

PROGRESSION OF MULTIPLICATION

FOUNDATIONAL KNOWLEDGE

MULTIPLYING BY SQUARES
8 X 8 2 X 2 6 X 6

MULTIPLYING BY 7
7 X 6 7 X 4 7 X 2

MULTIPLYING BY 9
9 X 2 9 X 5 9 X 3

MULTIPLYING BY 6
6 X 3 6 X 7 6 X 5

MULTIPLYING BY 3
3 X 9 3 X 5 3 X 0

MULTIPLYING BY 8
8 X 1 8 X 3 8 X 6

MULTIPLYING BY 4
4 X 8 4 X 5 4 X 0

MULTIPLYING BY 2
2 X 4 2 X 2 2 X 8

MULTIPLYING BY 5
5 X 10 5 X 7 5 X 5

MULTIPLYING BY 10
10 X 5 10 X 8 10 X 3

MULTIPLYING BY 1
1 X 8 1 X 2 1 X 5

MULTIPLYING BY 0
0 X 5 0 X 2 0 X 8

RESEARCH NOTES

COUNTING
ALL

additive
calculation

count by

pattern
based

learned
products

hybrids

(Sherin and Fuson, 2005)

These are not key words! It is just Math Vocabulary! Never use key words!

MULTIPLICATION, EQUAL GROUPS, ARRAYS, MULTIPLY, GROUPS OF TOTAL, ALTOGETHER

PROGRESSION OF MULTIPLICATION

RESEARCH NOTES

1 COUNTING ALL

2 additive calculation

3 count by

4 pattern based

5 learned products

6 hybrids

-Sherin and Fuson, 2005

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JOURNEY TO FLUENCY

MULTIPLYING
BY SQUARES

$$8 \times 8$$

MULTIPLYING
BY 7

$$7 \times 6$$

MULTIPLYING
BY 9

$$9 \times 2$$

MULTIPLYING
BY 6

$$6 \times 5$$

MULTIPLYING
BY 3

$$3 \times 9$$

MULTIPLYING
BY 8

$$8 \times 6$$

MULTIPLYING
BY 4

$$4 \times 3$$

MULTIPLYING
BY 2

$$2 \times 7$$

MULTIPLYING
BY 0

$$0 \times 1$$

MULTIPLYING
BY 1

$$1 \times 9$$

MULTIPLYING
BY 10

$$10 \times 5$$

MULTIPLYING
BY 5

$$5 \times 4$$

MULTIPLICATION, EQUAL GROUPS, ARRAYS, MULTIPLY, GROUPS OF TOTAL, ALTOGETHER

PROGRESSION OF MULTIPLICATION

MULTIPLYING BY SQUARES
 8×8 2×2 6×6

MULTIPLYING BY 7
 7×6 7×4 7×2

MULTIPLYING BY 9
 9×2 9×5 9×3

MULTIPLYING BY 6
 6×3 6×7 6×5

MULTIPLYING BY 3
 3×9 3×5 3×0

MULTIPLYING BY 8
 8×1 8×3 8×6

MULTIPLYING BY 4
 4×8 4×5 4×0

MULTIPLYING BY 2
 2×4 2×2 2×8

MULTIPLYING BY 5
 5×10 5×7 5×5

MULTIPLYING BY 10
 10×5 10×8 10×3

MULTIPLYING BY 1
 1×8 1×2 1×5

MULTIPLYING BY 0
 0×5 0×2 0×8

RESEARCH NOTES

cöUNTING
ALL

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hybrids

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(Sherin and Fuson, 2005)

MULTIPLICATION, EQUAL GROUPS, ARRAYS, MULTIPLY, GROUPS OF, TOTAL, ALTOGETHER

PROGRESSION OF MULTIPLICATION

JOURNEY TO FLUENCY

RESEARCH NOTES

- 1 COUNTING ALL
- 2 additive calculation
- 3 count by
- 4 pattern based
- 5 learned products
- 6 hybrids

-Sherin and Fuson. 2005)

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MULTIPLYING
BY 0

$$0 \times 1$$

MULTIPLYING
BY 1

$$1 \times 9$$

MULTIPLYING
BY 10

$$10 \times 5$$

MULTIPLYING
BY 5

$$5 \times 0$$

MULTIPLYING
BY 4

$$4 \times 3$$

MULTIPLYING
BY 2

$$2 \times 7$$

MULTIPLYING
BY 8

$$8 \times 6$$

MULTIPLYING
BY 3

$$3 \times 9$$

MULTIPLYING
BY 6

$$6 \times 5$$

MULTIPLYING
BY 7

$$7 \times 6$$

MULTIPLYING
BY 9

$$9 \times 2$$

MULTIPLYING
BY SQUARES

$$8 \times 8$$

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About the Dr. Nicki Newton



Dr. Nicki Newton is an education consultant who works with schools and districts around the country and Canada on K-8 math curriculum. She has taught elementary school, middle school, and graduate school. Dr. Nicki has an Ed.M. and an Ed.D. from Teachers College Columbia University. She is greatly interested in teaching and learning practices around the world and has researched education in Denmark, Guatemala and India. She has written several books, including being a part of the curriculum team for the new McGraw Hill Reveal Math series. She is currently working on a book about counting.

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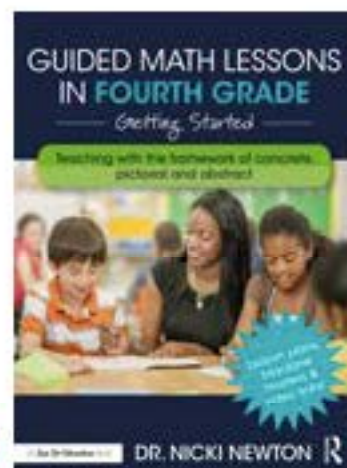
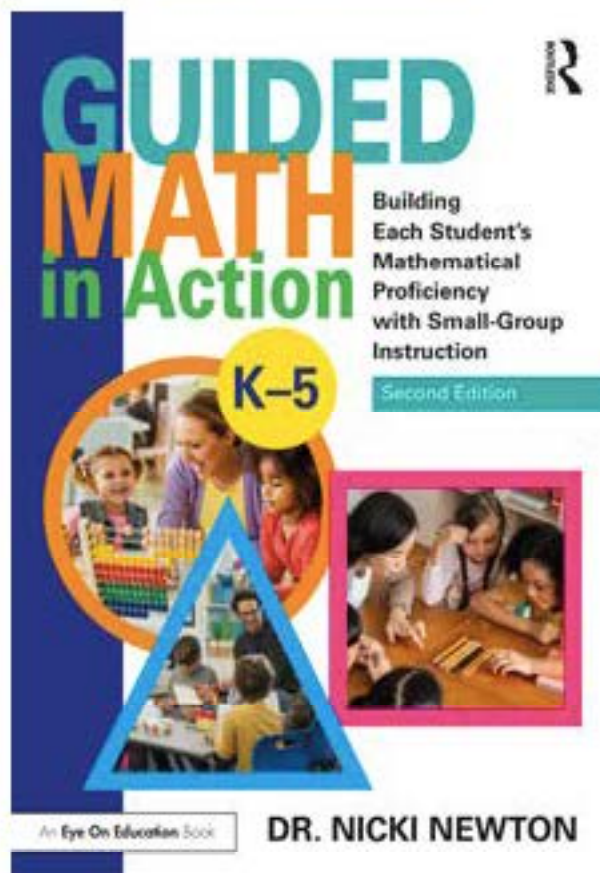
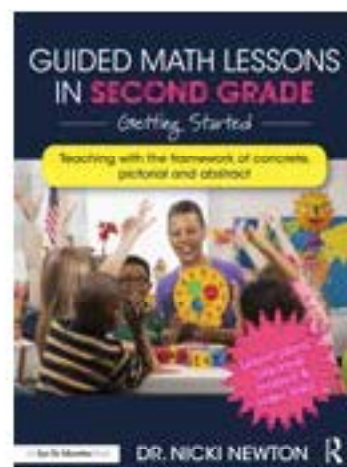
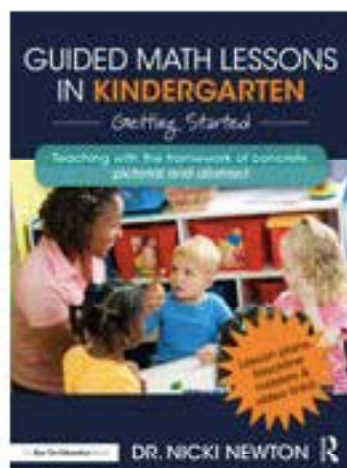
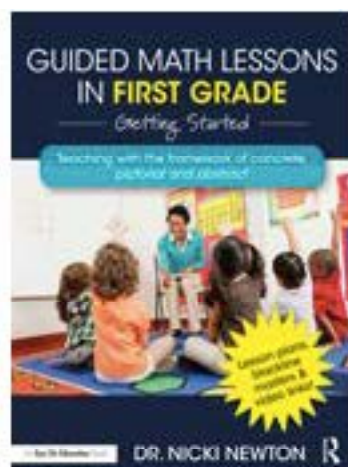
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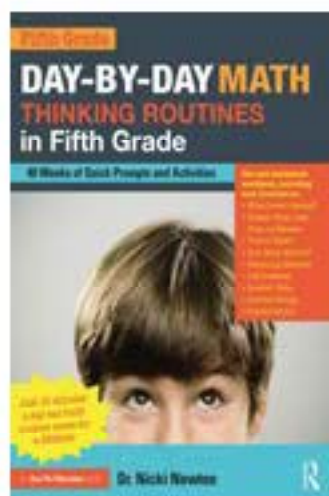
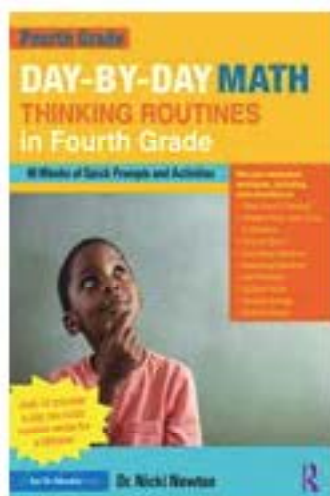
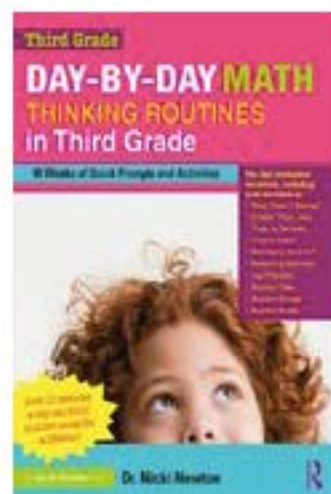
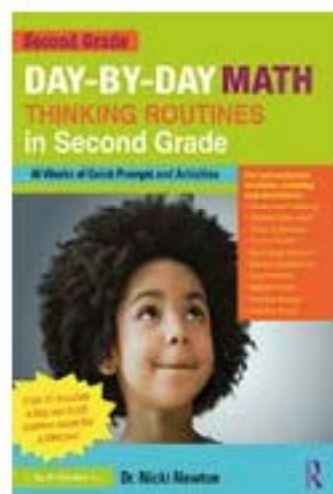
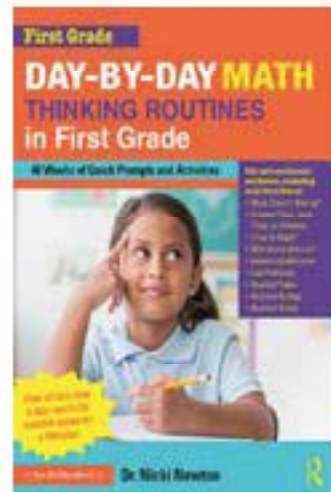
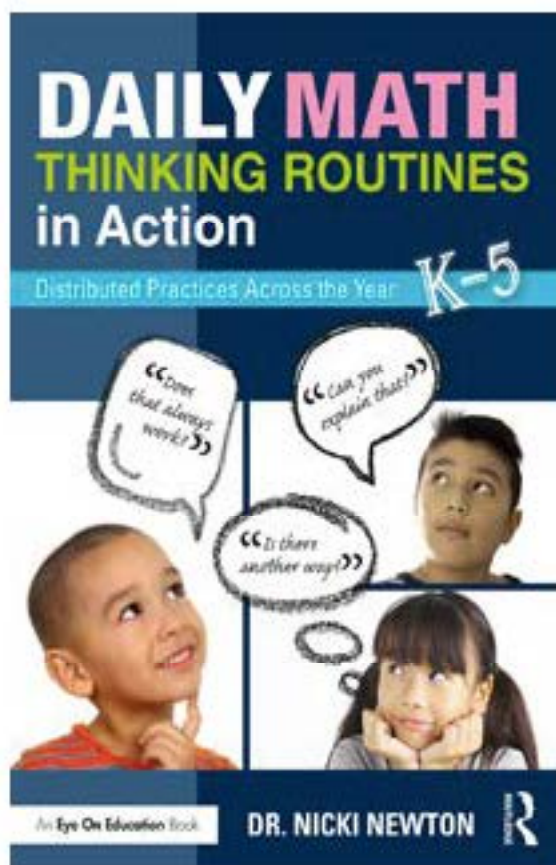
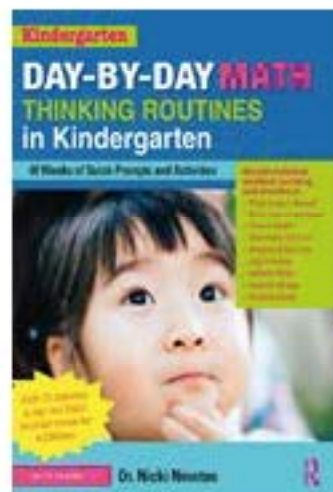
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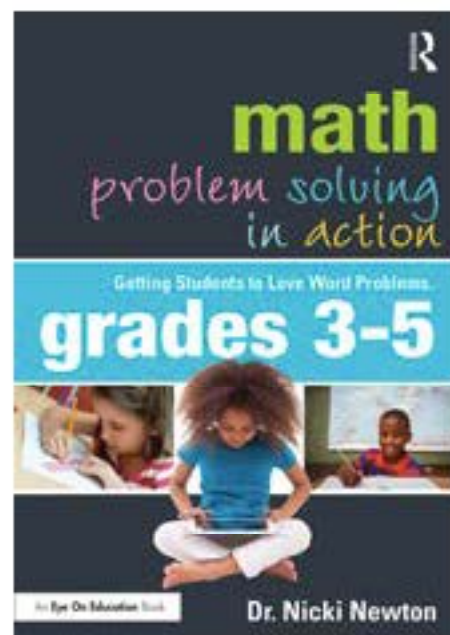
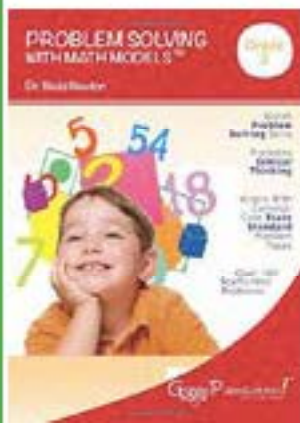
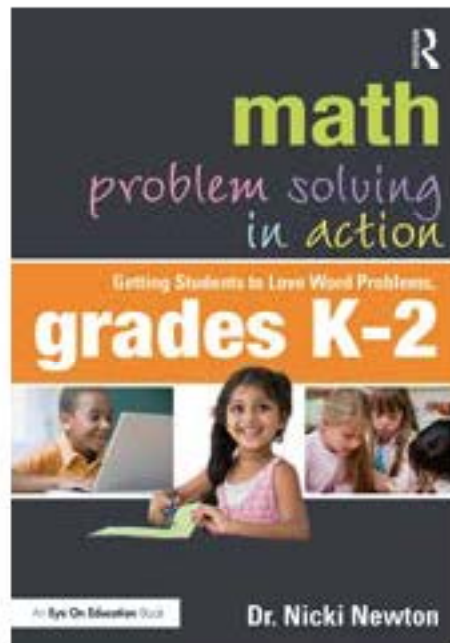
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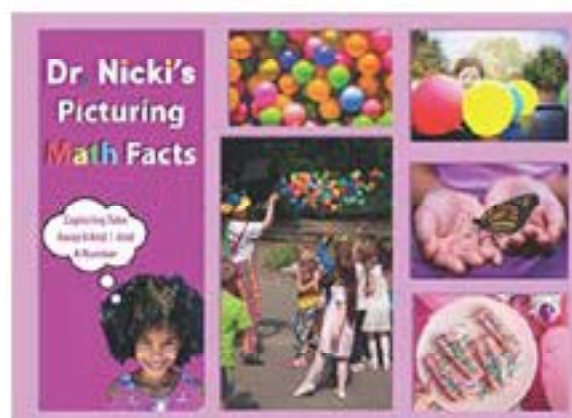
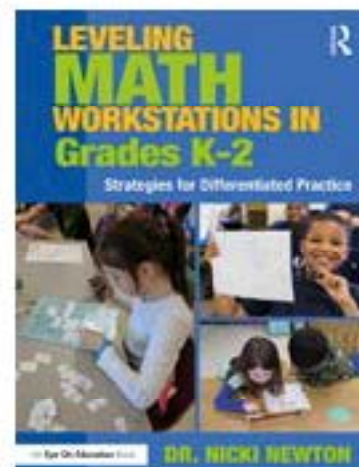
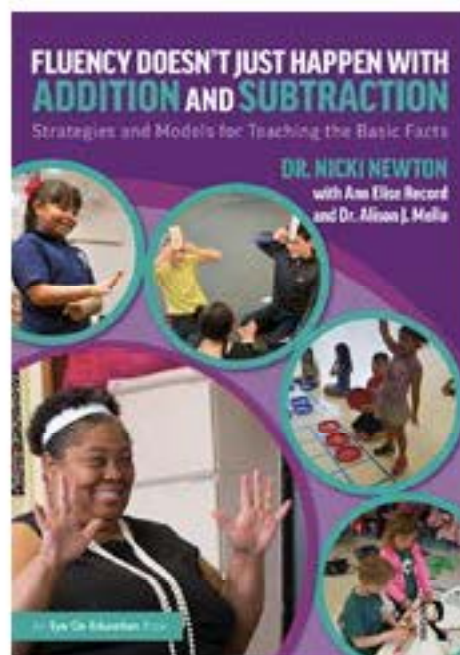
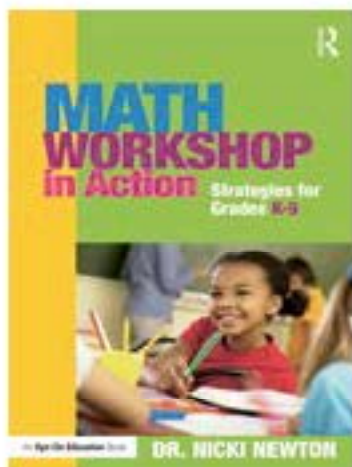
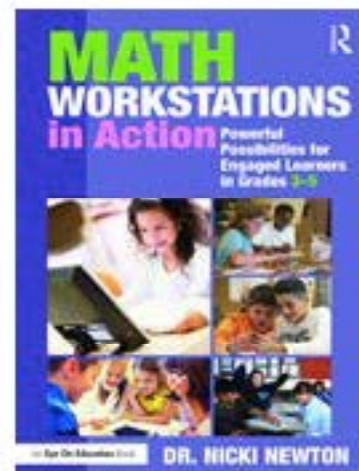
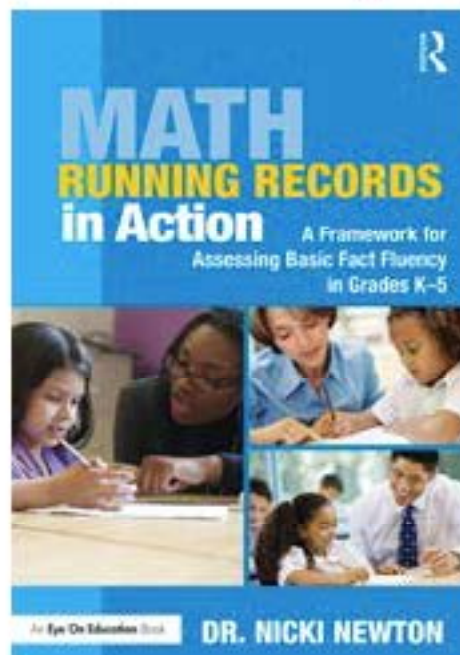
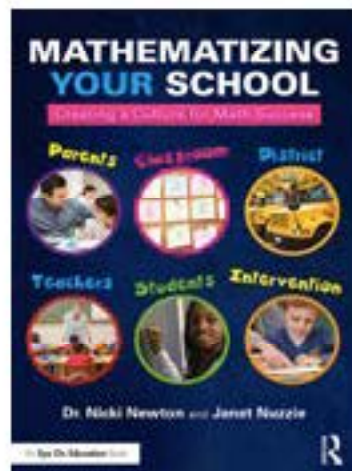
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