

**BUILDING COMMUNITY,
TEACHING MATH, OR BOTH?
THE ANSWER IS "BOTH".**

MORGAN TREVATHAN

JOEL AMIDON

UNIVERSITY OF MISSISSIPPI

MET'S MISSION STATEMENT

The Mathematics Education Trust channels the generosity of contributors through the creation and funding of grants, awards, honors, and other projects that support the improvement of mathematics teaching and learning.

7-12 CLASSROOM RESEARCH GRANT

Awardees

Joel Amidon,

University of Mississippi

Virge Cornelius

Morgan Trevathan

Lafayette High School, Oxford, MS



**MATHEMATICS
EDUCATION TRUST**

7-12 CLASSROOM RESEARCH GRANT

Purpose of this grant is to support and encourage classroom-based research in precollege mathematics education

Research must be a collaborative effort



**MATHEMATICS
EDUCATION TRUST**

7-12 CLASSROOM RESEARCH GRANT

Possible Research

- **Curriculum development/implementation**
- **Involvement of at-risk or minority students**
- **Students' thinking about a particular math concept or set of concepts**
- **Connection of mathematics to other disciplines**
- **Focused learning and teaching of math with embedded use of technology**
- **Innovative assessment or evaluation strategies**



**MATHEMATICS
EDUCATION TRUST**

MET GRANT APPLICATIONS

- Due twice per year
 - First week of May
 - First week of November
- Typically for one year of work
- Applications are brief
- Funding within two months

A MET GRANT EXAMPLE

7-12 CLASSROOM RESEARCH GRANT



MATHEMATICS
EDUCATION TRUST

A MET GRANT EXAMPLE

7-12 CLASSROOM RESEARCH GRANT

**CREATING SPACE FOR ADVANCING THE
PROGRESSIVE TEACHING OF MATHEMATICS**



**MATHEMATICS
EDUCATION TRUST**

SPACE

SPACE

the freedom and scope to live, think,
and develop...

MOTIVATION

the long haul

an autobiography



myles horton
with judith kohl & herbert kohl

RESEARCH QUESTIONS

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

WHAT HAPPENED

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

VIRGE

Circuit Training -- Solving Quadratic Equations (Mixed Methods)

Beginning in cell #1, solve the quadratic equation by the indicated method. In each case, to advance in the circuit, you will need to *do something* with your solutions and then hunt for that answer. Mark the next cell #2 and proceed in this manner until you complete the circuit.

<p>Answer: -1.2 #1 Solve by factoring: $x^2 - 9 = 0$.</p> <p>Now, find the product of your solutions.</p>	<p>Answer: $\frac{5}{2}$ # _____ Solve $x(x - 1) = 30$ by factoring.</p> <p>Now, find the sum of your solutions.</p>
<p>Answer: 16.75 # _____ Solve by the quadratic formula. $x^2 - 2x = 8$</p> <p>Now, find the smaller answer.</p>	<p>Answer: 0.7 # _____ Solve by completing the square. To advance in the circuit, hunt for twice the larger root. $x^2 - 9x + 3 = 0$</p>
<p>Answer: $-\frac{7}{3}$ # _____ Solve by factoring $x^2 - 2x - 8 = 0$.</p> <p>Now, find the larger of your two solutions.</p>	<p>Answer: 1 # _____ Solve by graphing. Sketch the picture! $9 - x^2 = -7$</p> <p>Now, find the smaller of your answers.</p>

Progressions Documents for the Common Core Math Standards

Funded by the Brookhill Foundation

Progressions

- [Draft Front Matter](#)
- [Draft K-6 Progression on Geometry](#)
- [Draft K-5 Progression on Measurement and Data \(measurement part\)](#)
- [Draft K-5 progression on Measurement and Data \(data part\)](#)
- [Draft K-5 Progression on Number and Operations in Base Ten](#)
- [Draft K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking](#)
- [Draft 3-5 Progression on Number and Operations—Fractions](#)
- [Draft 6-8 Progression on Statistics and Probability](#)
- [Draft 6-8 Progression on Expressions and Equations](#)
- [Draft 6-8 Progression on The Number System; High School, Number](#)
- [Draft 6-7 Progression on Ratios and Proportional Relationships](#)
- [Draft High School Progression on Statistics and Probability](#)
- [Draft High School Progression on Algebra](#)
- [Draft High School Progression on Functions](#)
- [Draft High School Progression on Modeling](#)

MORGAN

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

All Grades

Cooperative Learning

Dr. Spencer Kagan



Starting Expectations

1st

Algebra I

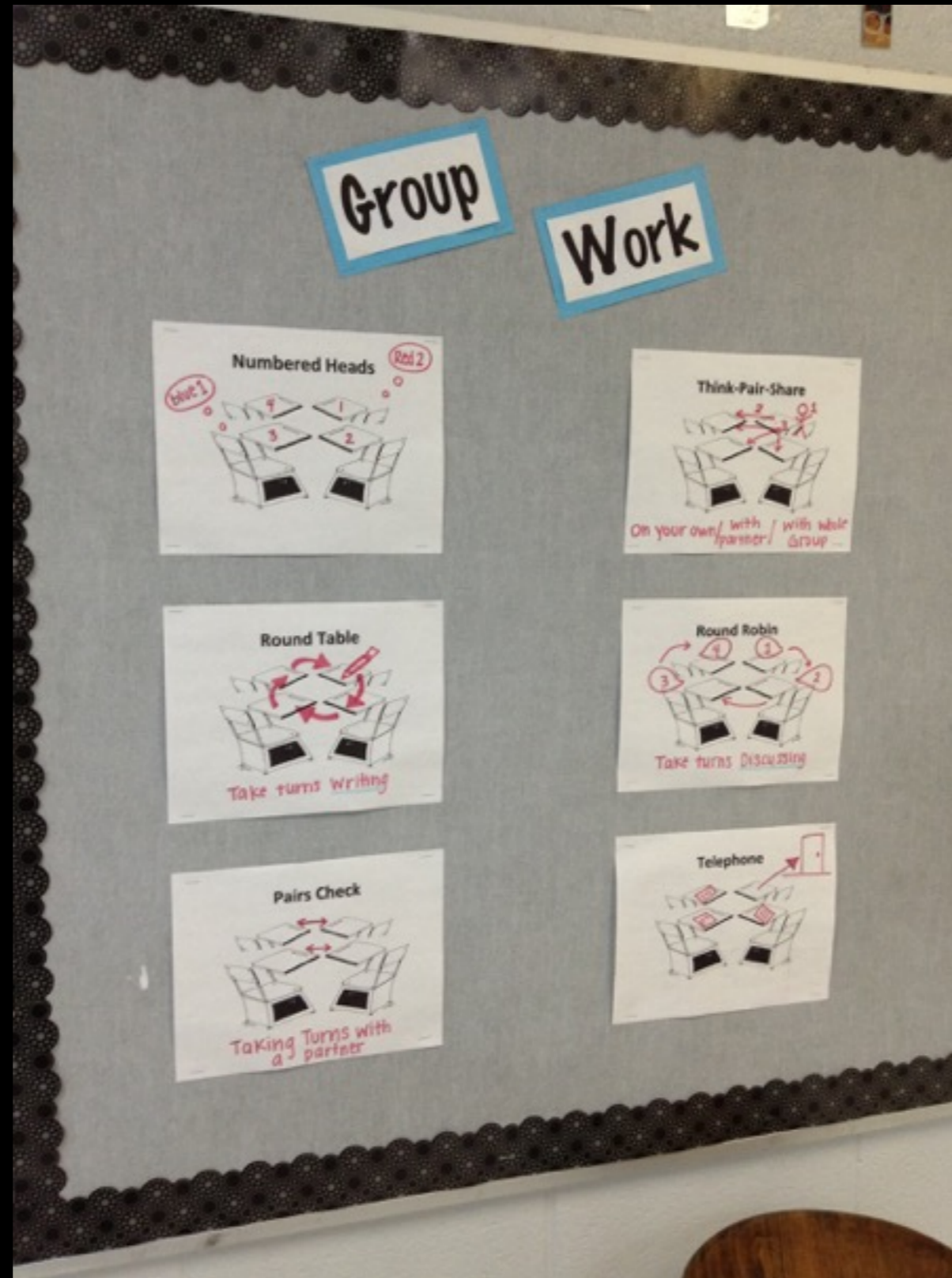
Nine Weeks Pacing Guide

Week 1	Order of Operations Writing Algebraic Expressions Simplify and Evaluate Expressions Quiz 1	→ Think, pair, share → draw what I say → Telephone
Week 2	Solving One Step Equations Solving Multi-Step Equations Real World Equations Solving with Variables on both sides Quiz 2	} round table } round robin
Week 3	Solving Various Equations Solving Equations for specific Variables (using formula sheet) Matrices (Adding, Subtracting, Multiplying by Scalar) Chapter 1-2 Test	→ pairs check → numbered heads
Week 4	Transform Inequalities Solving Inequalities Graphing Inequalities Real World Inequalities Quiz 3	} some kind of inequality group project/investigation

1st

Week 5	Solving Compound Inequalities Absolute Value Equations Absolute Value Inequalities Quiz 4	(partners) → think, pair, share } → pairs check
Week 6	Review all Inequalities Absolute Value Word Problems Chapter Test	} workstation group review
Week 7	Plotting Points on Coordinate Plane Ordered pairs from tables and graphs Domain and Range Functions: Linear, Quadratic, Absolute Value Quiz 5	→ round table → numbered head darts → pass a graph (that they draw on their own)
Week 8	Characteristics of tables, graphs, and equations Graphing Real World Situations "Fun with Functions" Quiz 6	→ W.S. speed dating
Week 9	9 - Weeks Review 9 - Weeks Test	} inside - outside circle } workstation group review

Fitting Group Work to the Math



How the classroom looked



All Grades

Cooperative Learning

Dr. Spencer Kagan



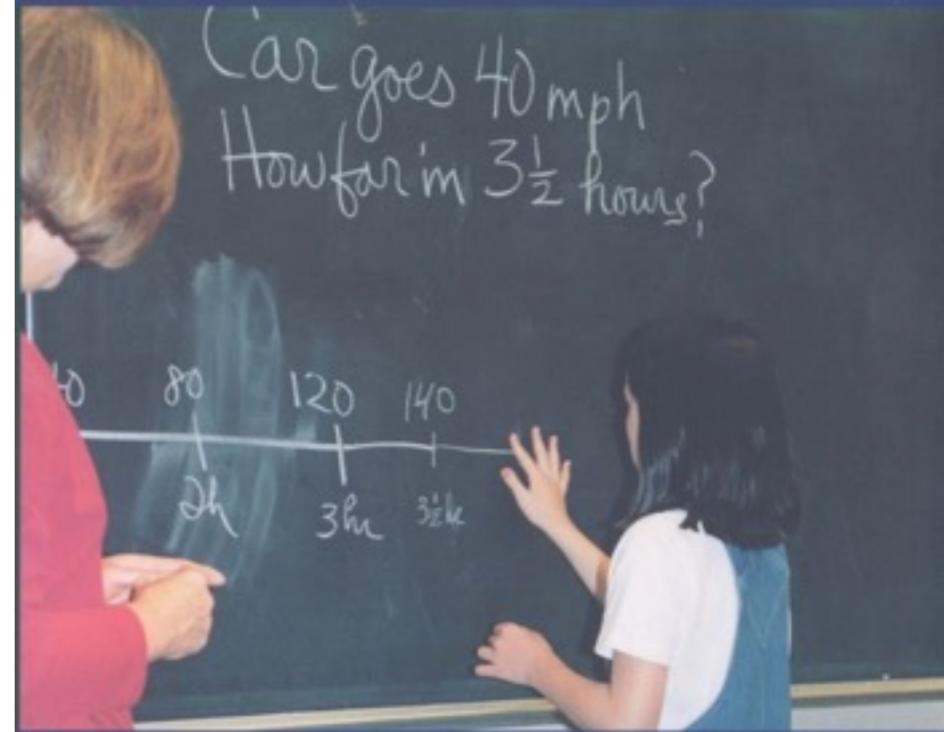
All Grades

Cooperative Learning

Dr. Spencer Kagan



TEACHING PROBLEMS AND THE



PROBLEMS OF TEACHING

MAGDALENE LAMPERT

She said she was puzzled by her 6th period class, and she even said "embarrassed". She said she didn't know how to handle the class because they are constantly talking and cannot efficiently deliver material. She was embarrassed by their behavior and didn't know what to do.

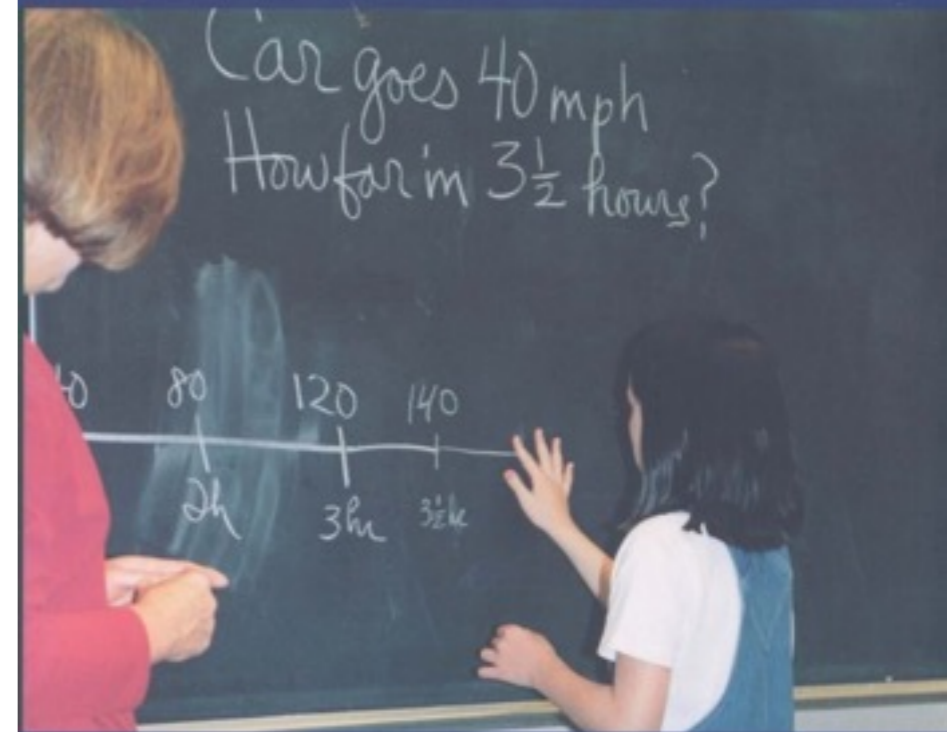
All Grades

Cooperative Learning

Dr. Spencer Kagan



TEACHING PROBLEMS AND THE



PROBLEMS OF TEACHING

MAGDALENE LAMPERT

Designing Groupwork

SECOND EDITION



Strategies for the
Heterogeneous Classroom

ELIZABETH G. COHEN

Foreword by John L. Goodlad

All Grades

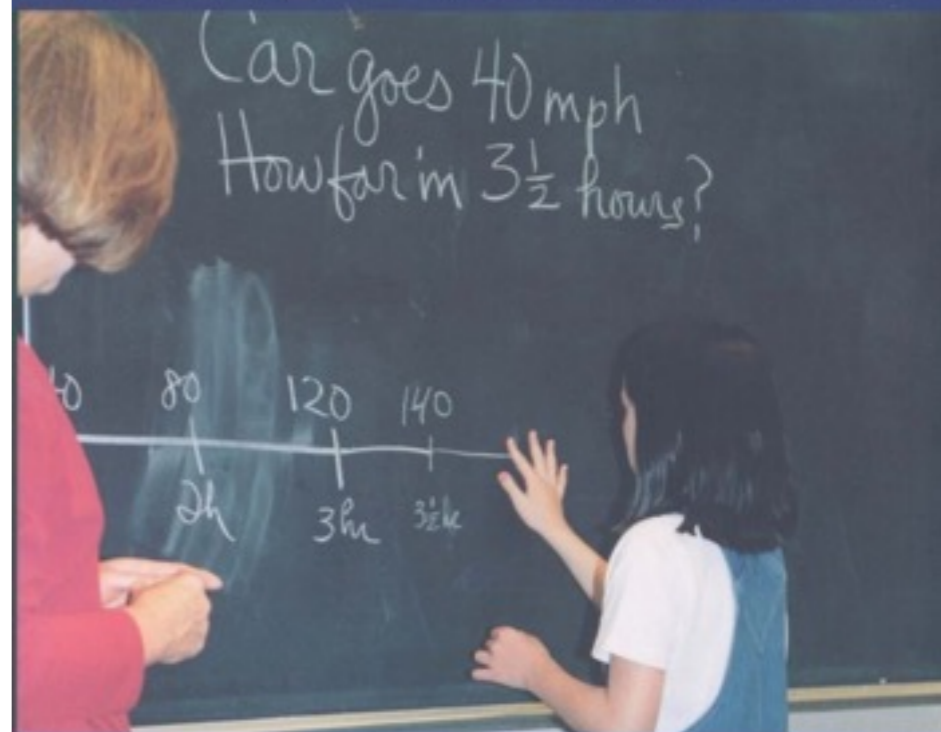
Cooperative Learning

Dr. Spencer Kagan



KCL: BCL

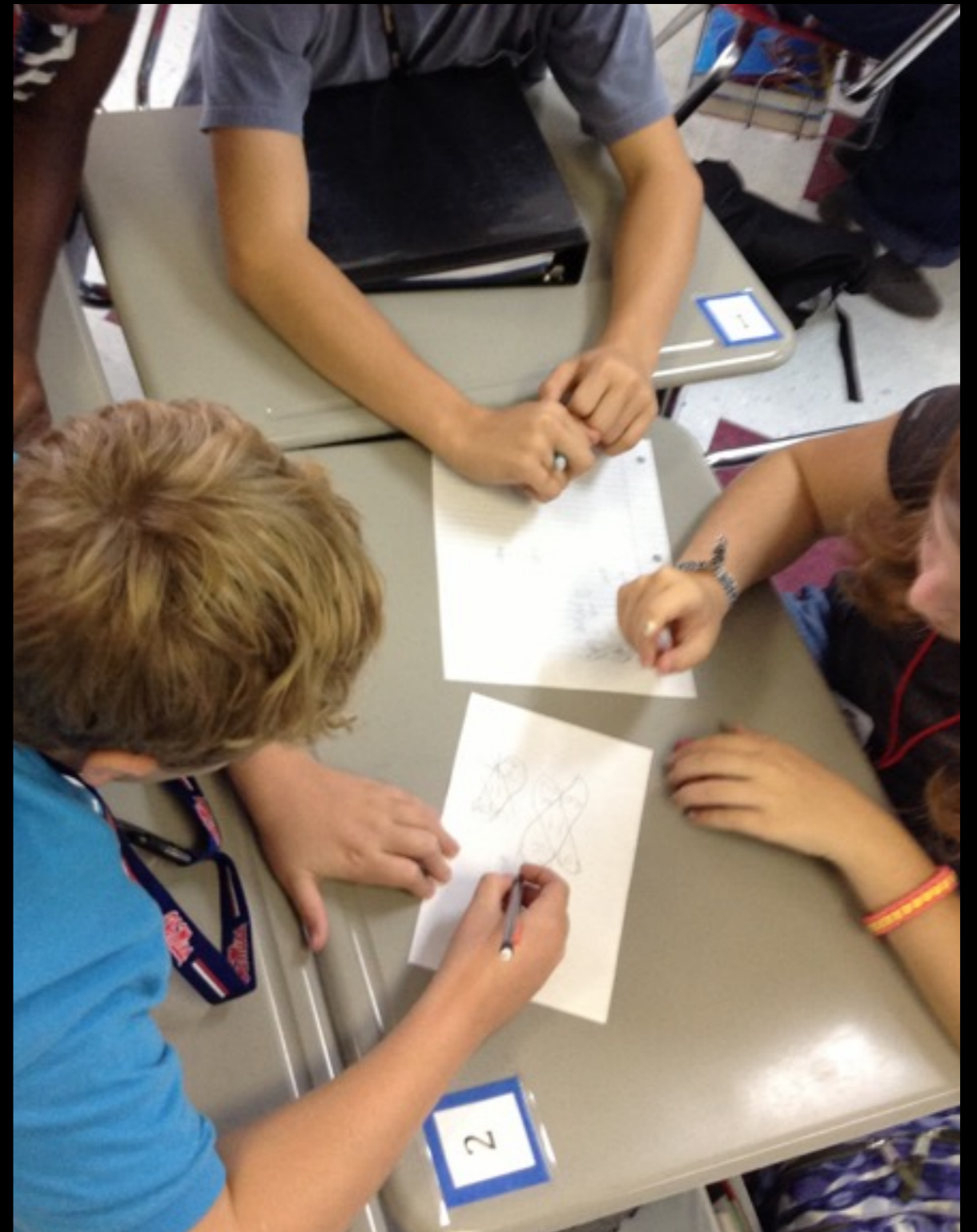
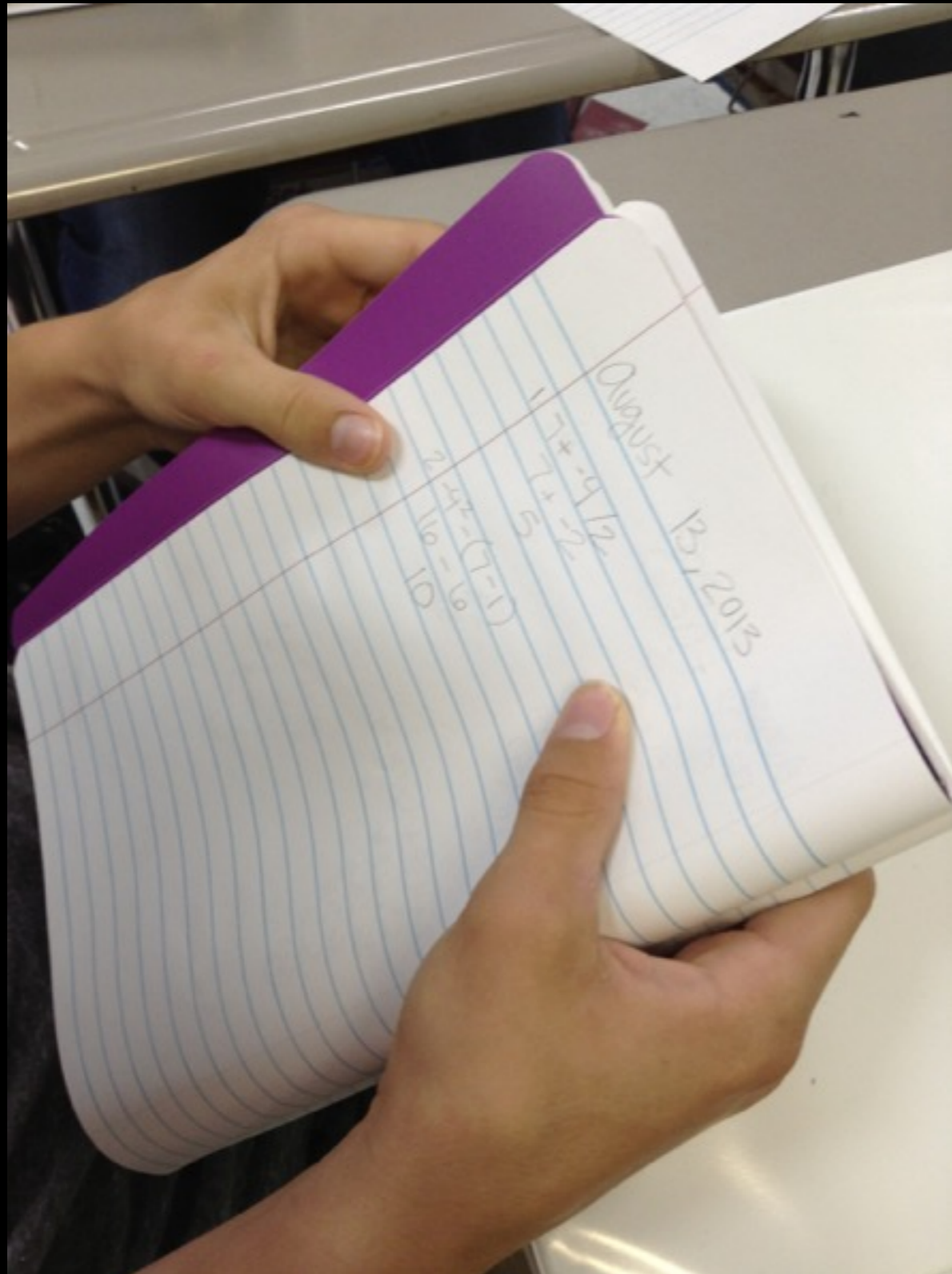
TEACHING PROBLEMS AND THE



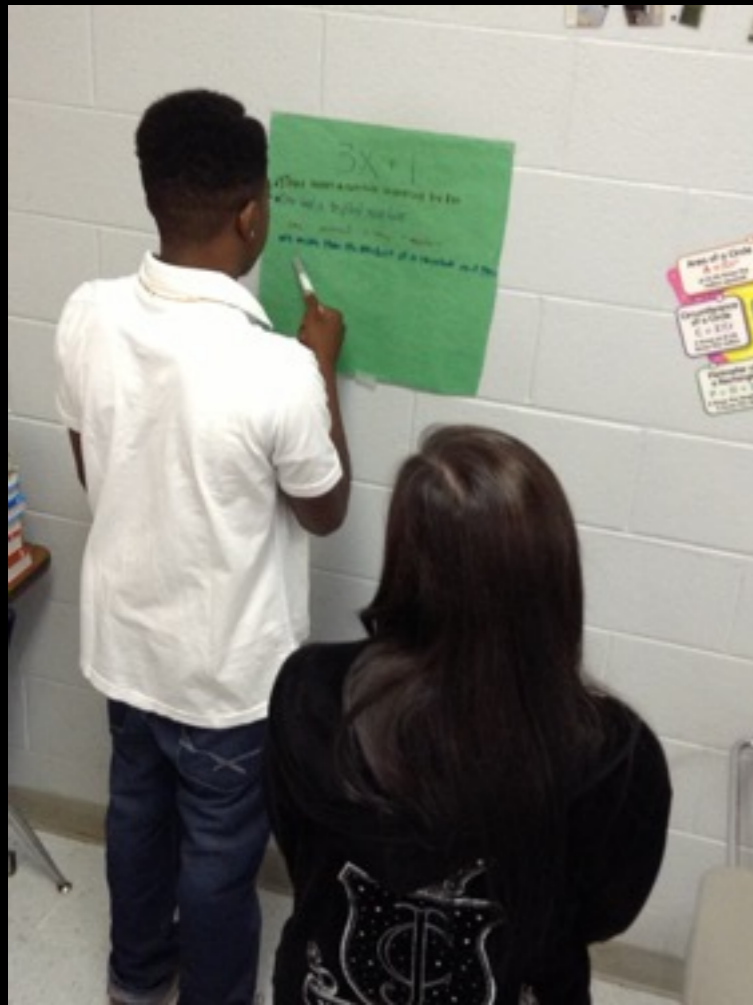
PROBLEMS OF TEACHING

MAGDALENE LAMPERT

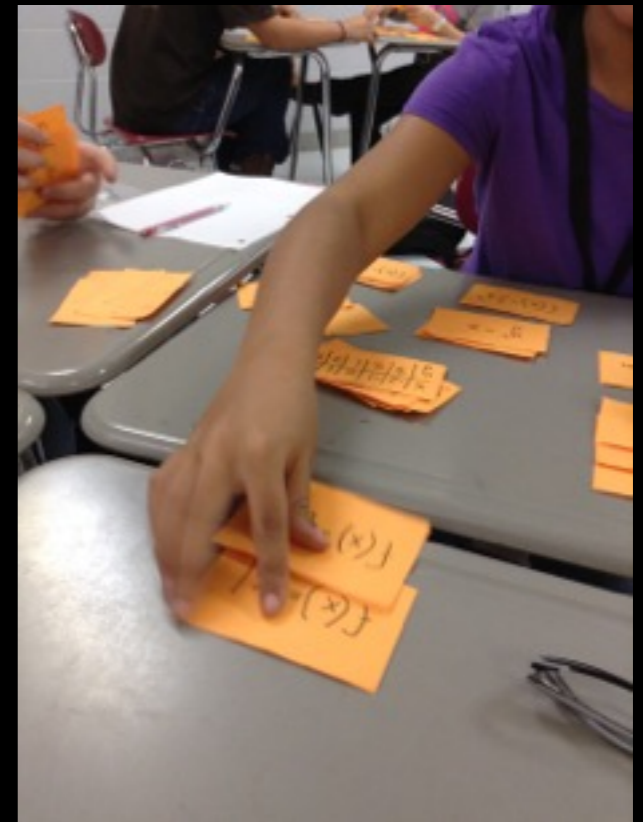
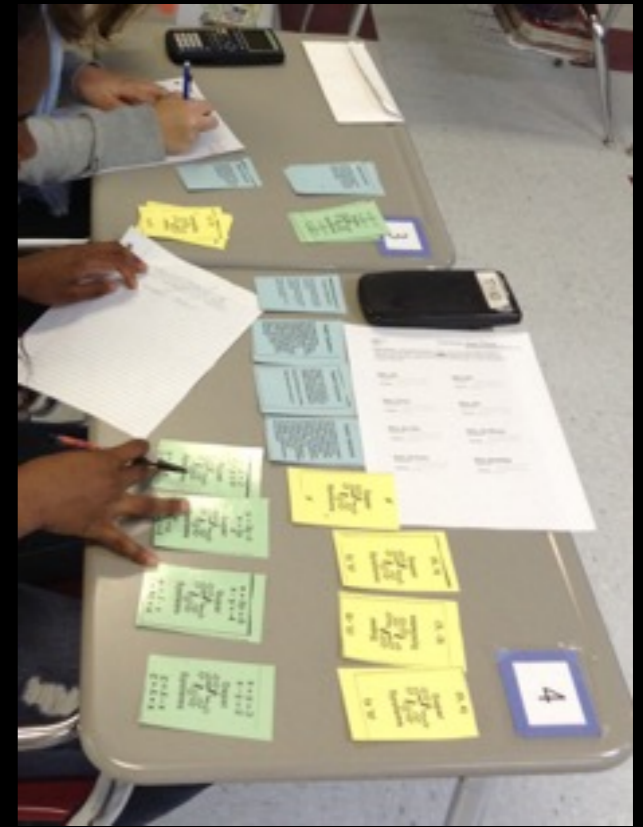
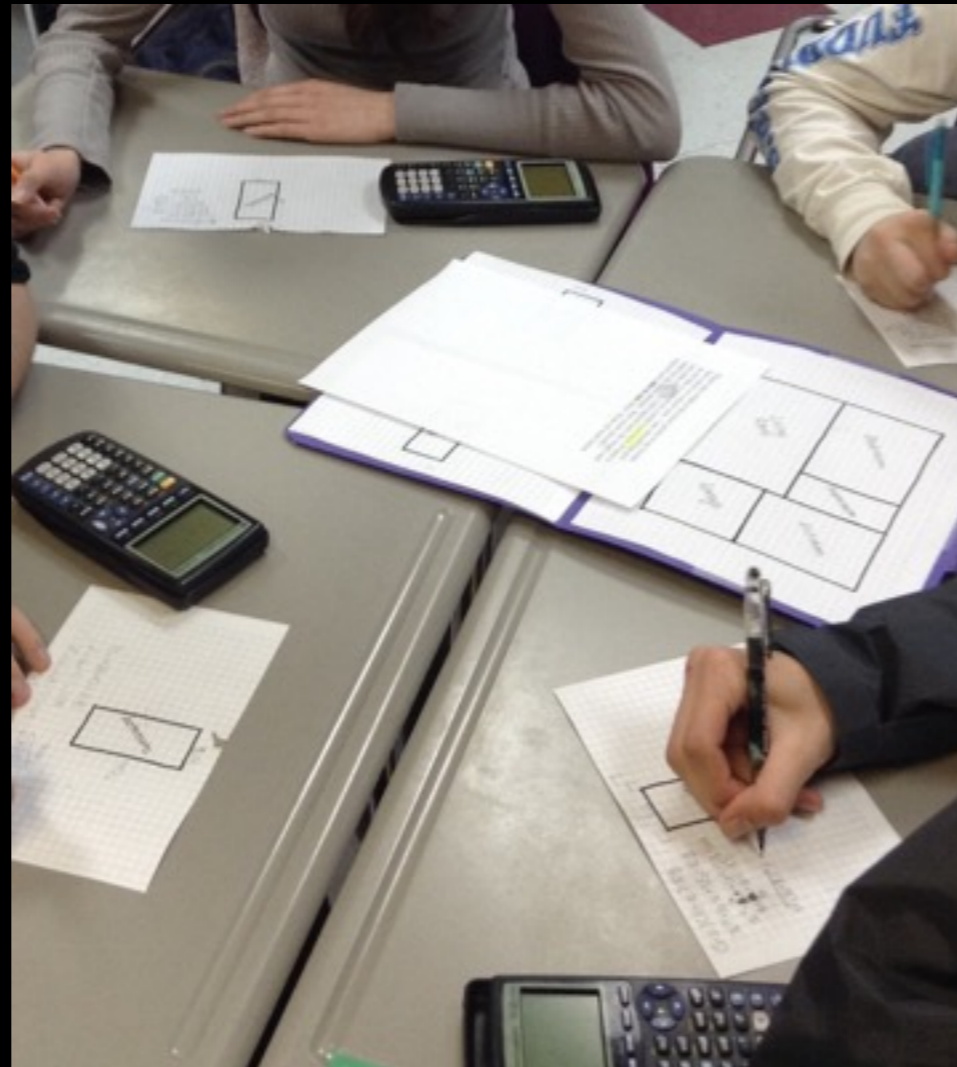
Progression of the Bell Ringer

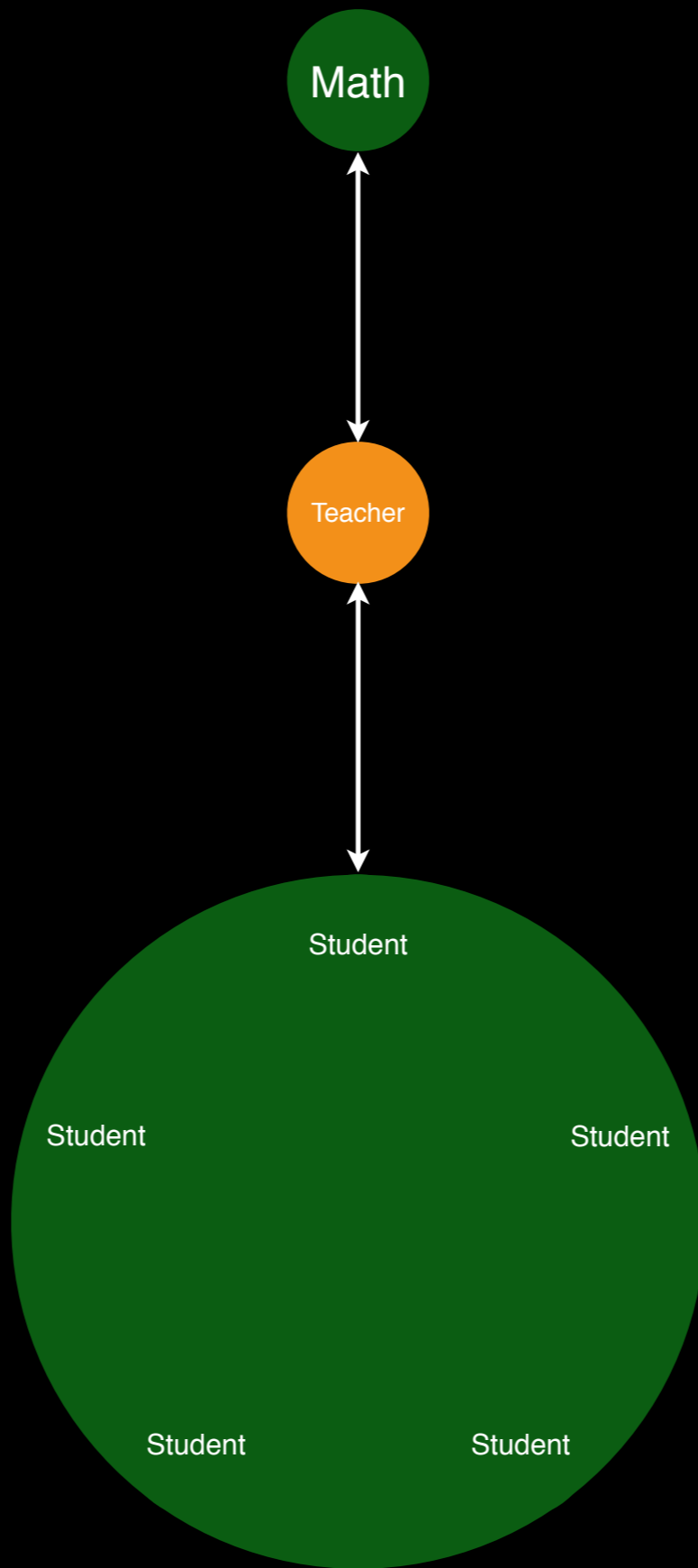


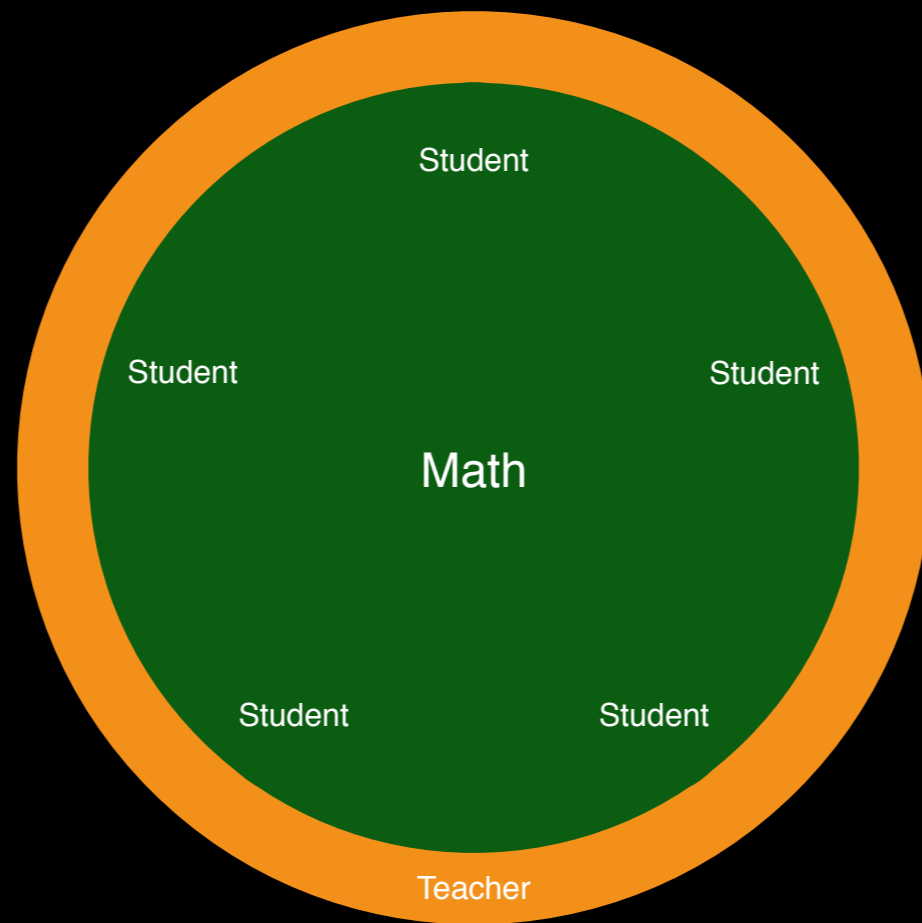
In, Around, and Outside of the Classroom



Working Together







Community of Learners



RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice?

How do you sustain professional learning?

RESEARCH QUESTIONS

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

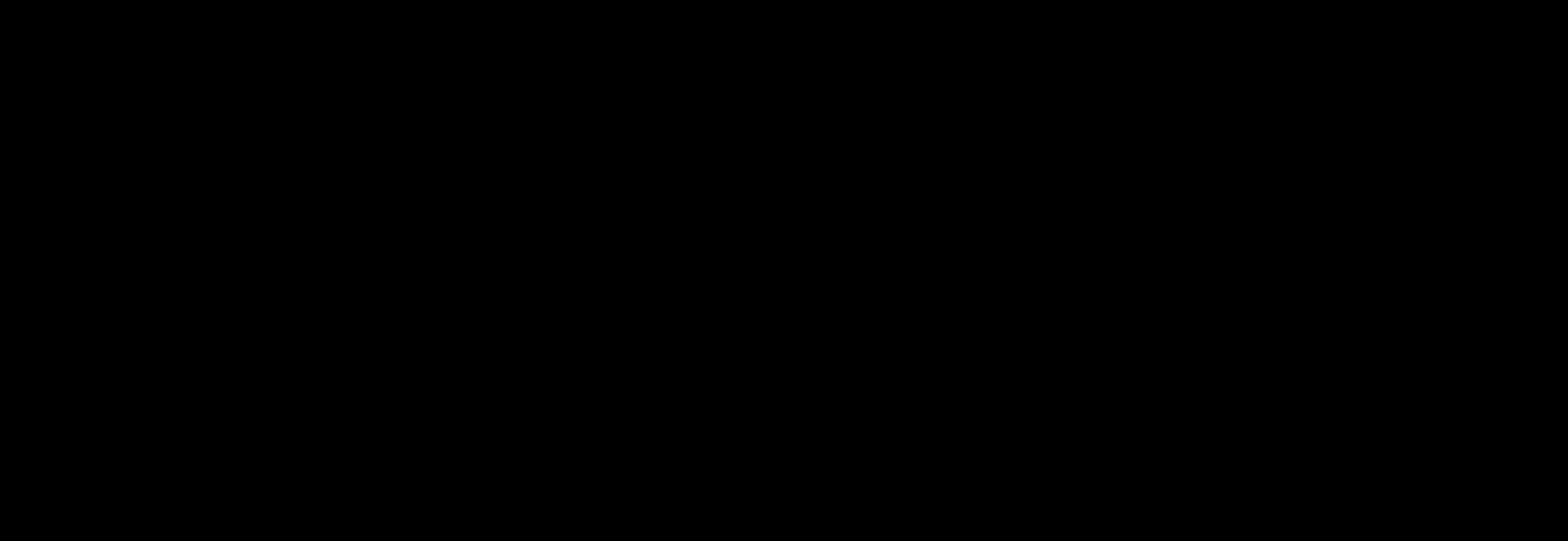
How do teachers choose to improve their practice?

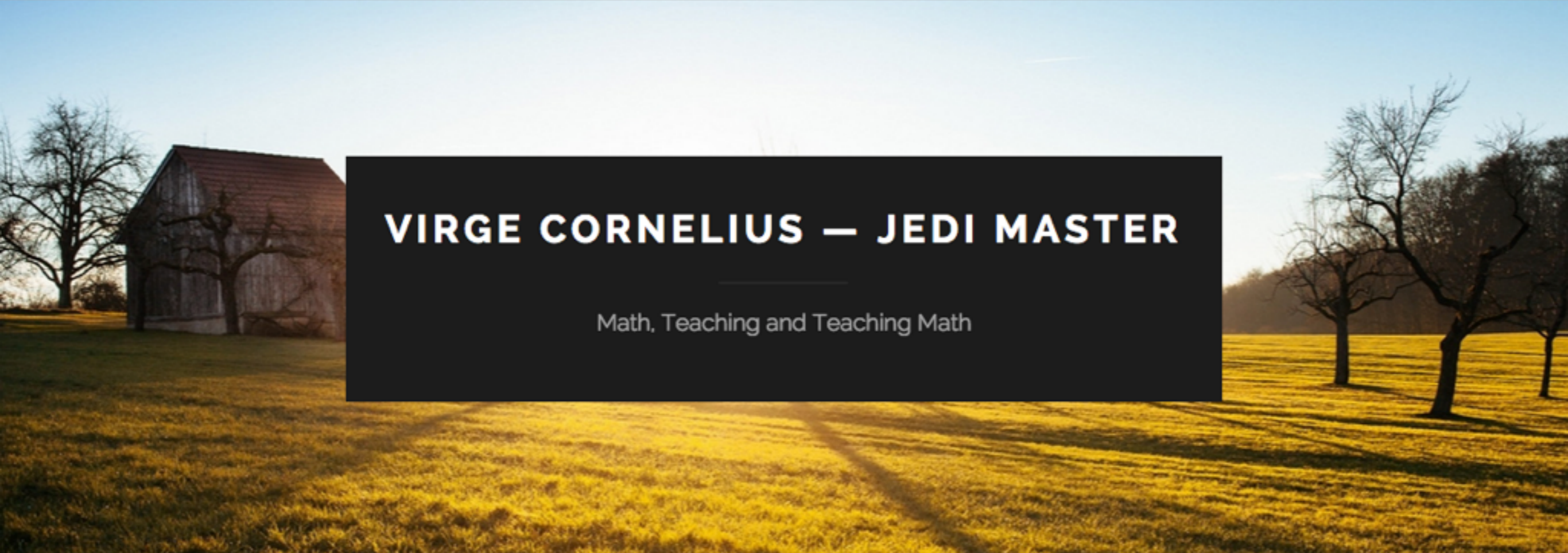
How do you sustain professional learning?



VIRGE CORNELIUS — JEDI MASTER

Math, Teaching and Teaching Math





VIRGE CORNELIUS — JEDI MASTER

Math, Teaching and Teaching Math



[About Us](#) | [Blog](#) | [FAQs & Help](#) | [Gift Cards](#)

All Categories ▾

[Log In](#) | [Not a member? Join for Free](#) | [Cart](#) ▾



Virge Cornelius' Mathematical Circuit Training

★ Follow Me (58)
United States - Mississippi - Oxford

★★★★★ 4.0
55 votes

I'm having a **SALE**

Coaches use circuits to increase skill, strength, speed, and stamina. Teachers can use circuits too!

131 Likes | 0 Pins | 1 Share | 4 G+1

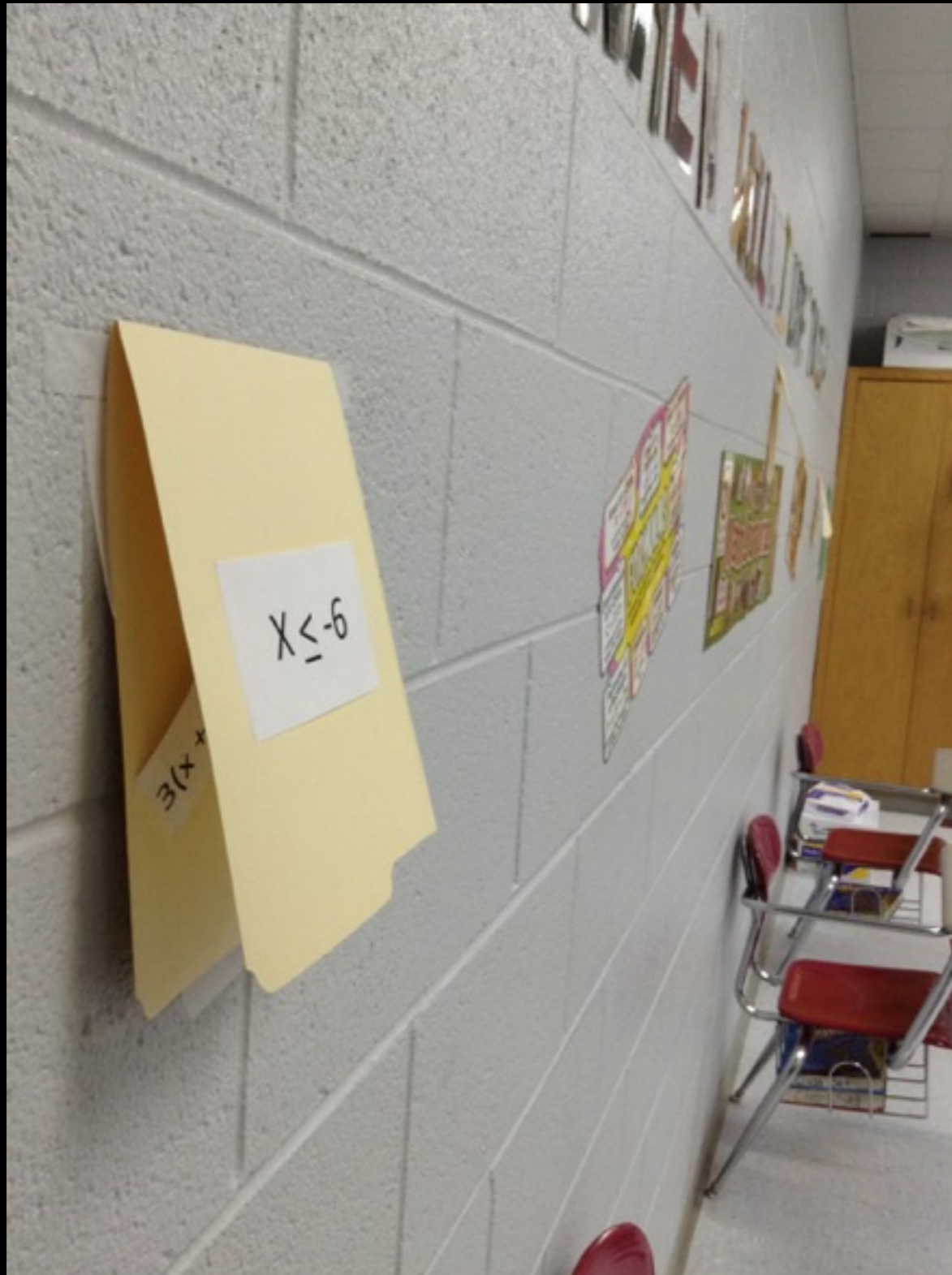
FREE DOWNLOAD

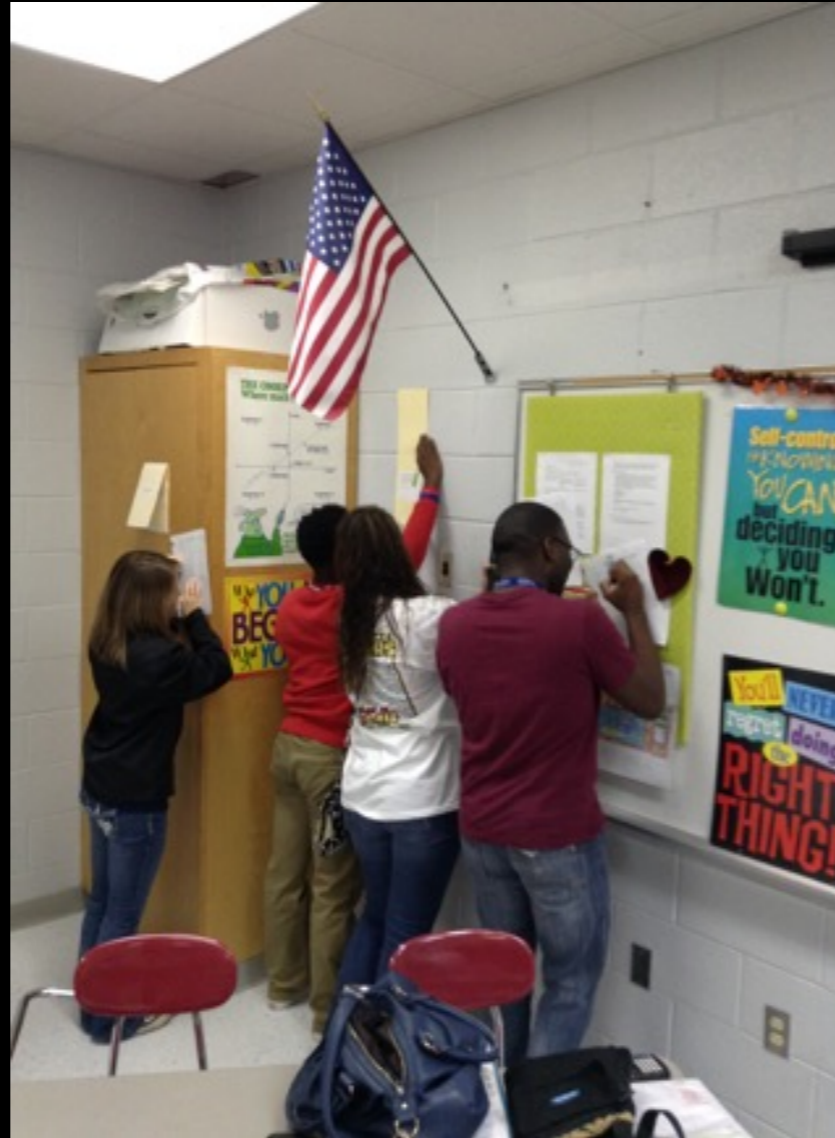
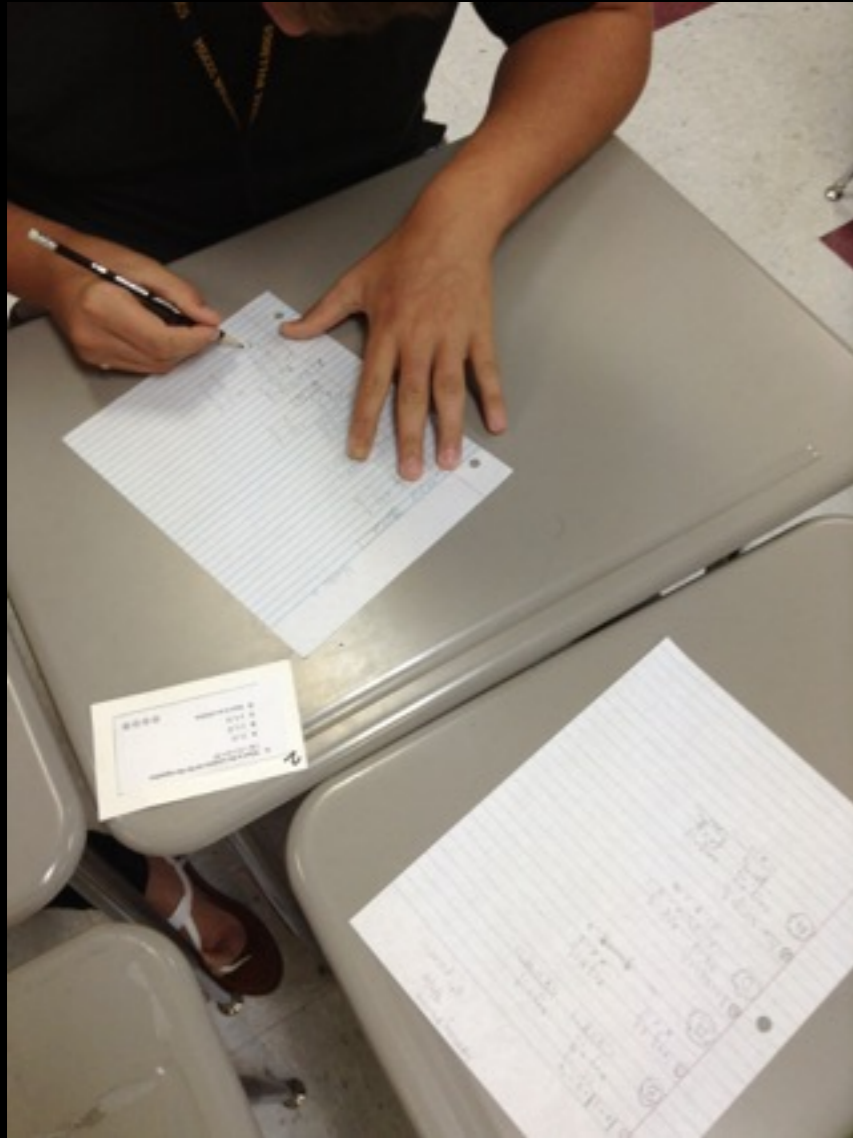
Assess the general quality of my work with this free download

Circuit Training - Volumes of ...

DOWNLOAD NOW ↓

Around the Room Circuits





PRODUCTS

This research should lead to a draft article suitable for submission in the Mathematics Teacher Educator, Journal for Research in Mathematics Education, or in one of the NCTM school journals.

PRODUCTS

Manuscript

PRODUCTS

2 Manuscripts

PRODUCTS

2 Manuscripts

4 Presentations

PRODUCTS

2 Manuscripts

4 Presentations

Technology

PRODUCTS

2 Manuscripts

4 Presentations

Technology

Teaching Resources

Stipends

PRODUCTS

2 Manuscripts

4 Presentations

Technology

Teaching Resources

Stipends

Pilot Study

PRODUCTS

2 Manuscripts

4 Presentations

Technology

Teaching Resources

Stipends

Pilot Study

Relationships

PRODUCTS

2 Manuscripts

4 Presentations

Technology

Teaching Resources

Stipends

Pilot Study

Relationships

Clinical Instructors

APPLY!

[HTTP://WWW.NCTM.ORG/GRANTS/](http://www.nctm.org/grants/)

[JCAMIDON@OLEMISS.EDU](mailto:jcamidon@olemiss.edu)

[AMIDONPLANET.COM](http://amidonplanet.com)