



# GROWING MATHLETES

Integrating Math, Growth Mindset,  
and Sports

Sahuarita USD Virtual PD  
February 15, 2023

# Introductions



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Poll to find out who is here today  
<https://www.menti.com/aloh15vidpvf>

# Goals for the Session

We will be able to:

- Describe what a growth mindset is and why it is important
- Describe why and practice how to praise the process, not the person
- Explore connections between growth mindset, math and/or other academic subjects, and student interests

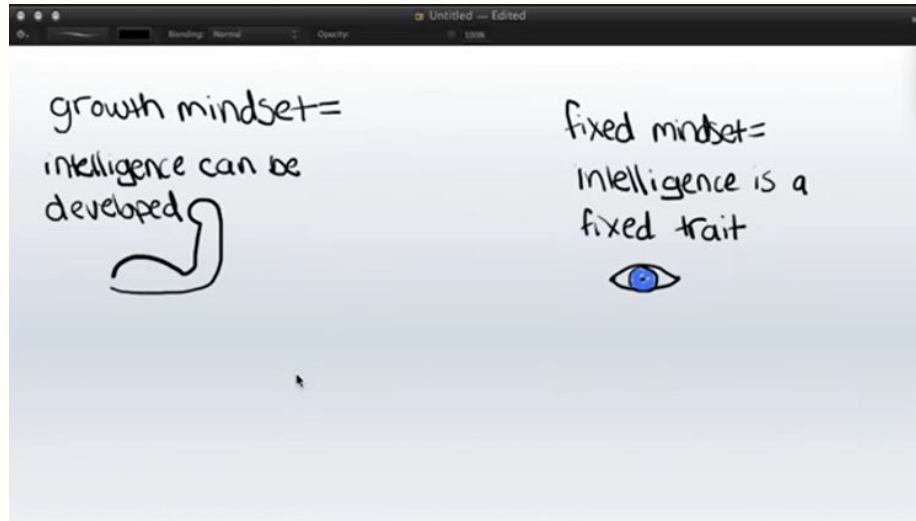
# Growth Mindset Principles

1. ***The value of collaboration. Everyone has strengths to contribute to the team.*** Many tasks require a number of different skills and abilities. None of us may have all of these skills and abilities, but as a team we can draw on the strengths of each team member to succeed.
2. ***The power of effort and persistence.*** We can improve and reach our goals through goal setting, effort, and progress tracking. Effort pays off when we persevere and keep working toward goals.
3. ***The value of mistakes in supporting learning.*** Mistakes are a normal and valuable part of the learning process. We can learn from our mistakes through reflecting on our errors and taking lessons from them. Mistakes make our brain grow!
4. ***Malleability of the brain and the role of struggle in learning.*** The brain can get stronger and smarter. New connections between neurons in the brain change all the time as a result of our experiences.
5. ***Praise the process, not the person.*** Modify your language to focus on the process instead of the person. Praise youth when they work hard to accomplish a difficult task.

# Introduction to Growth Mindset



VIDEO: [What is a Growth Mindset?](#)



Source: MindsetKit.org



I can learn anything I want to.  
When I'm frustrated, I persevere.  
I want to challenge myself.  
When I fail, I learn.  
Tell me I try hard.  
If you succeed, I'm inspired.  
My effort and attitude determine everything.



I'm either good at it, or I'm not.  
When I'm frustrated, I give up.  
I don't like to be challenged.  
When I fail, I'm no good.  
Tell me I'm smart.  
If you succeed, I feel threatened.  
My abilities determine everything.

# Why is Growth Mindset Important?

VIDEO: [The evidence: how a growth mindset leads to higher achievement](#)

A growth mindset focuses students on learning.  
You can even see this when you look inside the brain!



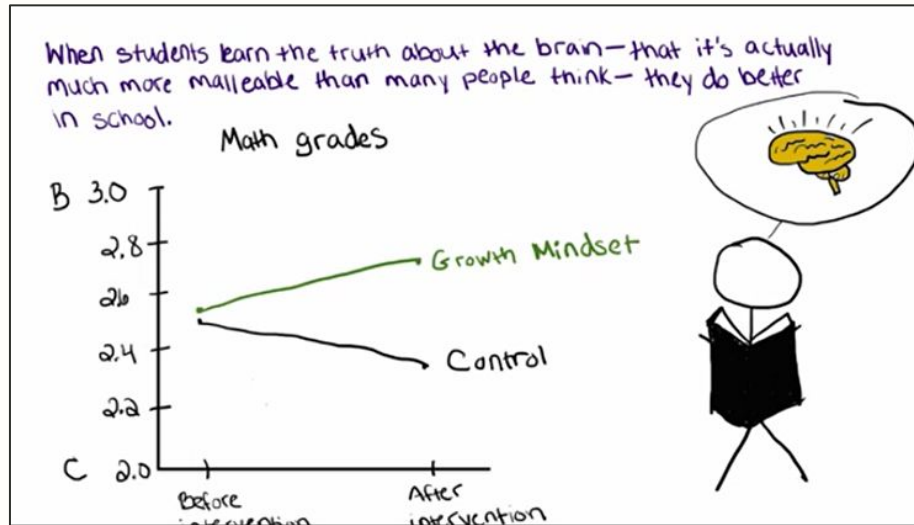
A study on mindsets and brain activation\*

Source: MindsetKit.org

# Mindsets can Change!



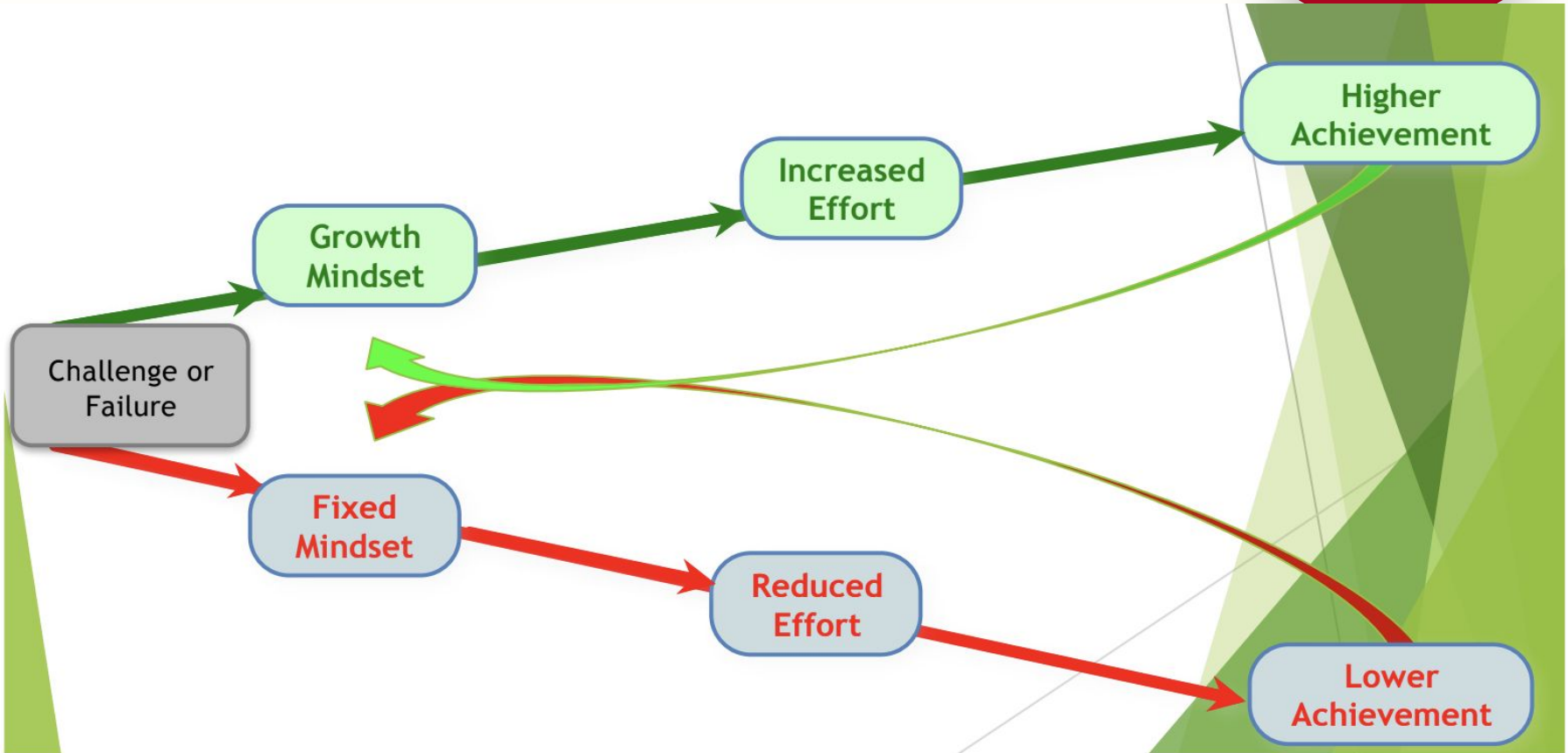
VIDEO: [Mindsets can change](#)



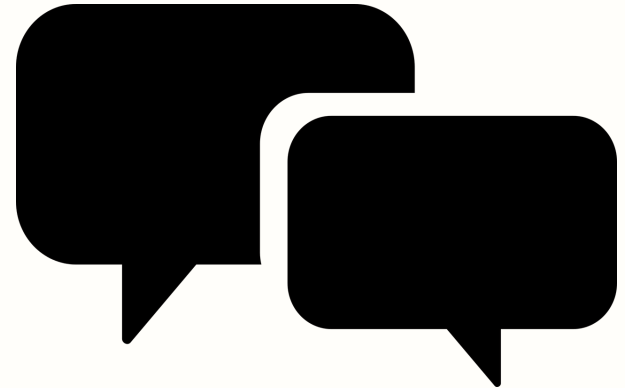
Source: MindsetKit.org



# Mindsets and Facing Challenges



- What stood out to you in these videos?
- What questions or wonderings do you have?
- How do you think these ideas apply to the students that you work with?



# Praise the process, not the person.

Instead of This (Person-Praise)	Try this (Process-Praise)
Great job! You must be good at this.	
See, you <i>are</i> good at math. You got an A on your last test.	
You got it! I told you that you were smart.	
You are such a good student!	

# Praise the process, not the person.

<b>Instead of This (Person-Praise)</b>	<b>Try this (Process-Praise)</b>
Great job! You must be good at this.	Great job! You must have worked really hard.
See, you <i>are</i> good at math. You got an A on your last test.	You really studied for your Math test and your improvement shows it.
You got it! I told you that you were smart.	I like the way you tried all kinds of strategies on that math problem until you finally got it.
You are such a good student!	I love the way you stayed on task, you kept your concentration, and you kept on working. That's great!

# Your examples

Instead of This (Person-Praise)	Try this (Process-Praise)
You are smart!	<i>I like how you are class leader. I like how you exhibited your skills. Thank you for following directions.</i>
You are really great at math.	<i>Wow, that's something I never thought of! That's great that you came up with that idea.</i>
Good job!	<i>[Add what they did a good job on specifically - PROCESS!] You really tried hard. You persevered through that challenge. I can really tell you're thinking hard!</i>
[What is another example you hear or catch yourself saying?] Thank you for ____.	<i>Thank you for [some specific and personal effort]!</i>

# Reflection

- In your own words, what are the most important take home messages of growth mindset...
  - ... in how you interact with students?
  - ... in what you ask students to do?
- Why is it important to praise the process instead of the person?

# Online Resources for Teaching About Mindset



Mindset Tool Kit: <https://www.mindsetkit.org/>

National Mentoring Resource Center:

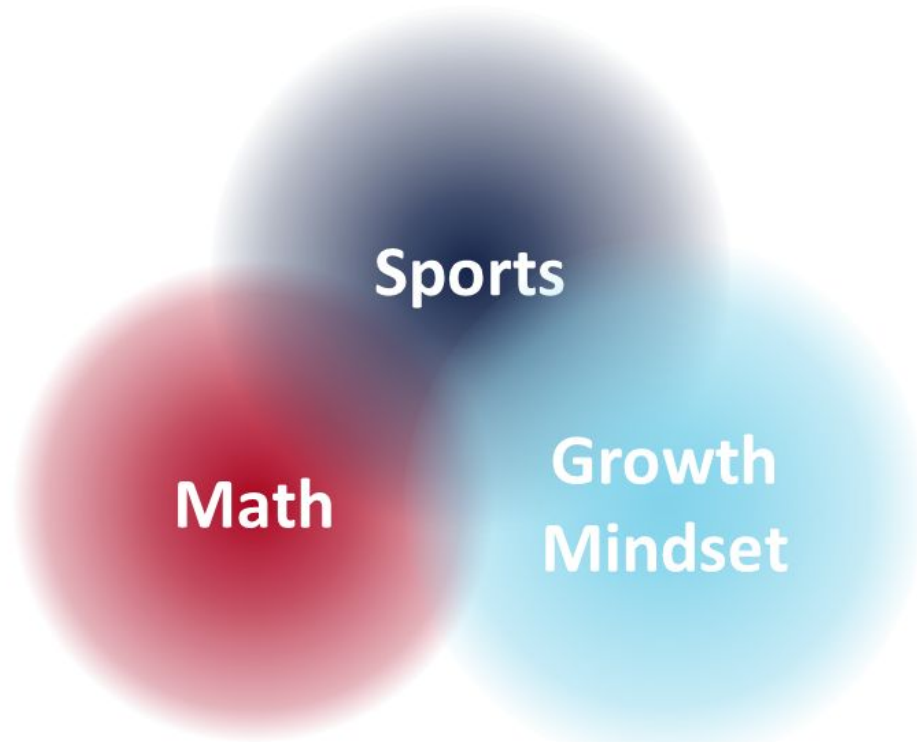
<https://nationalmentoringresourcecenter.org/resource/growth-mindset-for-mentors-toolkit/>

[Mindset Matters](#)

(with Michael Jordan, J.K. Rowling & Sonya Sotomayor)

[Brain Jump with Ned the Neuron: Challenges Grow Your Brain](#)

# The Growing Mathletes Curriculum



Three content areas  
integrated in all  
lessons



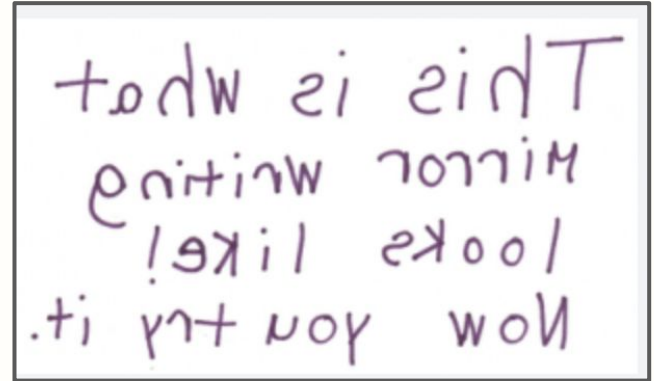
# Example Activity from Growing Mathletes



**Growth Mindset Connection:** The malleability of the brain.

We are going to practice “mirror writing” your name!

1. Mirror write name on a piece of paper
2. Show it on your camera (it will look correct to you in the camera and backwards for everyone else)
3. Do it again 4 times
4. Show it on your camera
5. What do you notice about your mirror writing attempts?



# Example Activity from Growing Mathletes



**Growth Mindset Connection:** The malleability of the brain.

Do you have any feedback on this activity?

- How does this activity help you to understand that the brain is malleable?
- What challenges do you think students might face when trying to mirror write?
- What suggestions do you have for us?

# Outcomes Related to Growth Mindset



Domain	Mean (s.d.) Pre	Mean (s.d.) Post
Overall growth mindset	4.37* (.77)	4.57 (.64)

There was a significant increase in youths' self-reported growth mindset and competency in STEM from pre to post implementation



# Youth Statements About Growth Mindset



## Making Mistakes

*You can learn a lot [from making mistakes]. It helps with your growth mindset. Even if you mess up, it's okay. You still have another chance, especially on the field. You miss a fly ball or grounder, get the next play. ... [making mistakes in math] just helps with thinking more, getting you prepared for a next question that might be harder.*

## Value of Collaboration

*[The activity] was fun. I like the part where we put the cones down because **it really felt like we were working together**, one was measuring, one was looking at the shape, another one was trying to fix the cones to make sure it was straight, another one was helping the guy measuring, and **it was really fun just working as a team.***

## Effort and Persistence

*I'm not the strongest at math, but if I try, it could get to my mind and I'll do it. And I'll realize that it's not that hard. But then **it's like about practice and working on it every day** and stuff like that.*

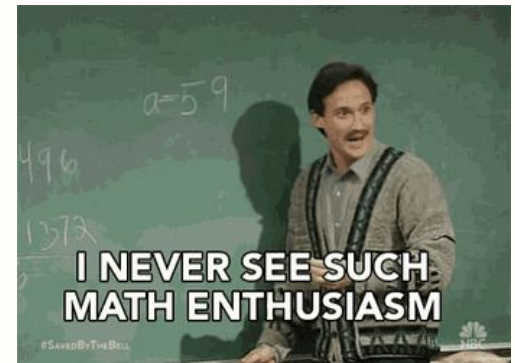
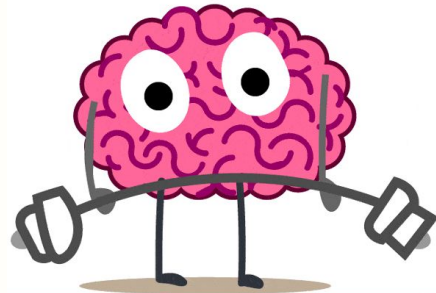
## Malleability of the Brain

*I kind of think of the brain as a muscle. **When you when you flex and work different parts of your brain, they get stronger and they get better and more adept** to doing those specific tasks. So when it comes to math, when you're stressing it or when you're working your brain on a specific problem on a calculation. Something like that, and your brain [can] get stronger.*

# Let's Brainstorm!

What other connections between sports (any sport), math, and growth mindset can you think of?

Work in breakout groups and be prepared to share out!



# Thank You and Contact Information



Please provide feedback: <https://forms.gle/tcsDtitjj61BWzRY7> (or QR code)

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STEM for ALL 2022 Video Showcase:  
<https://stemforall2022.videohall.com/presentations/2605>



*This material is based upon work supported by the National Science Foundation under Grant #2005793. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.*

