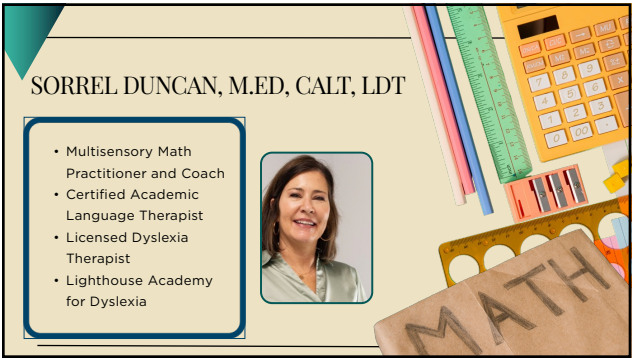
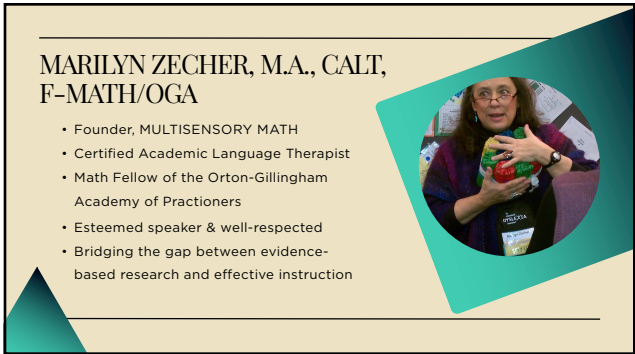




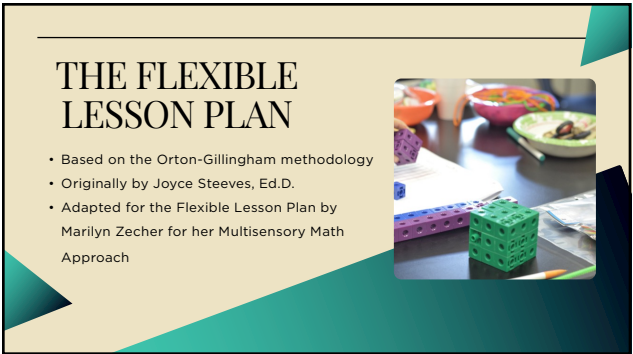
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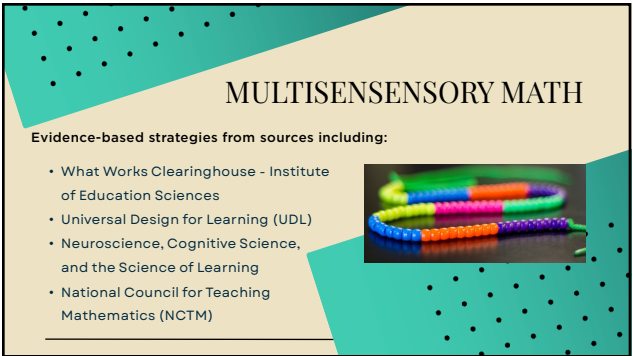
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5



6

DID YOU KNOW?

- 40% of students with dyslexia also struggle with math
- Specific, systematic, multisensory instruction
- Multisensory Math is appropriate for all students, but ESSENTIAL for some



7

EXPERIENTIAL LEARNING


*Tell me,
and I will forget;
Show me,
and I may remember;
Involve me,
and I will understand.*

Ancient Proverb



8


FOUR ATTRIBUTES OF SLOPE



9

EQUIPPING FOR SUCCESS


- Elements are not random
- Targeted number facts
- Subskills practice
- Building toward success



10

USING MANIPULATIVES

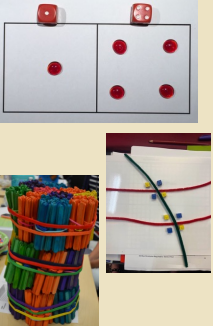
- Builds visual and tactile memories
- Simultaneous processing
- Activates neural pathways
- Increased understanding and retrieval
- Increases engagement




11

USING MANIPULATIVES

- Lose their novelty the more students use them
- Become learning tools
- Not used every day - new concept introduction
- Efficient - easily passed out and put away
- Goal is to get rid of them - abstract math is aim



12




THE FLEXIBLE LESSON PLAN

- Framework for intervention or general classroom learning
- Use with any curriculum
- Pacing and inclusion of many strands of math - subskills practice
- Explicit Instruction
- Adequate Practice to Mastery

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THE FLEXIBLE LESSON PLAN

- Familiar
- Consistent
- Predictable rhythm
- Students know what to expect
- Regular pattern of change keeps students engaged
- Students arrive and leave with something fun and achievable

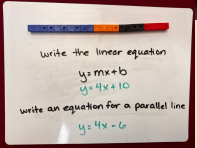




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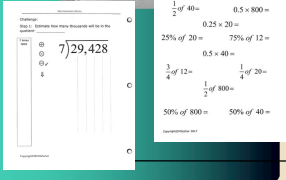
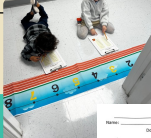
THE WARM UP

Focusing activity

- Easily completed
- Easily assessed
- Something fun - not review of last night's homework
- "I'm here to do math and be successful"



15



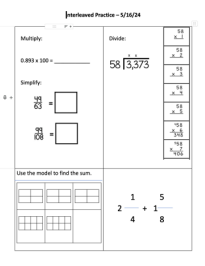
PRACTICE SHEET

- One or a few simple problems
- Builds subskills or maintenance
- Ample white space
- Short review or remediation
- Pick 4
- Word problem

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INTERLEAVED PRACTICE



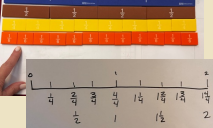
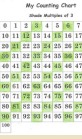
- Opposite of blocked practice
- Quickly reviews previous learning
- Stretches student recall
- Better long term retention



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COUNTING


- Builds visual and auditory pattern recognition
- Cements number fluency
- Count forward and backward
- Use a near point reference
- Builds number facts for use later in the lesson



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BOARD WORK

- Get students up if possible
- Gross motor
- Large muscle movement fills the brain with oxygen
- Multisensory learning improves comprehension and fact retrieval

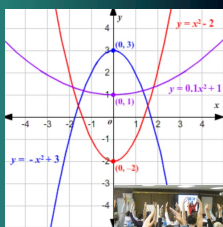



19

BOARD WORK

Audience Participation - **Algebra Yoga!**

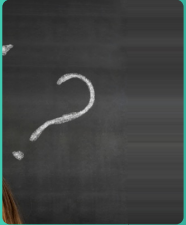
- Parabola with whole number coefficient - vertical stretch
- Parabola with fractional coefficient - vertical compression
- Parabola with negative coefficient - reverse direction

20

MENTAL MATH

- Encourages reasoning
- Uses targeted number facts applied at different levels of complexity
- Reinforces numeracy at all levels




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DISCUSSION

Discussion sets the stage for the new concept introduction, anchoring vocabulary and gaining student buy-in for the hard work of learning a new skill.

- Attaches meaning to math vocabulary (use morphology)
- Brain-storm
- Real-world applications
- "Hook"
- Gains student buy-in



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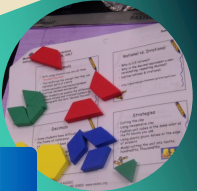
NEW CONCEPT

Main Event!

- Multisensory
- Concept based
- Explicit instruction
- Grade-Level Content
- Guided Practice

C-R-A

- Concrete - manipulatives
- Representational - pictorial
- Abstract - algorithm

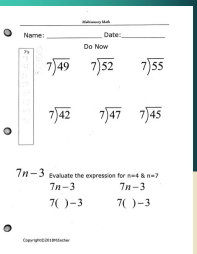


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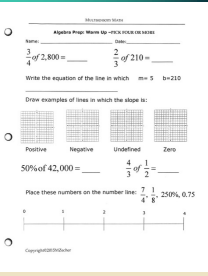
WRITTEN PRACTICE

Active Application

- Intense practice & concentration
- Independent or collaborative
- Teacher observes closely
- Help if necessary
- Assures success



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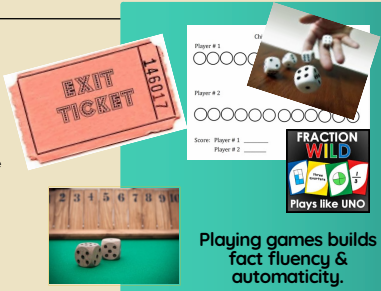
WRITTEN PRACTICE

- Ample white space
- Graphic organizers support executive function skills
- Dysgraphic students
 - Graph paper
 - Notebook paper turned sideways
- Use MathType to generate practice sheets with targeted number facts

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REVIEW

- Ties it all together
- Success Oriented
- Leave on a positive note
- Can be collaborative
- Exit Ticket
- Game



Playing games builds fact fluency & automaticity.

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RESOURCES

Achieve the Core Focus Areas by Grade Level for Math

- www.achievethecore.org
- Overview of the major work by grade
- Highlights major clusters - core topics
- Helps focus scope and sequence
- Encourages intentional depth rather than superficial coverage

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CCSS WHERE TO FOCUS GRADE 3 MATHEMATICS

This document shows where students and teachers should spend the large majority of their time in order to meet the expectations of the Standards.

Not all content in a given grade is emphasized equally in the Standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to learn, and/or their importance for future mathematics or the demands of college and career readiness. There are a few areas that are necessary for students to meet the Standards for Mathematical Practice.

Students should spend the large majority of their time on the major work of the grade (■), Supporting work (□) and, where appropriate, additional work (●) can engage students in the major work of the grade.¹

Key: ■ Major Clusters □ Supporting Clusters ● Additional Clusters

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 3
Emphases are given in the cluster level. Refer to the Common Core State Standards for Mathematics for the specific standards that fall within each cluster.

HIGHLIGHTS OF MAJOR WORK IN GRADES K-8


REQUIRED FLUENCIES FOR GRADE 3
3.OA.C.7 Single-digit products and quotients. Products from memory by end of Grade 3.
3.NBT.A.2 Addition within 1000.

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FIND OUT MORE!

Marilyn Zecher's Multisensory Math & More

- multisensorymath.com
- Subscription based courses & workshops
- Graduate level courses
- Multisensory Math 1 - K-5
- Multisensory Math 2 - Advanced Math
- Podcasts: Made for Math, The Literacy Nest
- Conferences: IDA, ALTA, OG, NOBIDA, PaTTAN



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