

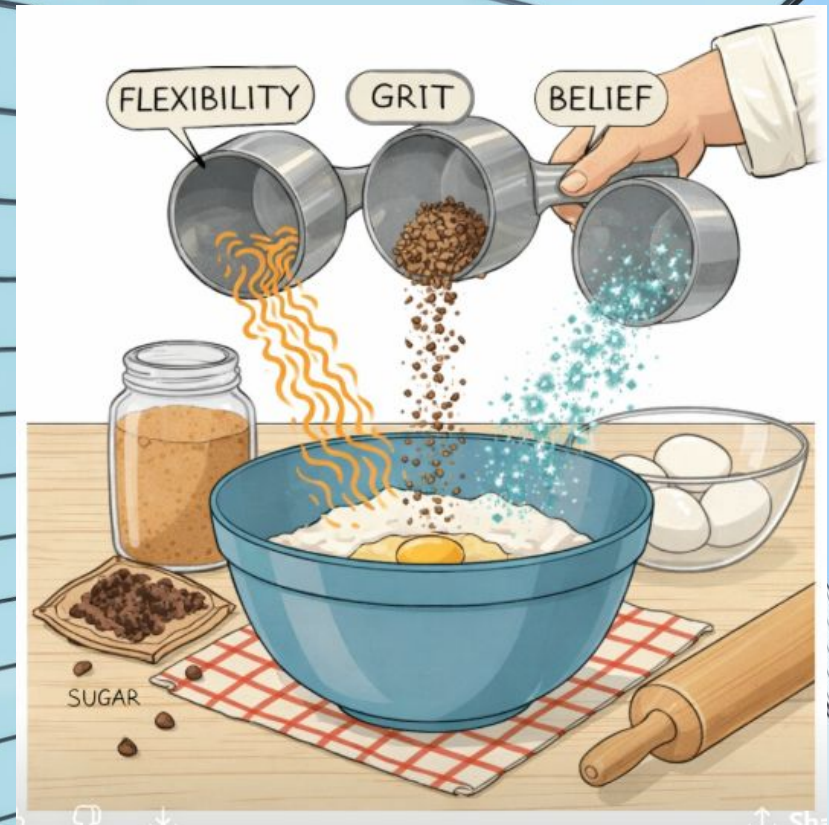
The Recipe for Building Mathematical Flexibility, Grit, and Belief

Defining Success in Today's Math Classroom

BTC 2026

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Bethel Public Schools and Sacred Heart University



Ingredient #1-

Create Agreements and Expectations

Ingredient #2-

Choose Rich Problem Solving Tasks

Ingredient #3-

Intentionally Celebrate Flexibility and Grit

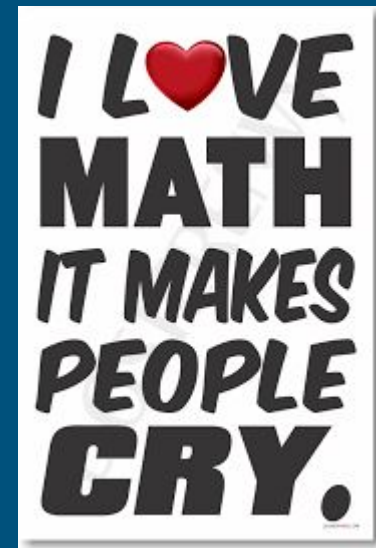


**THE RECIPE
FOR
FLEXIBILITY,
GRIT
AND BELIEF**

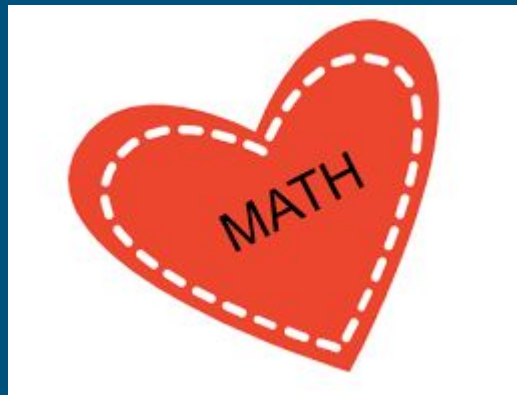
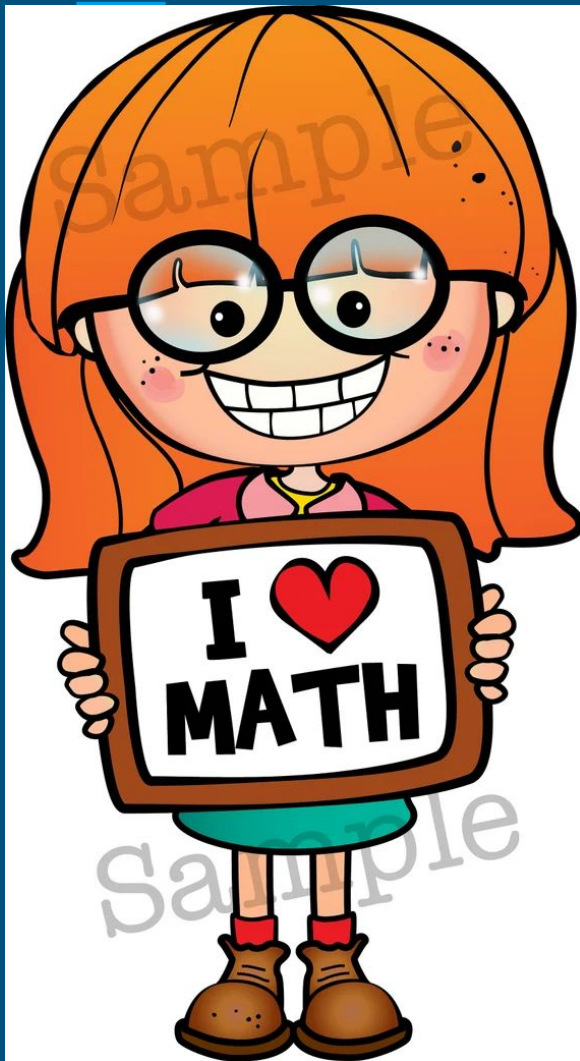
Core skills in 2025

1.  Analytical thinking
2.  Resilience, flexibility and agility
3.  Leadership and social influence
4.  Creative thinking
5.  Motivation and self-awareness
6.  Technological literacy
7.  Empathy and active listening
8.  Curiosity and lifelong learning
9.  Talent management
10.  Service orientation and customer service

This has to change.....
Google Do The Math and You Can Do Anything!



The images should look like this....
When you google I Love Math!



Turn and Talk



- Think about the last time a student said:
“I can't do this.”
“This is too hard.”
- What usually happens next?
- Who does most of the thinking in that moment?

*“When you
are solving a
problem and
it is hard,
and you get
stuck-what
do you do?”*

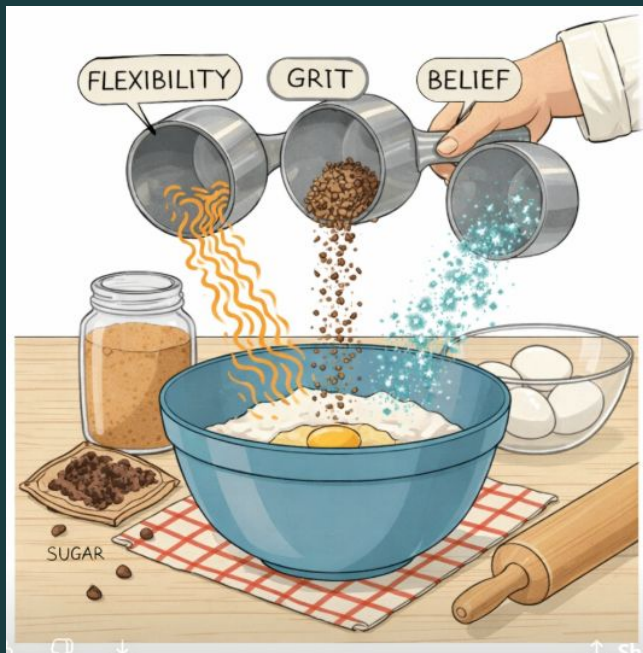


Are we Celebrating or Avoiding the Most Important Moments in Math?

- The moments when students are confused or stuck
- The moments when strategies fail
- The moments when students must think deeply
- These are the moments where learning begins

Reframing Success in Today's Mathematics Classroom

- Success is not defined by speed
- Success is not defined by perfection
- Success is not defined by getting the answer first
- Success is defined by flexibility, grit, and belief
- ***So...How do you do this in your classroom?***

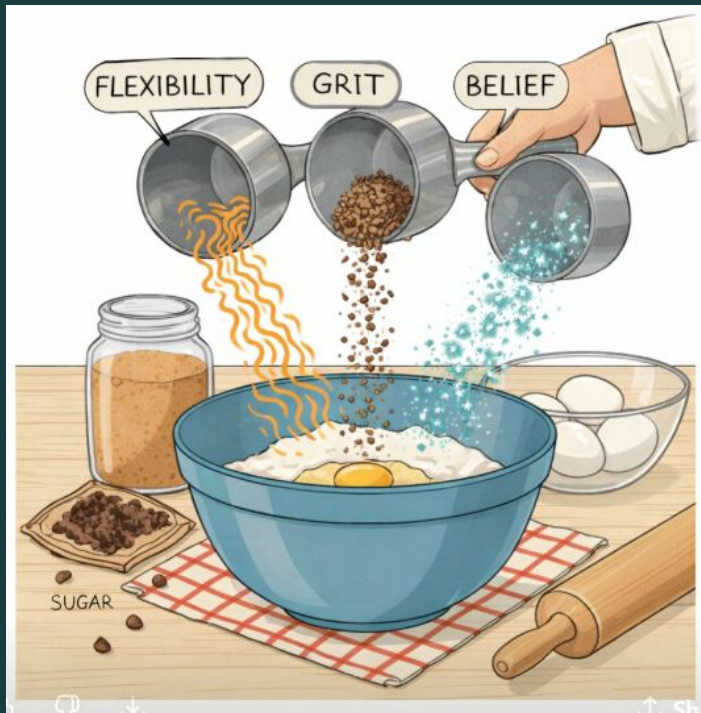


Ingredient #1

Co-Creating
Math
Agreements
together that
focus on
Flexibility, Grit
and Belief

Math Agreements are.....

- commitments you make as a class to develop a culture of belief that we are all mathematicians
- Build your Math Agreements together as a class



Turn and Talk

- What is Flexibility?
- What is Grit?
- What is Belief?

The Mathematical Resilience Framework



Rich Tasks • Collaboration • Public Thinking • Celebrating Revision

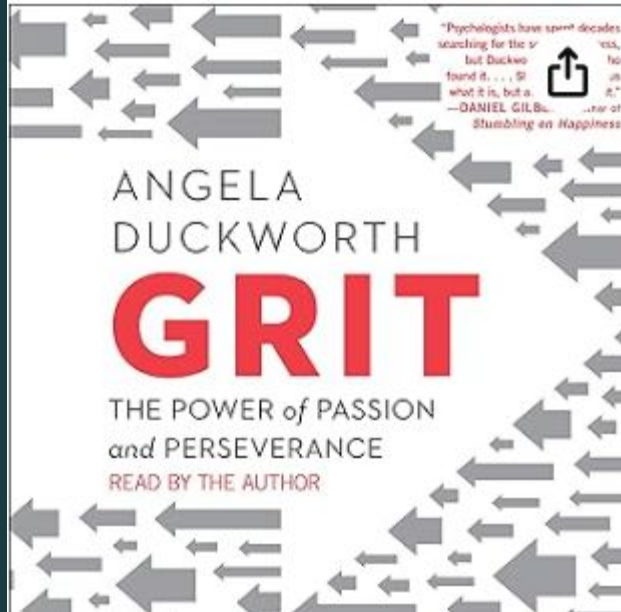
What is Flexibility?

- Trying multiple strategies
- Revising thinking
- Considering other ideas
- Teacher move: Ask 'What else could work?'

What is Grit?

- Persisting through challenge
- Continuing when strategies fail
- Embracing productive struggle

What is Grit?



- Duckworth describes GRIT as the combination of long-term passion and perseverance.
- It is the tendency to sustain interest in and effort toward very long-term, meaningful goals, acting as a "marathon" approach to life rather than a sprint.
- Grit is a key predictor of success, often outweighing talent or IQ

What is Belief?

- Students see themselves as capable mathematicians
- Mistakes are viewed as learning opportunities
- Student reasoning is valued

*How to
co-create
math
agreements
with your
class*



Step 1- Ask great guiding questions

- How do you want to feel when we do math together and solve challenging problems?
- What are things we can do and say to each other when we are stuck on a problem?
- What do you need your classmates to do when you are working together?

Step 2 - Listen to kids and chart everything they say!

Step 3 - Leave your notes on chart paper hanging in your classroom

Step 4 - Add to the list, revise your thinking as needed

MATH Charter

- We want to feel proud when we share our ideas and try something new.
- We want to feel confident when we share our ideas.
- We want our classmates to be interested in our ideas
-

- Living Document
- Reference throughout the day
- Build Evidence
- Revise/edit

Our MATH Charter

* How do we feel about math?

- calm
- energetic
- excited
- curious
- smart
- happy
- joyful
- concentrated
- heard
- focused
- successful

* How do we want others to feel?

- confident
- smart
- welcome
- heard/respected

* What can we DO to feel this way?

- Encourage them! (Cheerleader)
- Listen carefully
- Take risks!
- Participate
- Be persistent! (Never give up)



behavior

Our Math Agreements



We keep trying when problems feel challenging.



We try more than one strategy.



We listen to each other's ideas and refine our thinking.



We celebrate when we revise our thinking.

$$2+2=4$$

Our Math Charter!!!

We are problem solvers in Room 9

What do you do when you are stuck?

How do you get unstuck?



- “When we are stuck we should take a deep breath when we are stuck. Then we will be unstuck”
- “We can help our friends when they are stuck.”
- “It’s okay to get stuck.”
- “We should give a compliment to someone that gets unstuck”
- “We should tell each other to try another way if they are stuck”
- “We should breathe, think and try again”

Our STUCK and UNSTUCK Chart:

Write your name when you are stuck! Write your name when you get unstuck! Tell a friend!

Stuck

Harper
S

Chloe

Jackson

Kevin

Unstuck

Harper
S

Kevin



Room 31 Class Charter



Respected

- Be kind
- Be nice
- Be helpful
- Care for classmates

Safe

- Be in control of your own body
- Be respectful of others privacy
- Be aware of your surroundings

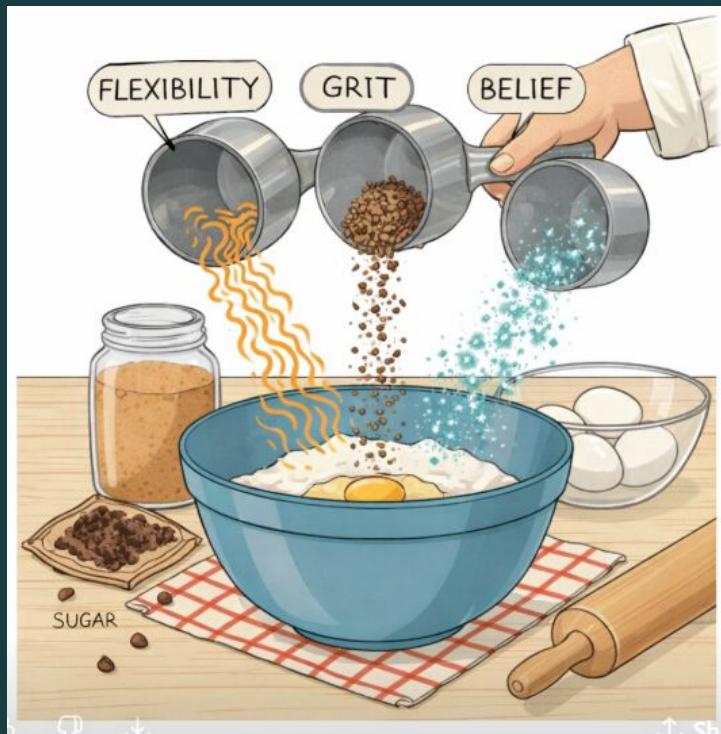
We want to feel.....

Included

- Include everyone in the play, talk, work, coloring
- Be aware of others around you who may be alone, invite them in
- Give positive comments to each other whenever possible

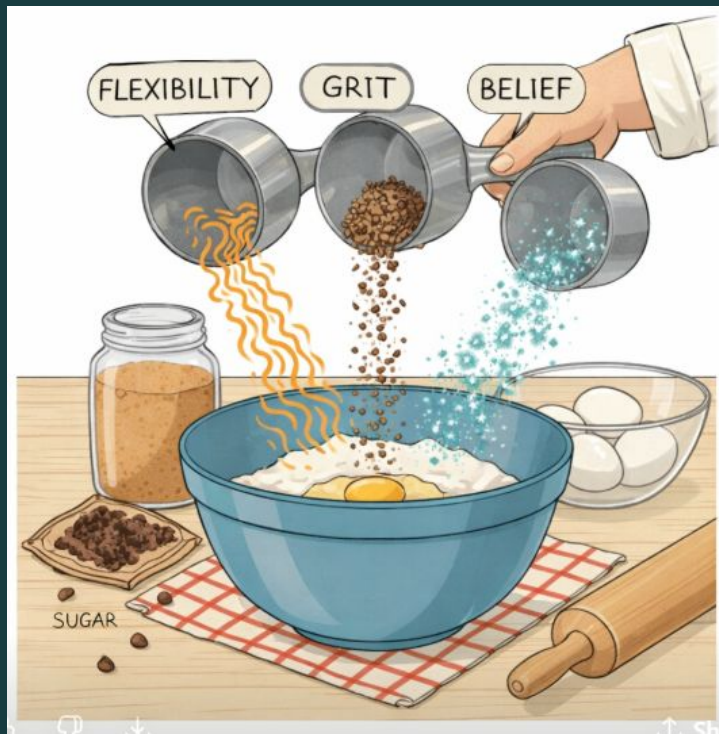
Heard

- One Person speaks at a time
- Value others opinions or thoughts that are different than yours
- Keep your attention on the speaker



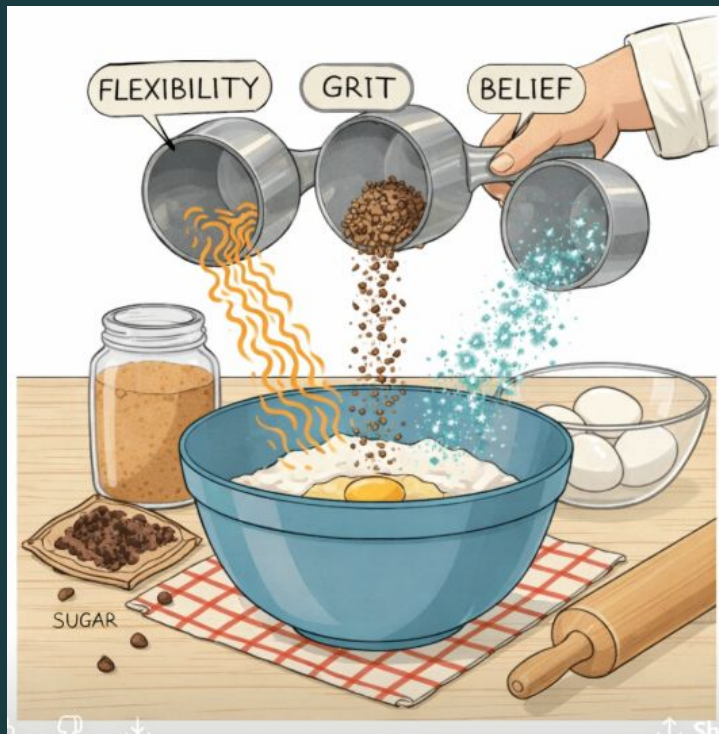
Ingredient #2

**Provide
students with
consistent
access to rich,
grade-level
problem-solving
tasks**



Let's solve a
problem!

**Early in the year,
when I launch a
task, I immerse
students in the
celebration of
revisions, changing
your mind and
flexibility!**

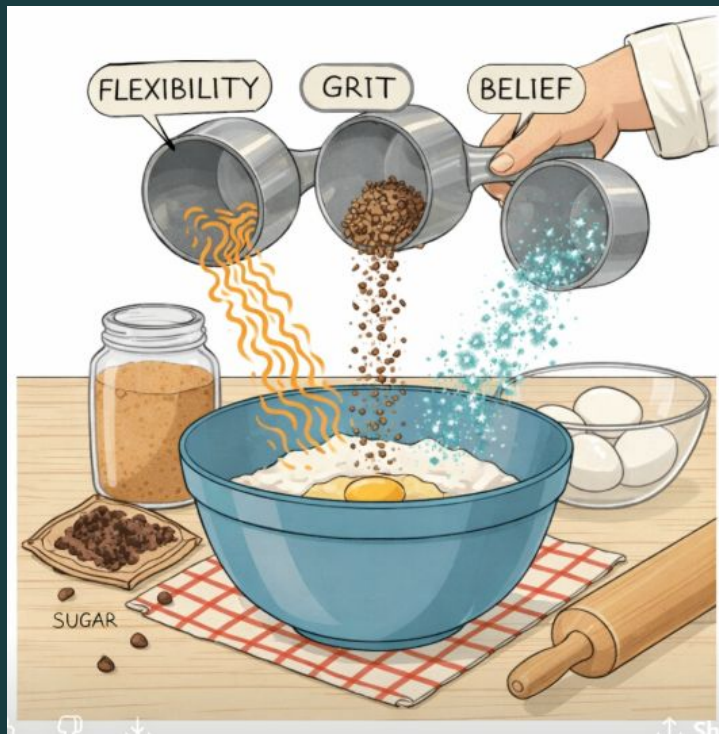


The Recipe!

**Math Under the
Stairwell-
BTC- Year 4
Rockwell School**

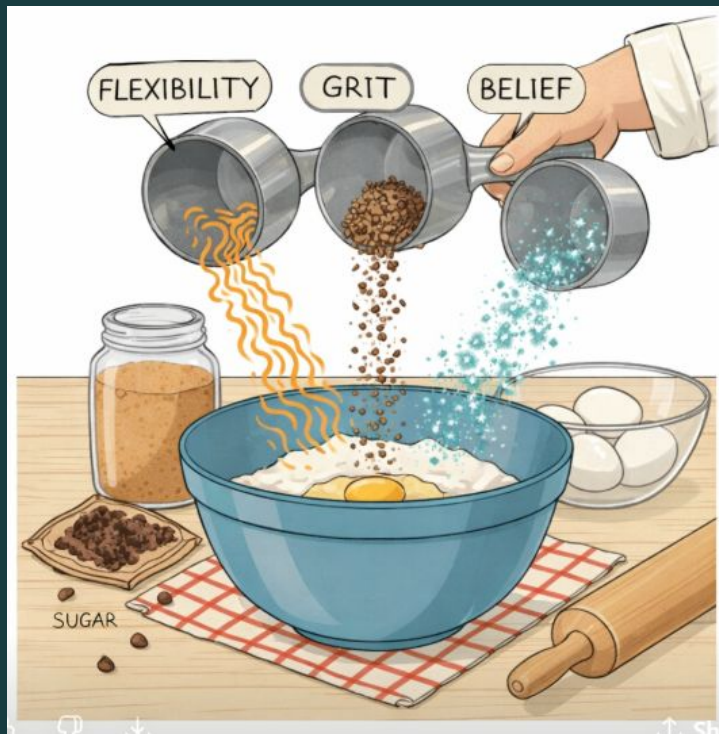
**Week 1 of
School**

9/12/2025



Let's solve a
problem!

**As we tackle one of
my favorite (tried
and true)
problems- I will
model (in real
time) how to shift
the focus from
answer getting to
demonstrating
flexibility!**



Let's solve a
problem!

Choose a number

Find your board

Listen for the problem

Share ideas

**Revise thinking in a
different color**

In Bethel we

1. Shifted the focus from answers to Vision of a Learner Competencies (Vision of a graduate)
2. Developed a system to showcase student thinking
3. Math Under the stairwell
4. Helped teachers develop the skills to not rescue students

In Bethel we

1. Planning for the hints and extensions
2. Recording what students do and say
3. Watching for evidence of the VoL competencies (flexibility, revision etc)
4. Samples of revision work
5. Give audience a problem solving experience
6. Zoom into the thinking skills and revision (color code)

In Bethel we

1. Design learning around rich, grade-level tasks that require multiple strategies (flexibility)
2. Provide consistent opportunities for productive struggle (grit) and reflection on growth (belief)

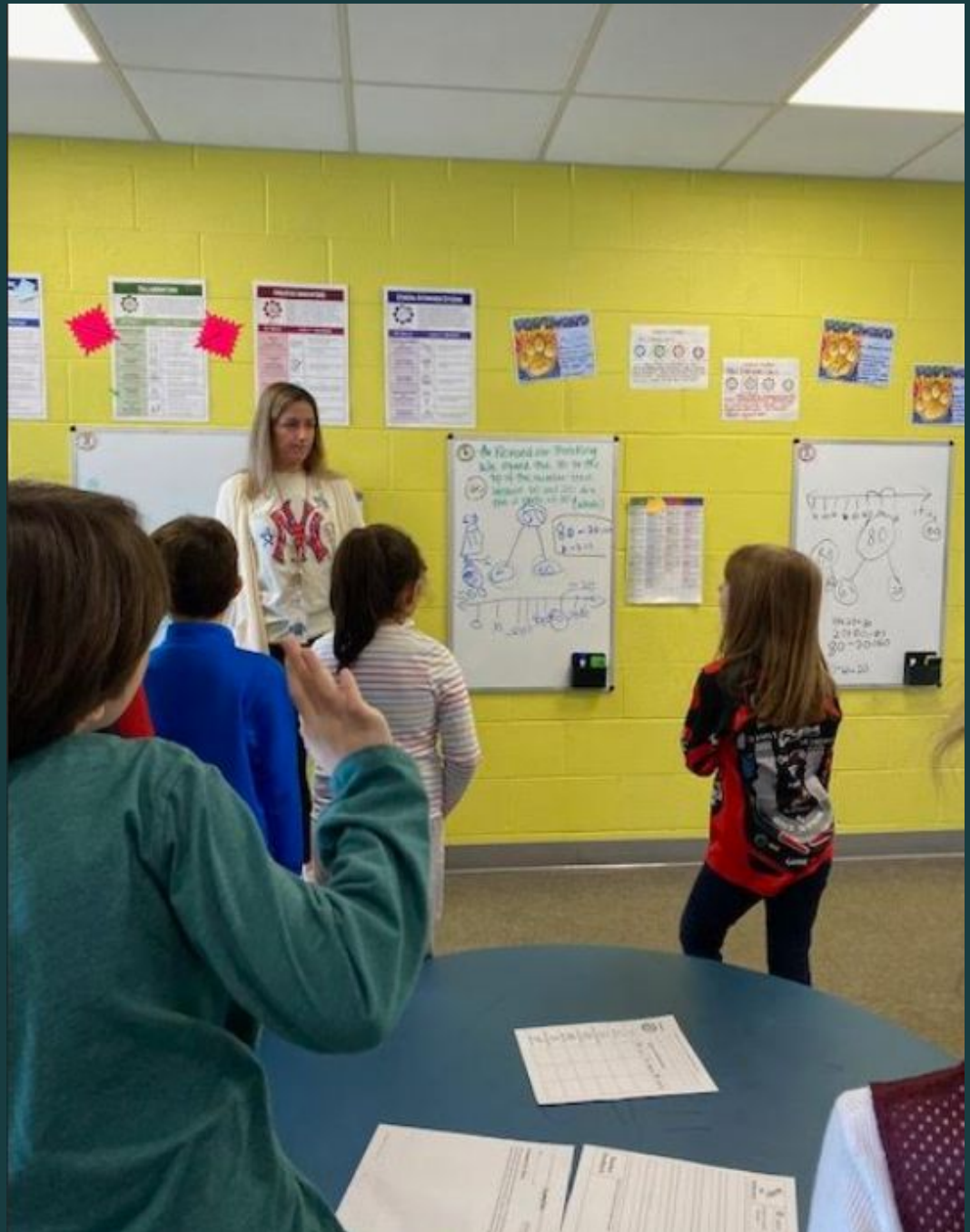
In Bethel we

1. Incorporate Problem Solving into our School Improvement Plans
2. Hold students accountable for thinking
3. Shift our focus on student thinking rather than student answering
4. Build in time to analyze student work
5. Create systems to continue the work

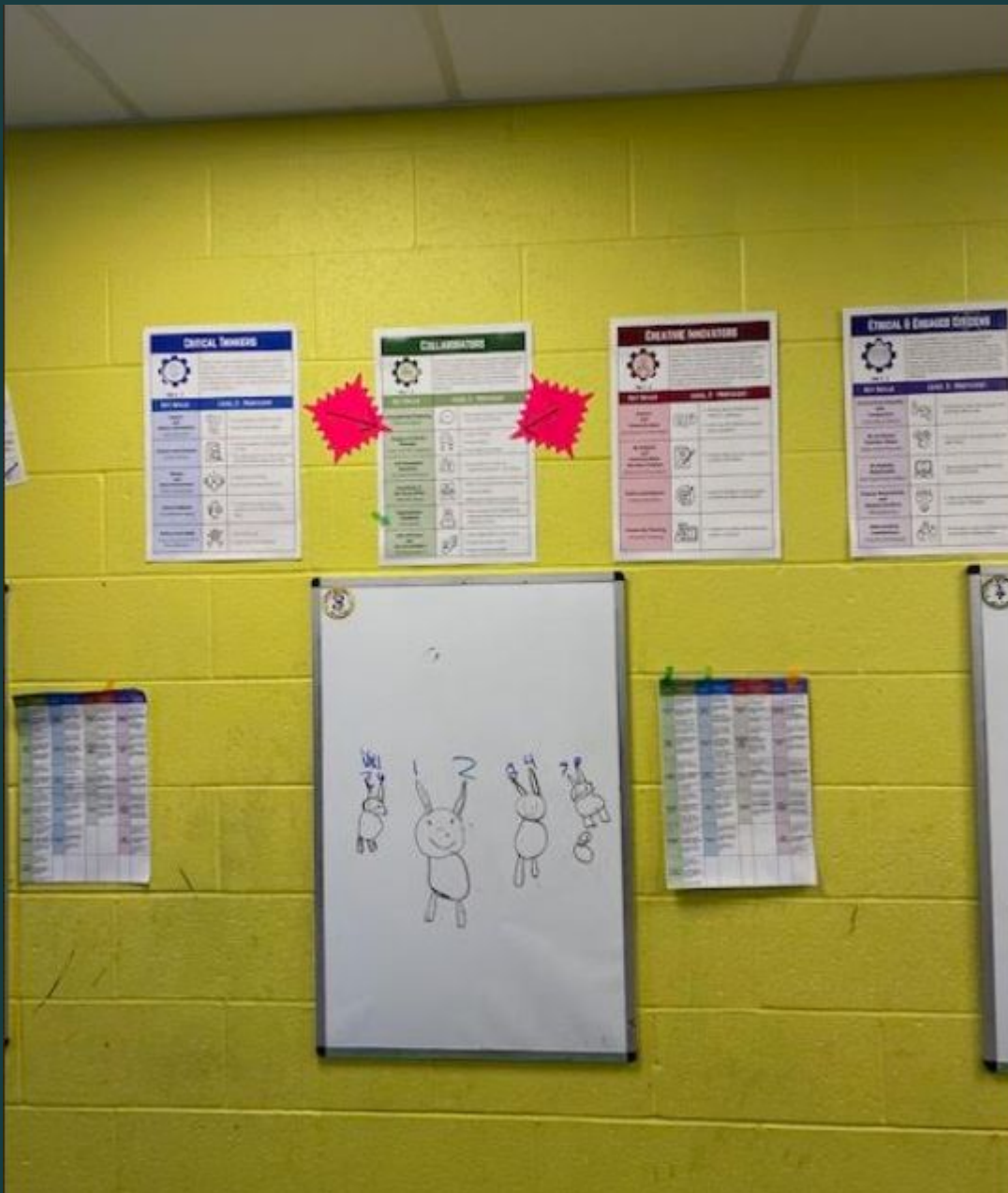
Math Under the Stairs

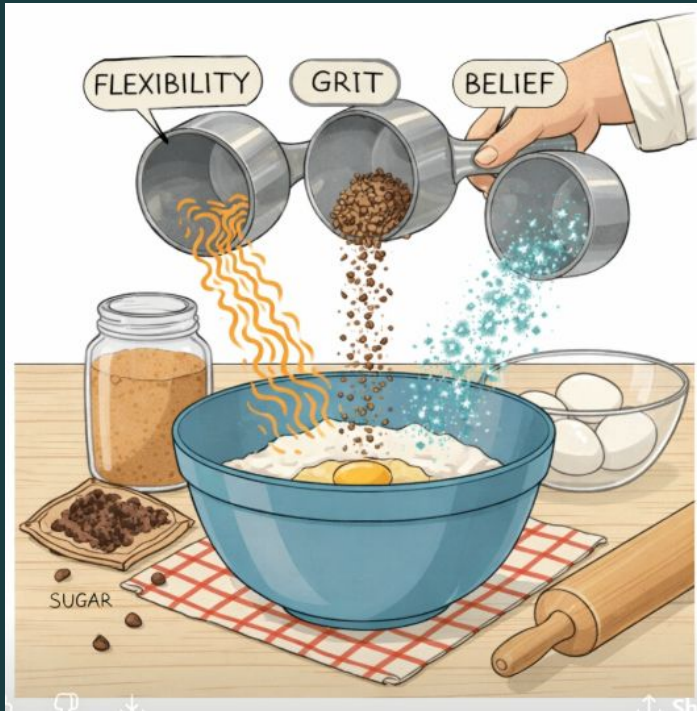


*Building
Thinking
Classrooms
(BTC)
Consolidating
is often
focused on
Flexibility
and Grit*



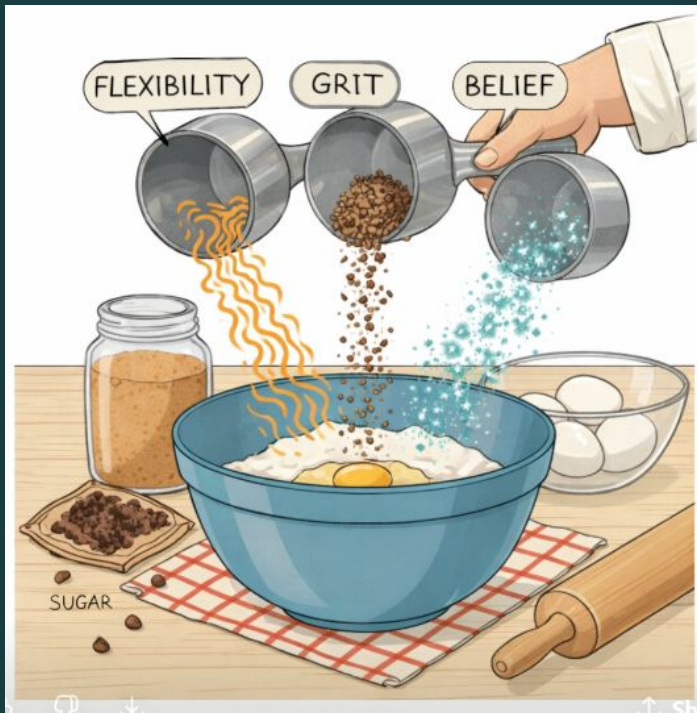
MUTS





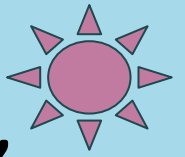
Ingredient #3

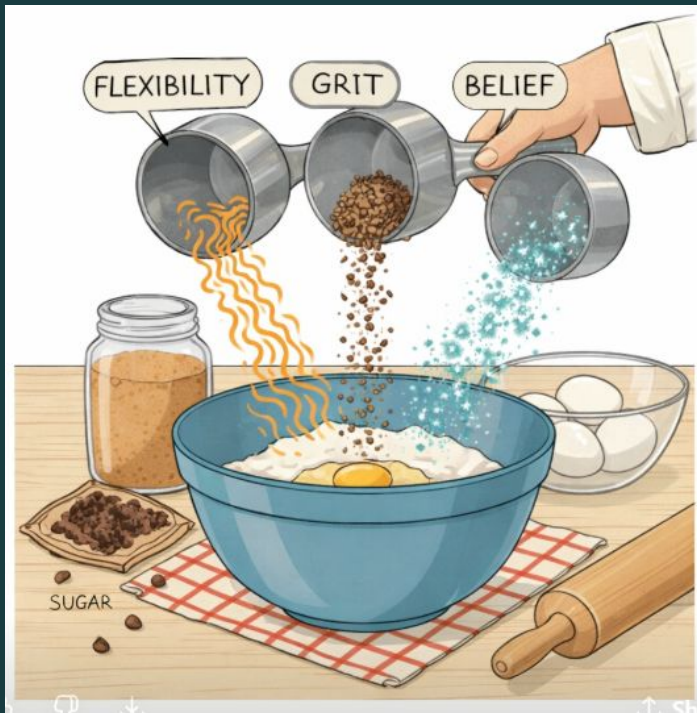
Celebrate
the Process
of Problem
Solving



Ingredient #3

- Make flexibility, grit, and belief visible, discussable, and reflective
- Ground conversations in observable evidence from student work





Ingredient #3

- Intentionally build a culture that celebrates revision, flexibility, grit and belief!



Ask great questions!

Be Curious about Student Reflection

- Show me in your work where your thinking? I can't wait to see it!
- How did you share your ideas multiple ways?
- When did you decide to revise your thinking? Show me!
- Use a different color marker to show others how you refined your thinking!



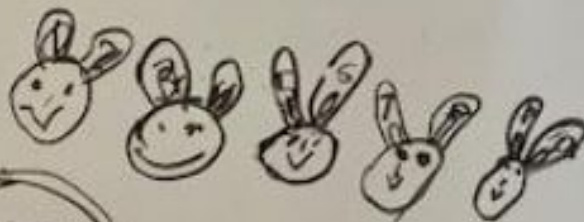
6

First we drew 10 bunnies
but we counted 20
ears. The story said
10 ears so we had to erase some
bunnies.



10

ten ears



5

Five Bunnies

5 ★ We changed because
we were adding the 87 boxes
but we noticed we were
starting with 87 boxes.

$$30 + 30 + 10 = 70$$

$$1 + 6 + 4 = 11$$

$$70 + 11 = 81$$

$$87 - 81 = 6$$

He has to move 6 more boxes.





6

0000

We decided to add what Jackson moved first because it was just easier to add the boxes and then

$$31 + 36 + 14 = \boxed{81}$$

subtract from the total.

$$6 + 4 + 1 = \boxed{11}$$

$$30 + 30 + 10 = \boxed{70}$$

$$\boxed{70} + \boxed{11} = \boxed{81}$$

$$87 - 81 = \boxed{6}$$

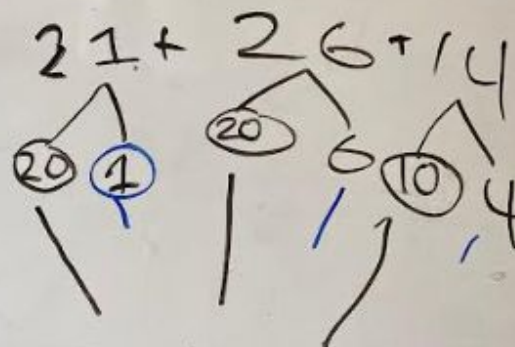
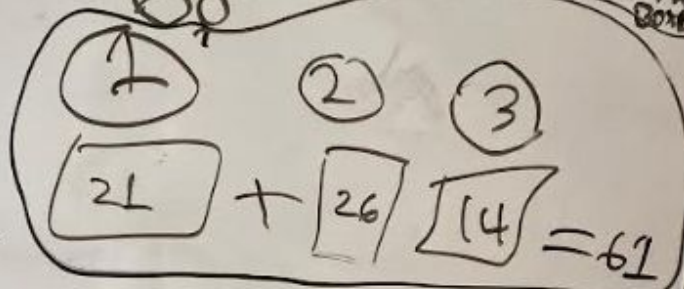
he has to move 6 more boxes



We got
confused in our
notation and decided to try
again.

60 Boxes

When they
move the
boxes



$$20 + 20 + 10 = 50$$

$$6 + 4 = 10$$

$$60 + 4 = 64$$

We are
using 61



Bethel Public Schools Vision of a Learner Competencies and Problem Solving

VISION OF A LEARNER >>>>>



▪ critical thinkers ▪ collaborators ▪ creative innovators ▪ ethical & engaged citizens ▪

Learners will think critically, collaborate effectively, and innovate with curiosity and resilience. They will act ethically, embrace diverse perspectives, and use technology responsibly to positively impact their communities and the world.

VISION OF A LEARNER >>>>



▪ critical thinkers ▪ collaborators ▪ creative innovators ▪ ethical & engaged citizens ▪



Critical thinkers ask thoughtful questions, gather relevant information, consider multiple perspectives, and evaluate ideas to draw well-reasoned conclusions. They reflect on their thinking, remain open to alternative viewpoints, and revise their understanding as needed to make informed decisions and solve complex problems.

Solve Problems (Try Different Ideas)	How can I try different ways to solve a problem until I find one that works best?	• What problem did you solve today? • How many different ways did you try? • Which way worked best?
Reflect and Adapt (Keep Going and Learn from Mistakes)	How can I learn from my mistakes and keep trying?	• Did you make any mistakes? • What did you learn from them? • Did you keep trying?

Building Thinking Classrooms and Vision of a Learner Competencies- A Shift in Focus for Bethel

- The VoL competencies drive the work and the consolidating phase
- Focus is placed on a competency and students and teacher are looking for evidence during the task
- Focus is placed on the process



Creative Innovators challenge and improve existing standards by designing, implementing, and communicating original ideas. Creative Innovators exhibit curiosity, imagination, and flexibility. The creative and curious person is open and responsive to new and diverse perspectives and views failure as an opportunity to learn. They show resilience and persevere through multiple solutions and challenges, making valuable contributions to the world around them.

Key Skills	Essential Questions	Reflection Questions
Explore and Generate Ideas (Be Curious and Try New Ideas)	How can I ask "What if" questions and come up with different ways to solve a problem?	• What new ideas did you have today? • What did you wonder about? • Where did your ideas come from?
Be Original and Inventive While Solving a Problem (Make Something New)	How can I make something new to share with others?	• What did you create today? • Is it something new? • How did you make it?
Refine and Improve (Keep Improving)	How can I listen to feedback and make my work better?	• Did you get any feedback today? • Did you change your idea? • How did you make it better?
Present My Thinking (Show My Thinking)	How can I share my ideas using drawings, words, or actions?	• How did you share your idea? • Did you use words, pictures, or actions? • How did others react?



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Refine and Improve
(Keep Improving)

How can I listen to
feedback and make my
work better?

- Did you get any feedback today?
- Did you change your idea?
- How did you make it better?

Name _____



I am a Creative Innovator!

I Can	 = Got it	 = Almost	 = Not Yet
 Be Curious and Try New Ideas			
 Make Something New			
 Keep Improving			
 Show My Thinking			



I'm a Math Thinker! How Do I Keep Going?



**When It's
Hard...**

Do I Try Again?

How Do I Feel?

 I'm Just
Starting

 "I can't do
it."

 I stop trying.

 I feel upset or want to give
up.

 I'm Getting
Better

 I ask for
help.

 I try again
with help.

 I feel a little frustrated, but
I try.

 I'm a Gritty
Thinker!

 "I'll try a new
way!"

 I fix my
mistakes.

 I feel proud and say, "I can
do hard things!"

Bethel Public Schools Theory of Action

Theory of Action

If we respond to student needs based on assessment data, engage students in challenging, grade-level content, and explicitly teach the skills of collaboration, critical thinking, creativity, and innovation, then we will increase student outcomes.

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Bethel Public Schools School Improvement Plan K-5

Theory of Action

If we respond to student needs based on assessment data, engage students in challenging, grade-level content, and explicitly teach the skills of collaboration, critical thinking, creativity, and innovation, then we will increase student outcomes.

Measures of Student Learning Growth and Achievement 4:

By June, 80% of students will demonstrate proficiency (Practitioner or Expert) on the Exemplars Standards Based Rubric as evidenced by Exemplar problem solving tasks.

Bethel Public Schools School Improvement Plan K-5– Action Steps

Theory of Action

If we respond to student needs based on assessment data, engage students in challenging, grade-level content, and explicitly teach the skills of collaboration, critical thinking, creativity, and innovation, then we will increase student outcomes.

Provide students with targeted, actionable feedback on their growth in critical thinking, collaboration, and creative innovation using the district's global competency rubrics. Feedback will be embedded in small group instruction, conferring, and performance tasks to guide student reflection and next steps..

Bethel Public Schools School Improvement Plan K-5– Action Steps

Theory of Action

If we respond to student needs based on assessment data, engage students in challenging, grade-level content, and explicitly teach the skills of collaboration, critical thinking, creativity, and innovation, then we will increase student outcomes.

Teacher conferencing and whole class/small group instruction includes feedback aligned to Vision of Learner competencies

Student growth in Vision of Learner competencies is celebrated through classroom discussions, shout-outs, or individual goal tracking, and schoolwide assemblies

More BTC Bethel Videos

[Explaining your thinking!](#)

[Sharing my Thinking!](#)

[More Sharing](#)



**3 Ingredients
(Instructional
Moves)**

**you can try
TOMORROW**

**Choose 1 one
to try!**



Create Math Agreements

- Co-construct norms that value thinking, risk-taking, and perseverance



Use Rich Problem Solving Tasks

Provide tasks
that require
deep thinking
and multiple
strategies



Celebrate Revision and Persistence

Create systems to
make strategy
shifts and
perseverance
visible

(Flexibility + Grit)

Closing Thought

- The goal of math classrooms is not just getting the answer
- The goal is students who believe: 'I can figure things out.'
- When students develop flexibility, grit, and belief, they become powerful problem solvers when they leave your classroom

Questions?
What do you want to
know? Ask away!!!



Resources

- Exemplars Performance Tasks (Exemplars)
- Mathematical Tasks for the Thinking Classroom (Peter Liljedahl)
- 3 Act Tasks (Fletcher)
- Mrs. Legnard's Favorite Math Resources
- Legnard and Meadows EdWeb Webinar
- Bethel Public Schools Vision of a Learner Poster

Thank You!

*Please reach out anytime
if you need a thought
partner!*

Danielle Legnard
legnardd@bethel.k12.ct.us



Flexibility • Grit • Belief

