
Joy: The Zeroth Mathematical Practice

— Amy Noelle Parks —
Anita A. Wager



CONAN all new tonight 11/10c

tbs HD

FESTiVUS

**It is now time for
the Airing
of Grievances**



Grievances I am not going to discuss

A national focus on child outcomes, and but not children

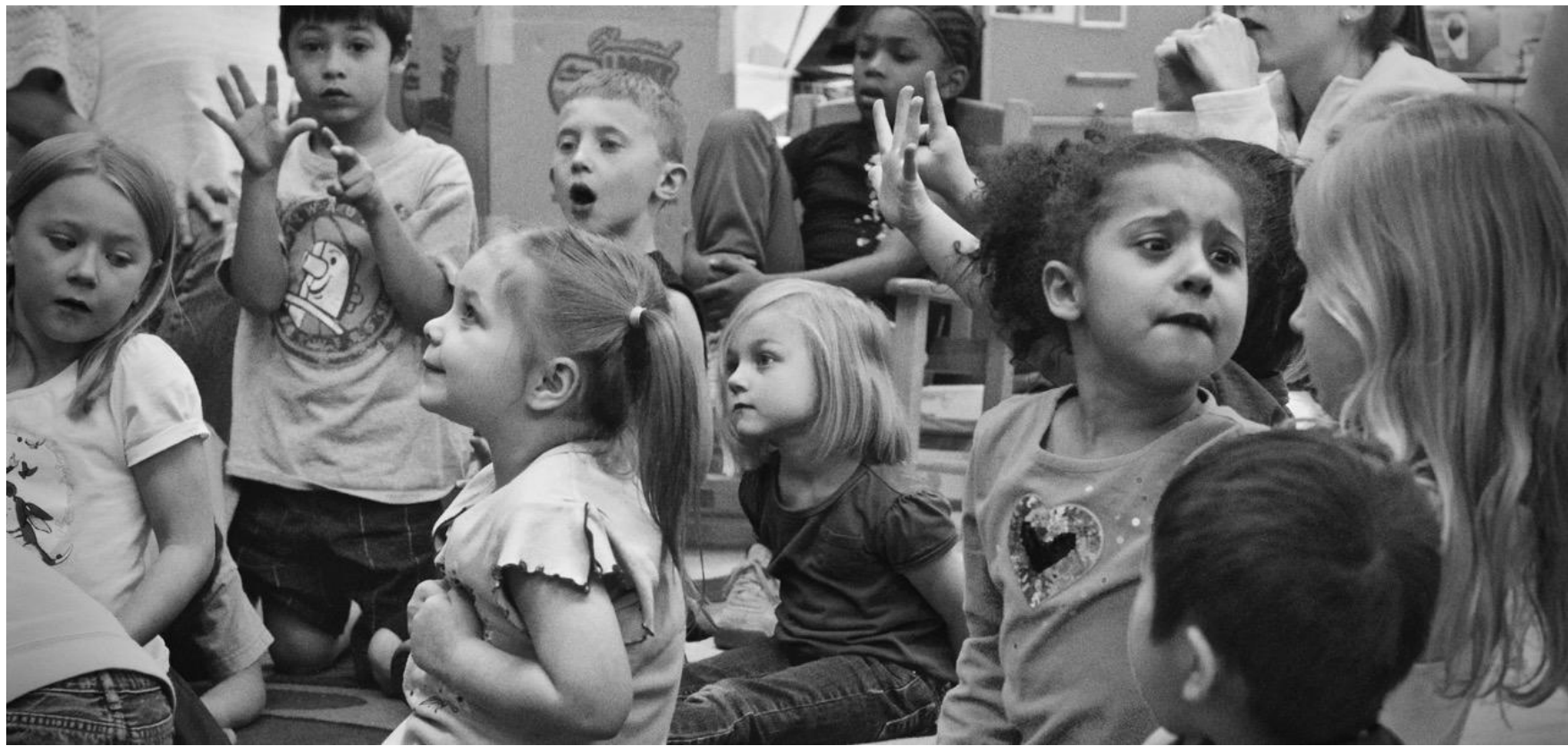
Marginalization of teachers and scholars with early childhood and elementary backgrounds within mathematics education

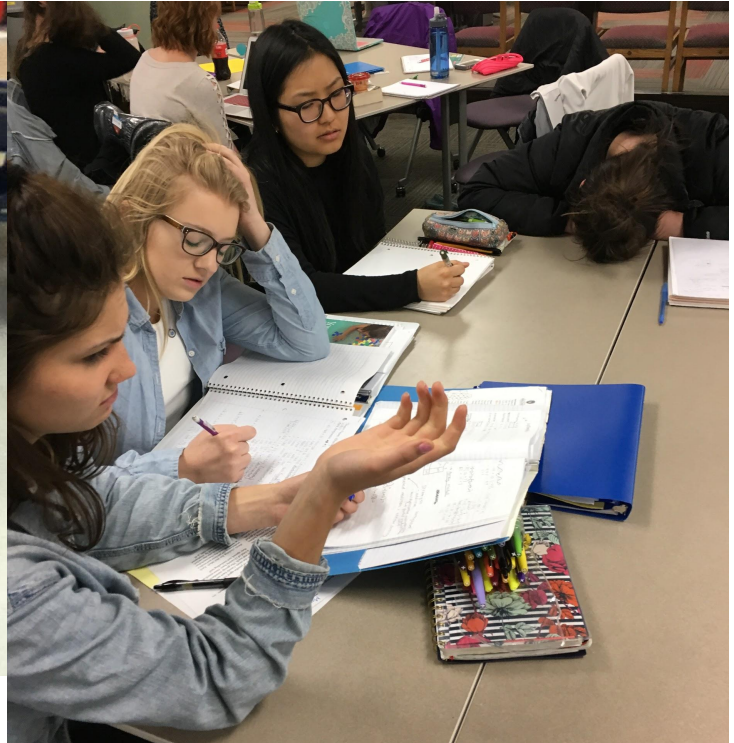
Departmentalization in the primary grades

The high-stakes testing movement

For-profit companies' influence on public schools

Instead





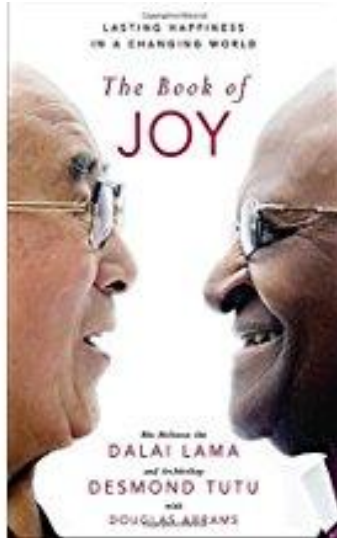
The Zeroth Practice



Engaging in the 8(9) mathematical practices

0. JOY
1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

From the Dalai Lama & Desmond Tutu



“Being joyful is not just about having more fun. We’re talking about a more empathetic, more empowered, even more spiritual state of mind that is totally engaged with the world,”

(Lama, Tutu & Abrams, 2016, p. 63)

The Dalai Lama has said Joy includes:

Pleasure

Bliss

Amusement

Exultation

Contentment

Pride

Excitement

Elevation

Relief

Gratitude

Wonder

The Dalai Lama has said Joy includes:

Pleasure

Bliss

Amusement

Exultation

Contentment

Pride

Excitement

Elevation

Relief

Gratitude

Wonder

Your moment of joy...

Research on Mindfulness slide

“during stressful times it is possible to connect with a slow, still awareness that lies beneath the surface of moment-to-moment experiences; an awareness that remains undisturbed, able to witness the regular flow of thoughts, sensations, and emotions—and then let them go”

“Mindfulness training strengthens one’s capacity to pay attention, nonjudgmentally, to one’s thoughts, feelings, and body sensations, thereby enabling a more skillful response to life’s challenges.”

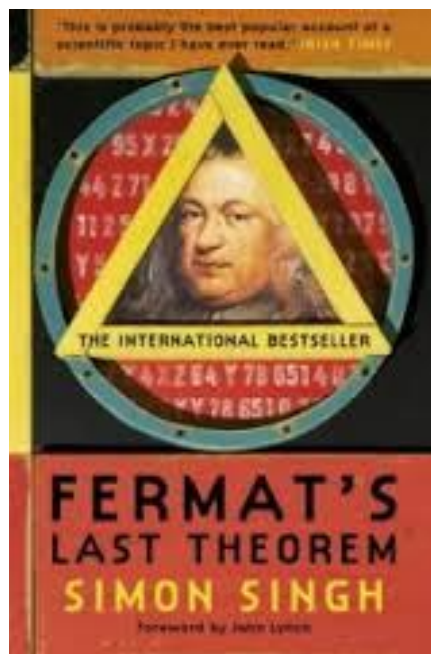
Soloway, Poulin, & Mackenzie, 2010

Connections to Happiness Scholarship

- Pleasant Life
- Flow
- Meaningful Life

(Csikszentmihalyi, 1990; Delle Fave & Massimini, 2005; Seligman, 2002)

Joy in Mathematics



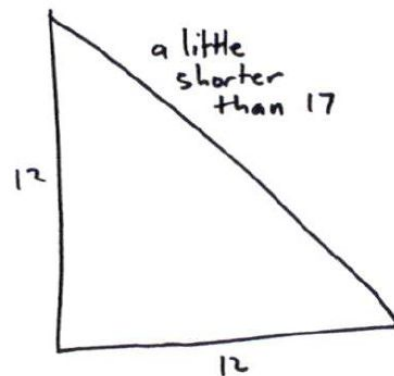
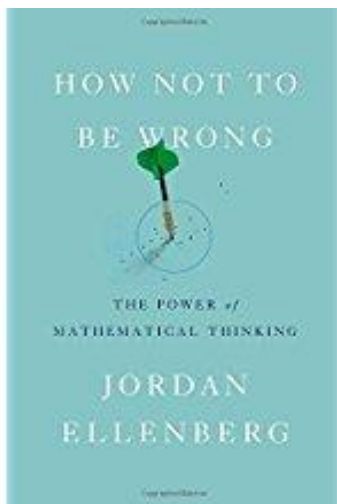
Fermat's Last theorem

There are no three positive integers
 x , y , and z for which

$$x^n + y^n = z^n$$

for any integer $n > 2$

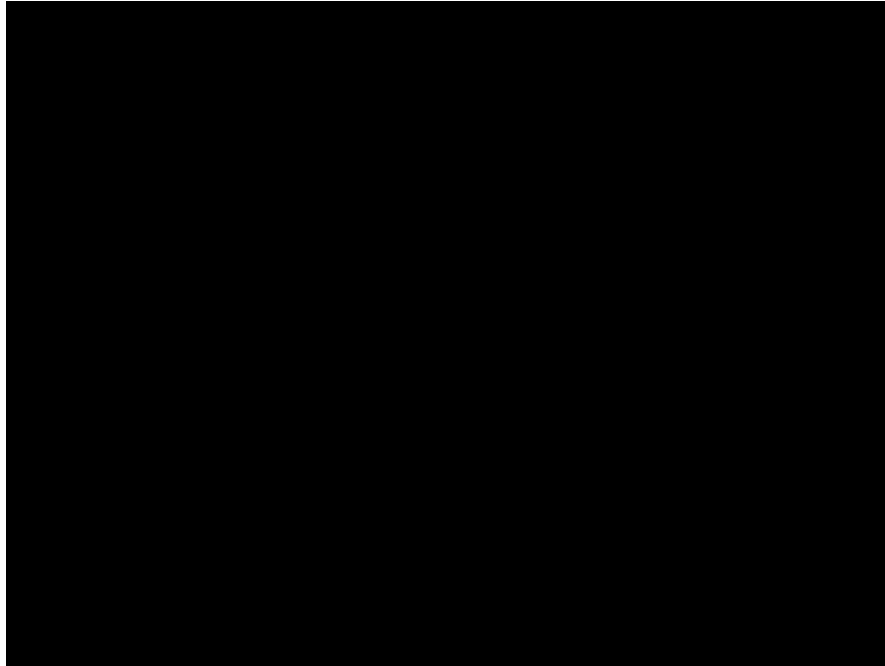
Joy in Mathematics



“Learning is profoundly bound up with pleasure. Certainly, learning can be made an erotic, highly pleasurable activity. Now, that a teacher should be incapable of revealing this, that his job should virtually consist of showing how unpleasant, sad, dull and unerotic learning is -- to me this is an incredible achievement. But it is an achievement that certainly has its *raison d'être*. We need to know why our society considers it so important to show that learning is sad; maybe it's because of the number of people who are excluded from it.”

(Foucault, 1989, p. 135-136).

Joy in early childhood classroom



Joy in elementary classrooms

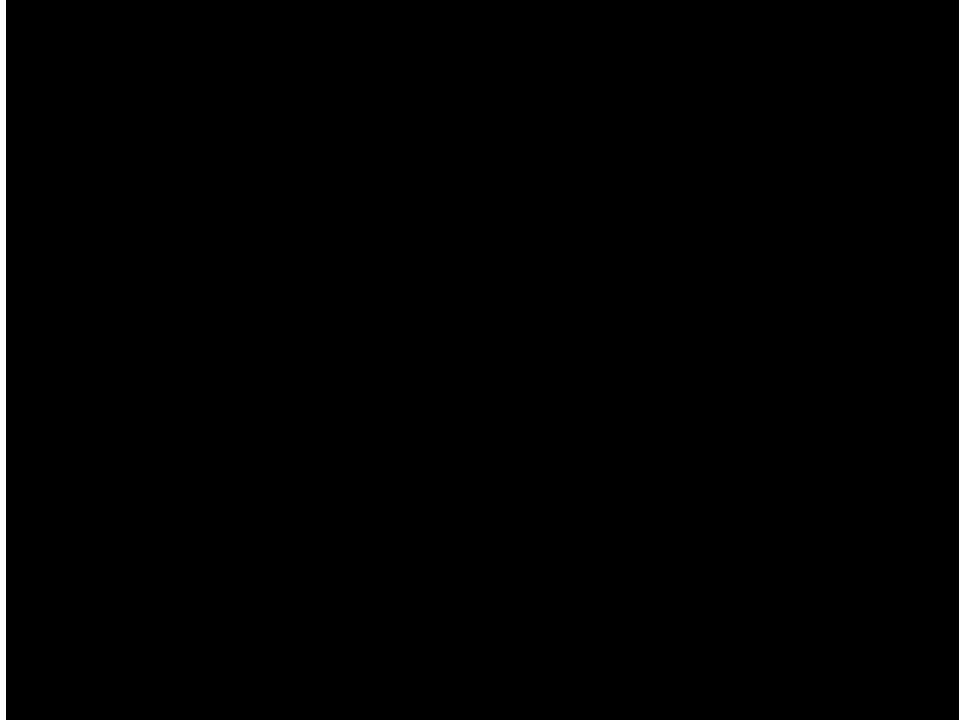
Angus's mom bought 16 38 86 ice cream sandwiches.

Then she bought a bunch of popsicles.

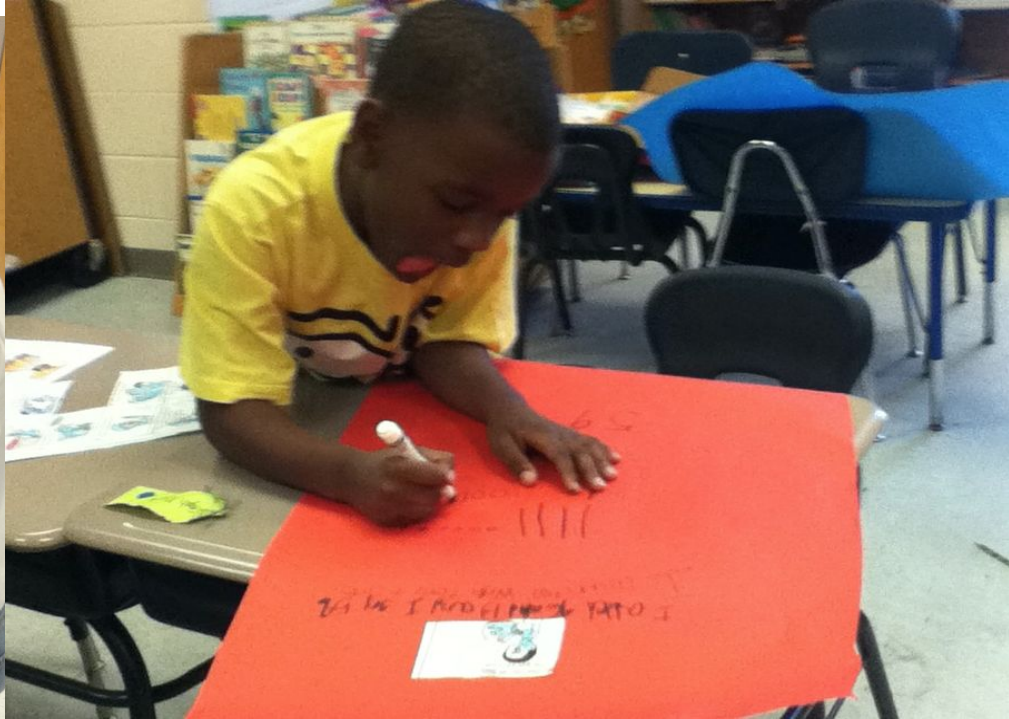
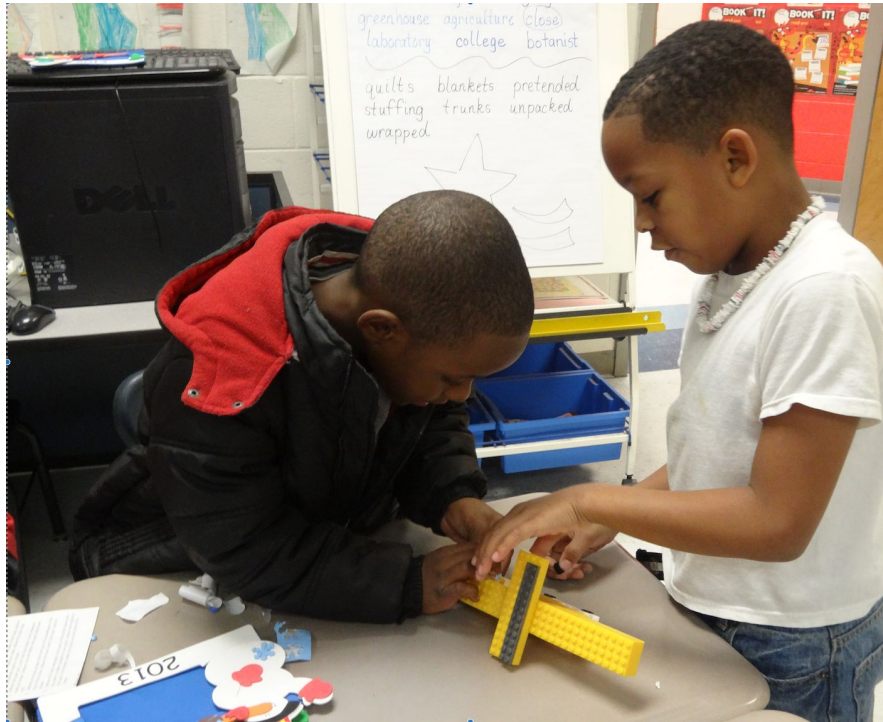
Angus counted 20 50 123 treats in the freezer.

How many popsicles did his mom buy?

Joy in elementary classrooms



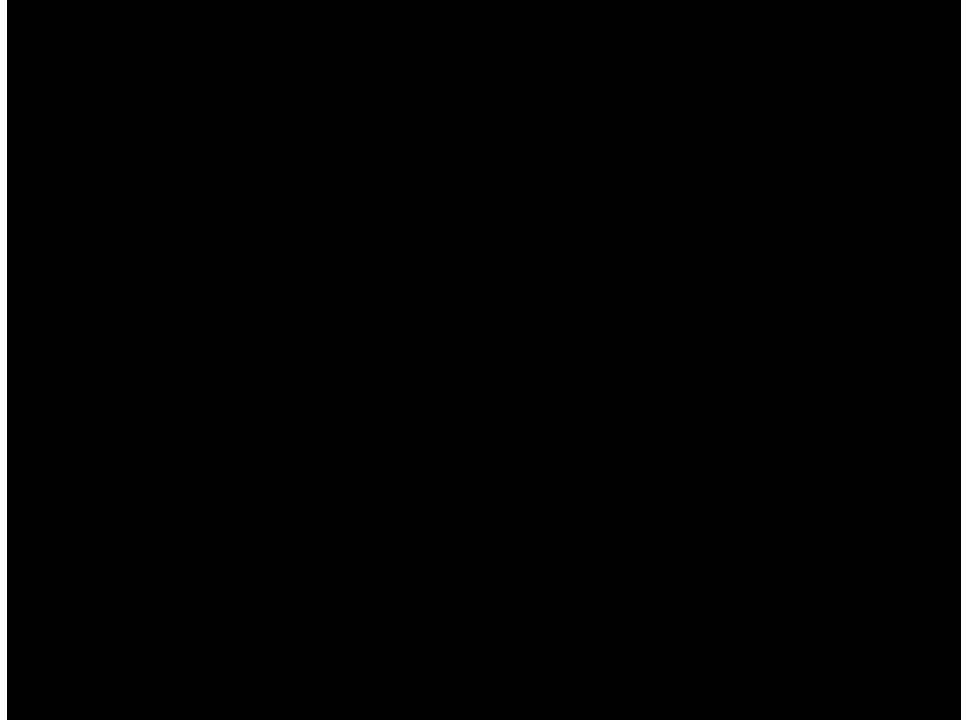
Joy in elementary classrooms



Joy in Mathematics Methods Classrooms



Joy in Mathematics Methods Classrooms



Obstacles to Joy

Fear

Stress

Anxiety

Frustration

Anger

Sadness

Grief

Despair

Loneliness

Envy

Suffering

Obstacles to Joy

Fear

Stress

Anxiety

Frustration

Anger

Sadness

Grief

Despair

Loneliness

Envy

Suffering

Where are your obstacles to joy?

Obstacle to Joy Cycle: Learning targets

“If you own a global positioning system (GPS), you probably can't imagine taking a trip without it. Unlike a printed map, a GPS provides up-to-the-minute information about where you are, the distance to your destination, how long until you get there, and exactly what to do when you make a wrong turn. But a GPS can't do any of that without a precise description of where you want to go,” (Moss, Brookhardt & Long, 2011, p. 66.)

“Developing Mental Immunity”

“Now ask yourself, “Is my thought true? How do I know for sure? Does it help the situation?”

“For anger, you can ask yourself what is its use?”

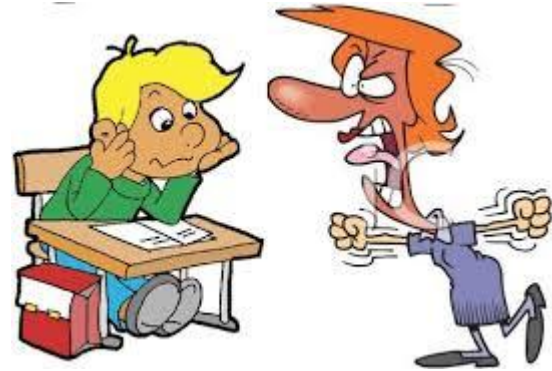
“For sadness, we can reach out for comfort or count our blessings.”

(Lama, Tutu & Abrams, 2016, pp. 312-314).

Using Joy to Make Decisions

Using Joy to Make Decisions

Math Autobiographies



Using Joy to Make Decisions

22	Mental computation Working with others	Respectful of others	Very kind! Substitute table captain
23	Mental computation Multiplication facts	On task TASK Class: works with others	Thoughtful and amazing questions and ideas!
24	Mental computation	Perceptive of others Listens to teacher very well Body language	Comic books! Loves to write books!
25	Place value Divisibility rules	Working in teams in Social studies	Homework board attendant Thoughtful
26	Persistence Hardworking	Sharing her ideas On task behavior in groups	Thoughtful! Strong friendships
27	Always chooses challenge packet Explaining his ideas Strategizing	Works well with others Keeps on task Thoughtful questions and ideas in discussions	Alternative team captain Kind Strong friendships

Questions we're thinking about as we move toward Joy

With so much pain and fear and anxiety in the world, how do we act as researchers and teachers in ways that are joyful but that still seriously engage with the suffering of others?

How do we meet the demands of our institutions while still committing to the work that brings us joy?

“This day should be meaningful. Meaningful means, if possible, serve and help others. If not possible, then at least not to harm others. That’s a meaningful day.”

-- Dalai Lama