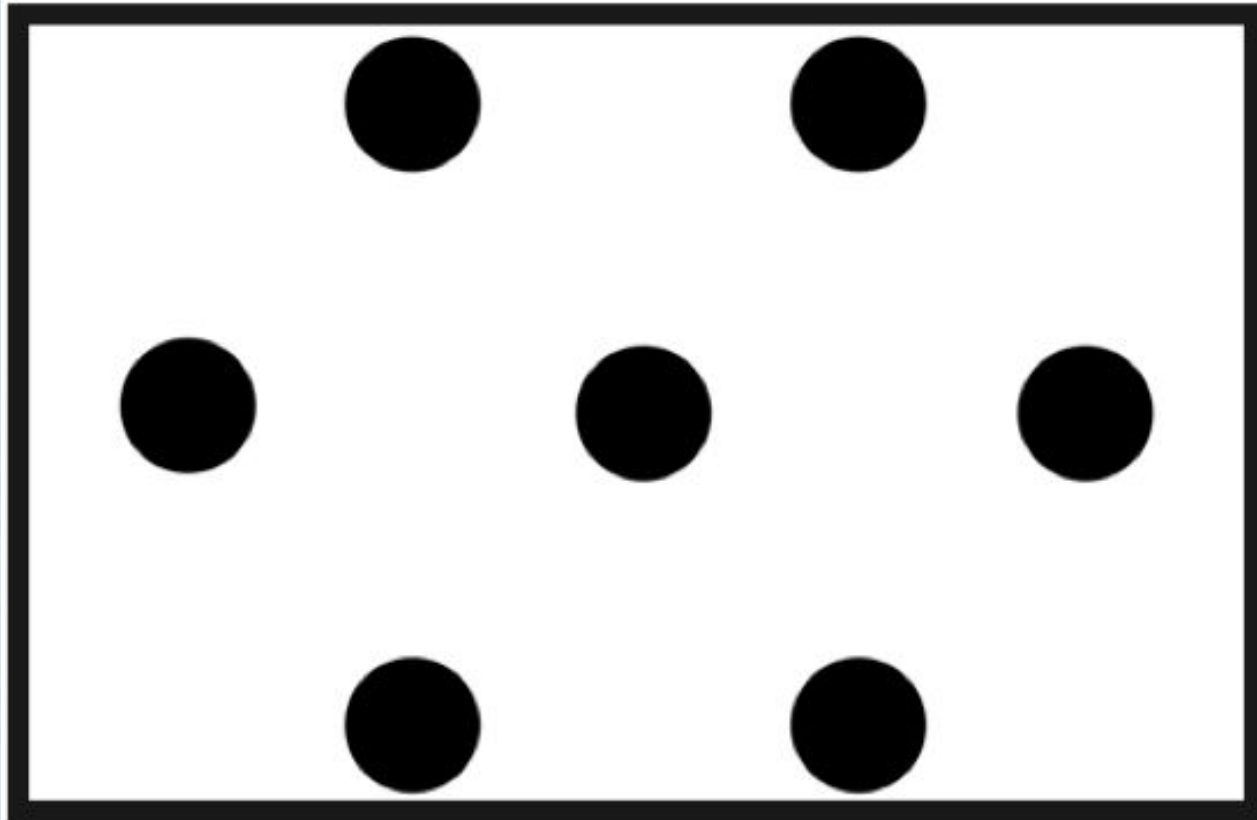
$$4 \ 4 \ 4 \ 4 \ = \ 9$$

$$4 \ 4 \ 4 \ 4 \ = \ 10$$

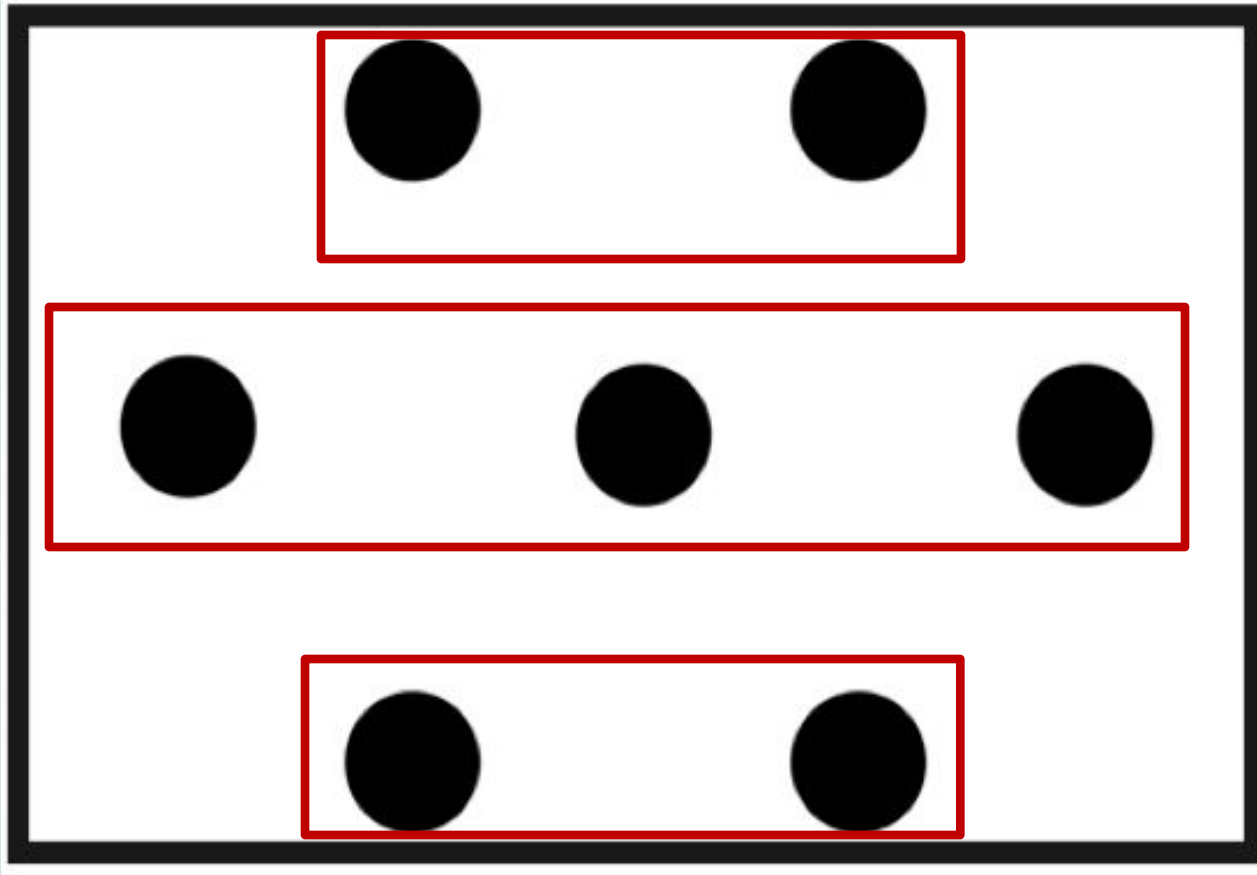
4 4's

- $4 + 4 + 4 / 4 = 3$
- $4 + 4 + 4 / 4 = 9$
- $(4 + 4 + 4) / 4 = 3$

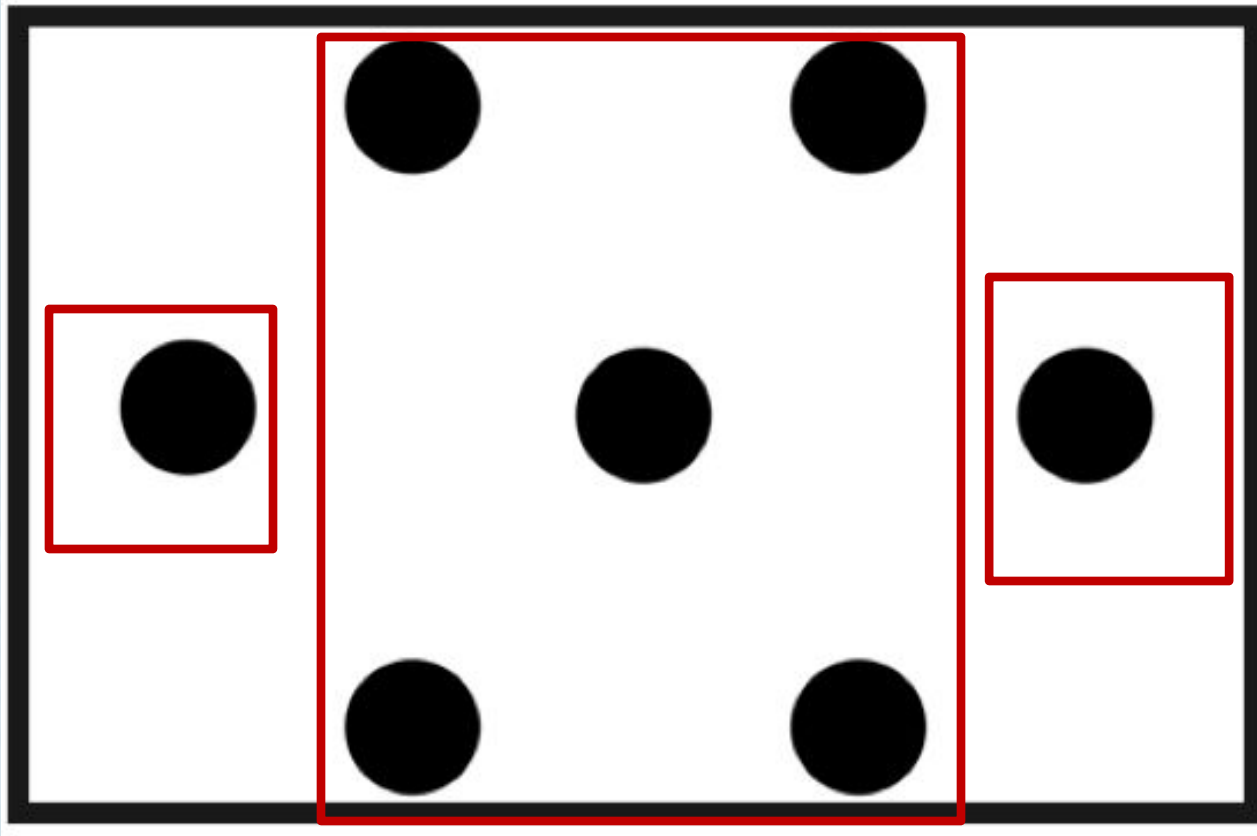
**How many dots do you see?
How do you see it?**



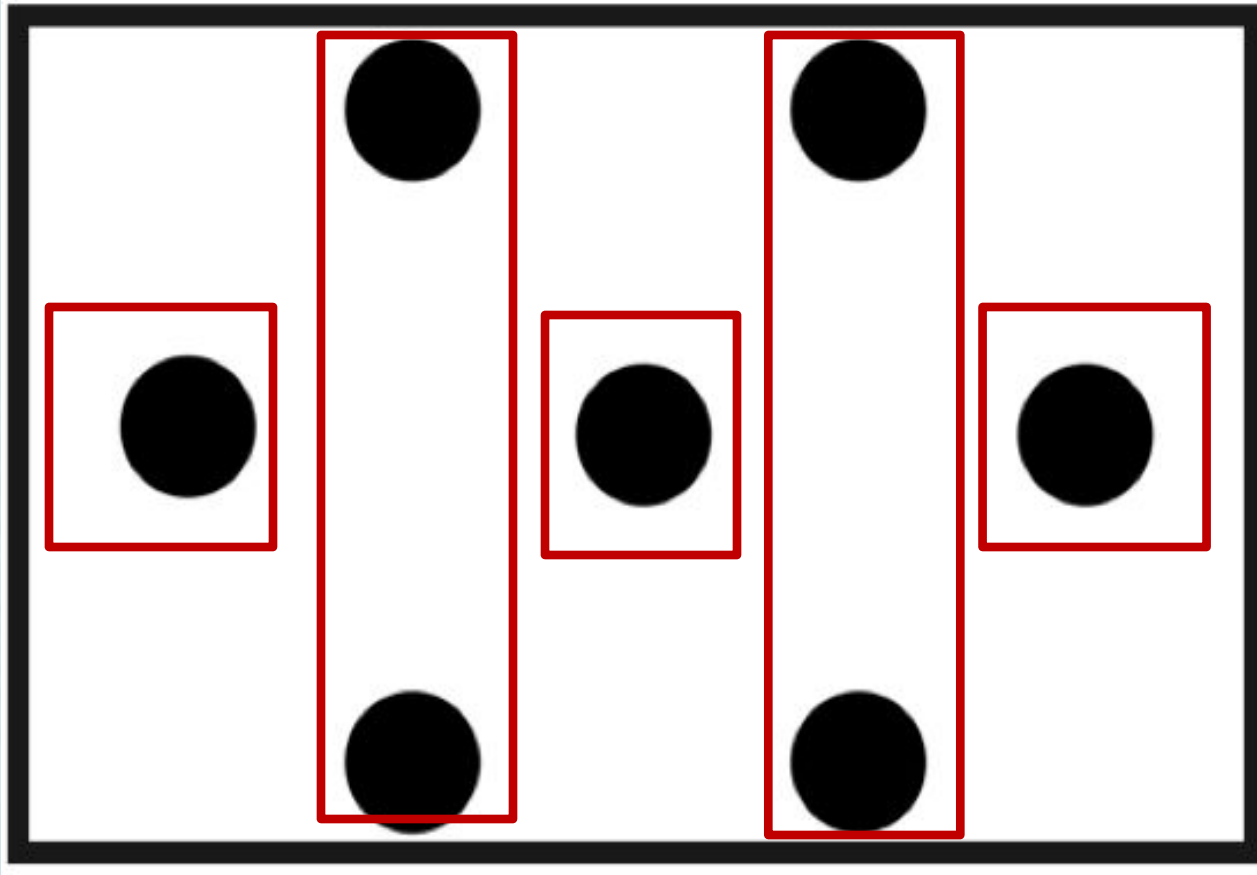
How many dots do you see? How do you see it?



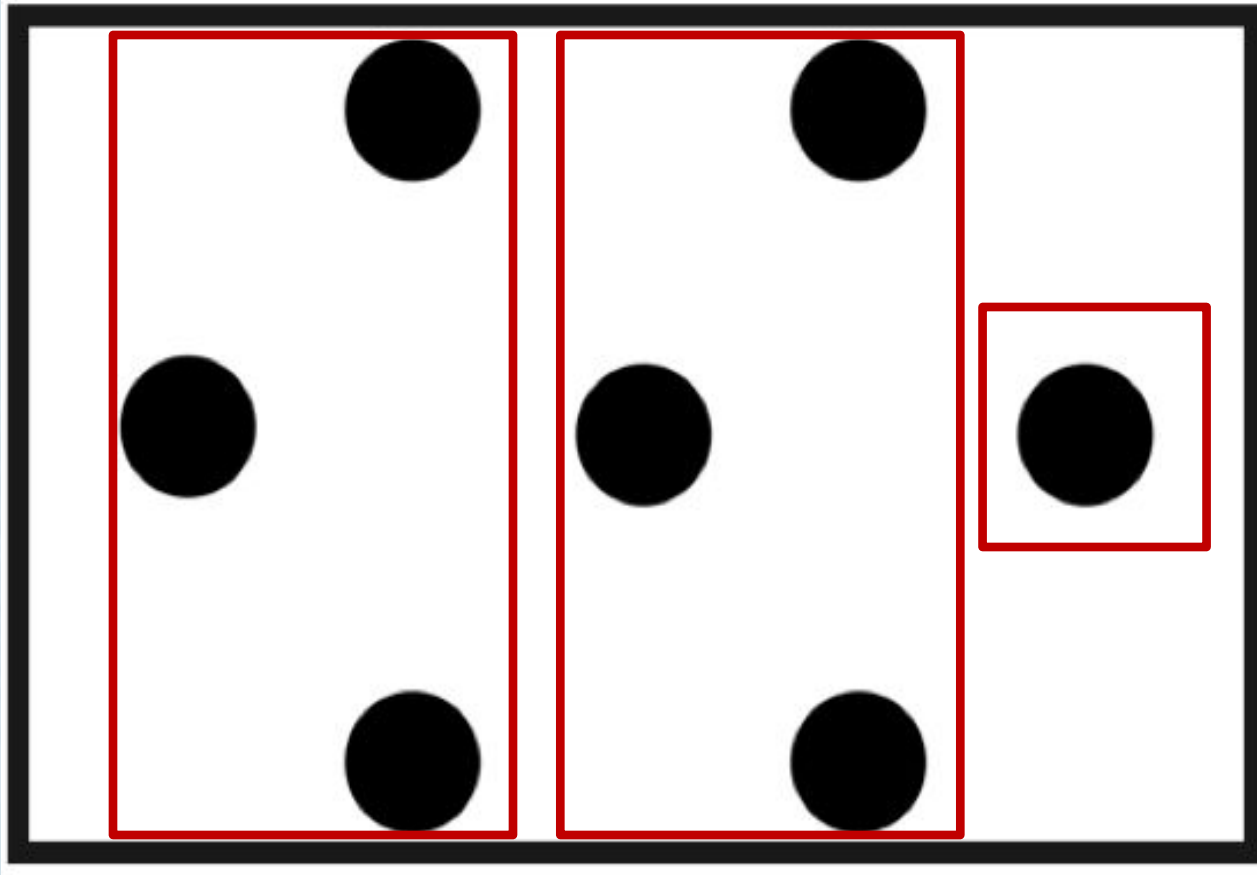
How many dots do you see? How do you see it?

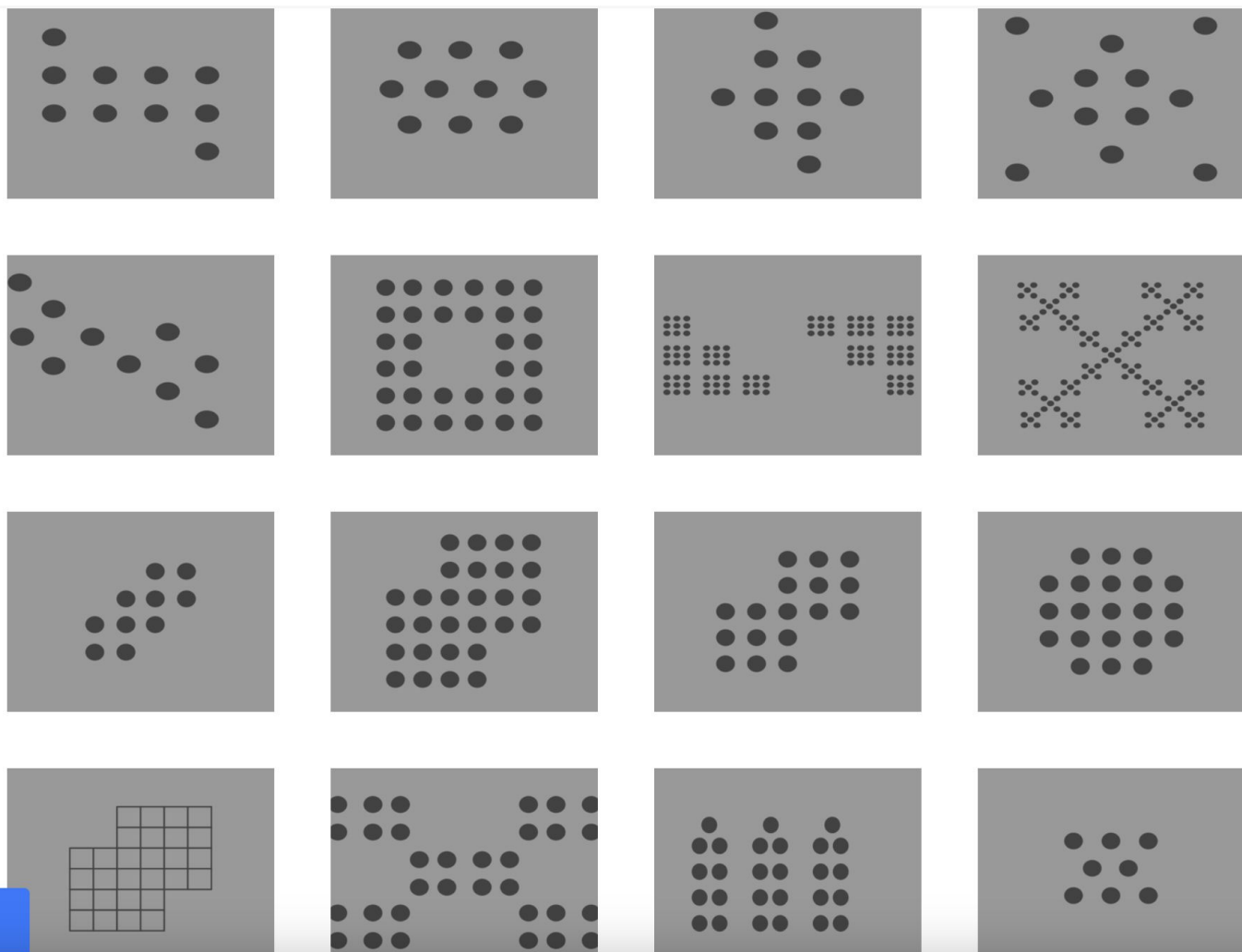


How many dots do you see? How do you see it?



How many dots do you see? How do you see it?





Estimation 180

About what is the value of the bowl of pennies?



ESTIMATION180.COM

Estimation180.com



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About what is the value of the bowl of nickels?



ESTIMATION180.com



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Estimation180.com

Which one doesn't belong?

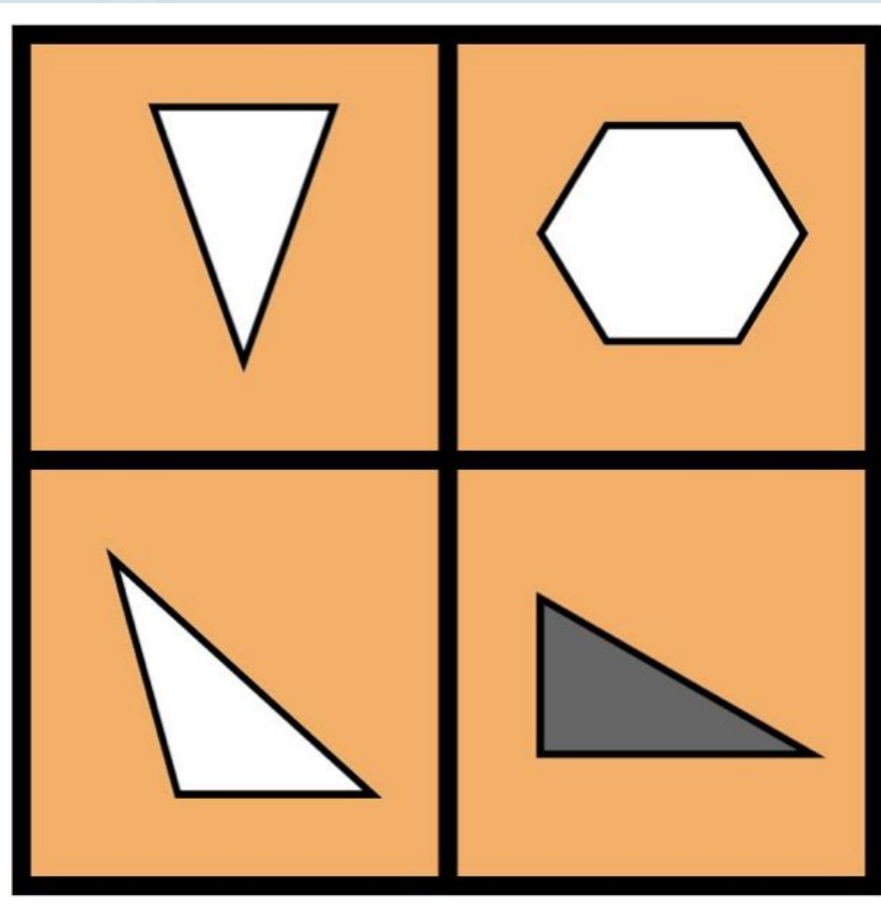
9	16
25	43

Wodb.ca



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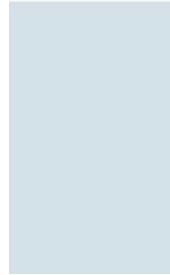


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Classroom Videos



Brains Grow and Change



Believe in Yourself



The Importance of Struggle



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What are some of your favorite ways to build community?



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Accountability Partner



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Creating Spaces For Change
Through Community:
It Starts With You



2023
**ANNUAL MEETING
& EXPOSITION**
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