Welcome to Parent Math Night

Ada Harris Elementary

Grades

3rd Through 6th

Fortune 500 Survey On Needed Workforce Skills

Critical Thinking/Problem Solving—Exercise sound reasoning and analytical thinking; use knowledge, facts, and data to solve workplace problems; apply math and science concepts to problem solving.

Oral Communications—Articulate thoughts, ideas clearly and effectively; have public speaking skills.

Written Communications—Write memos, letters and complex technical reports clearly and effectively.

Teamwork/Collaboration—Build collaborative relationships with colleagues and customers; be able to work with diverse teams, negotiate and manage conflicts.

Diversity—Learn from and work collaboratively with individuals representing diverse cultures, races, ages, gender, religions, lifestyles, and viewpoints.

Information Technology Application—Select and use appropriate technology to accomplish a given task, apply computing skills to problem-solving.

Leadership—Leverage the strengths of others to achieve common goals; use interpersonal skills to coach and develop others.

Creativity/Innovation—Demonstrate originality and inventiveness in work; communicate new ideas to others; integrate knowledge across different disciplines.

Lifelong Learning/Self Direction—Be able to continuously acquire new knowledge and skills; monitor one's own learning needs; be able to learn from one's mistakes.

Professionalism/Work Ethic—Demonstrate personal accountability, effective work habits, e.g., punctuality, working productively with others, and time and workload management.

What are we doing at Ada Harris Elementary to build students to this level of thinking?

Computational Fluency

Problem Solving

Computational Fluency

Accuracy

Efficiency

Flexibility

Progression of Computational Fluency

Levels of Understanding:

Level One

Counting In Some Way

Level Two

Sketching Thinking Down on Paper

(composing and decomposing numbers to solve)

(Algorithms)

Level Three

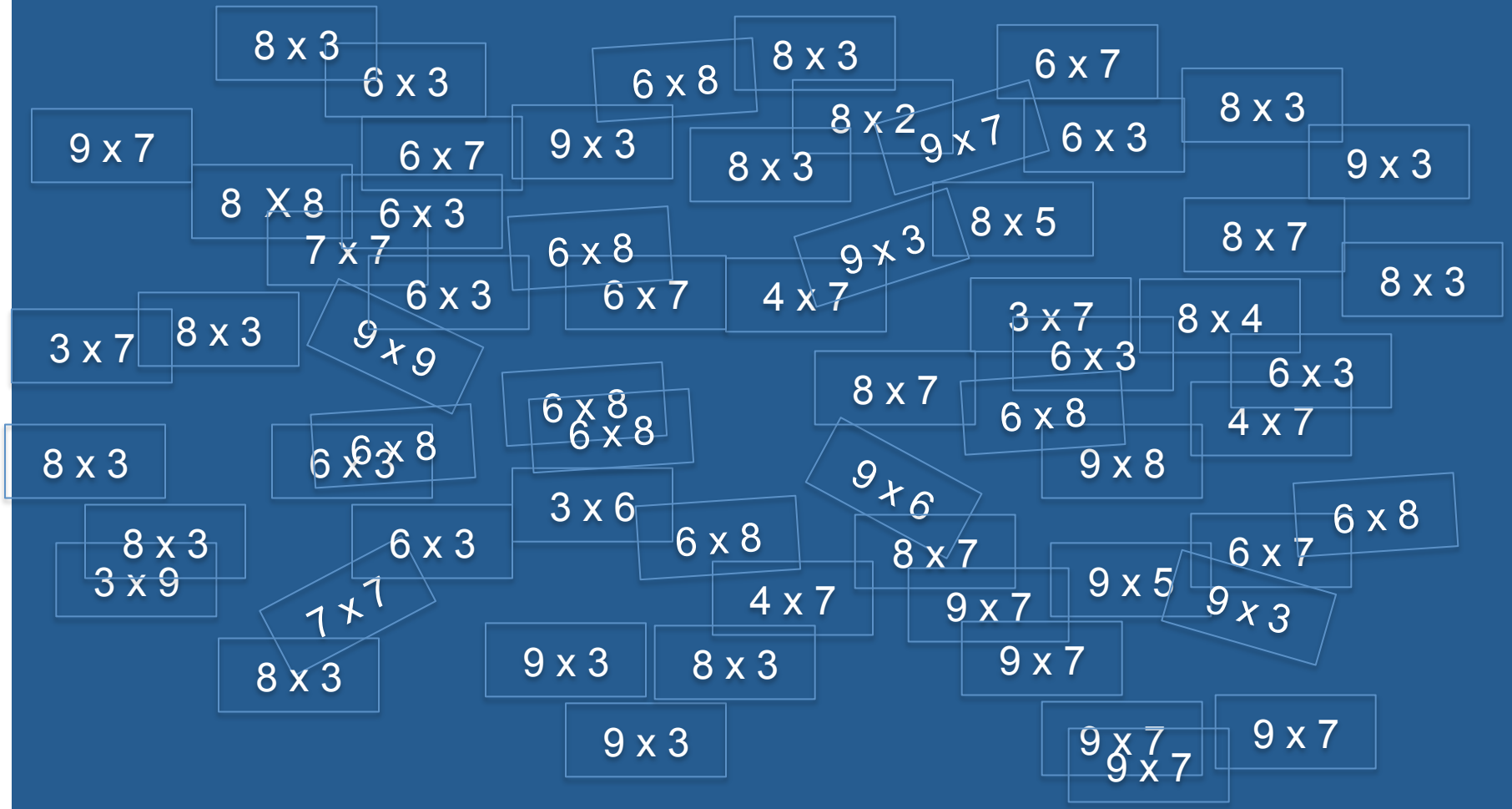
Knowing Mentally

Progression of Computational Fluency

Levels of Understanding:

Emphasis is on knowing amounts verses digits

Math Facts Without Connections



Math Facts With Connections

Taking Advantage of the Properties of Mathematics

Inverse Relationship between:

Addition and subtraction

Multiplication and division

45 ÷ 3 =

"Three times what will give you 45?"

Commutative Property

21 x 4

Distributive Property

(Decomposing equal amounts)

16 x 6

Math Facts With Connections

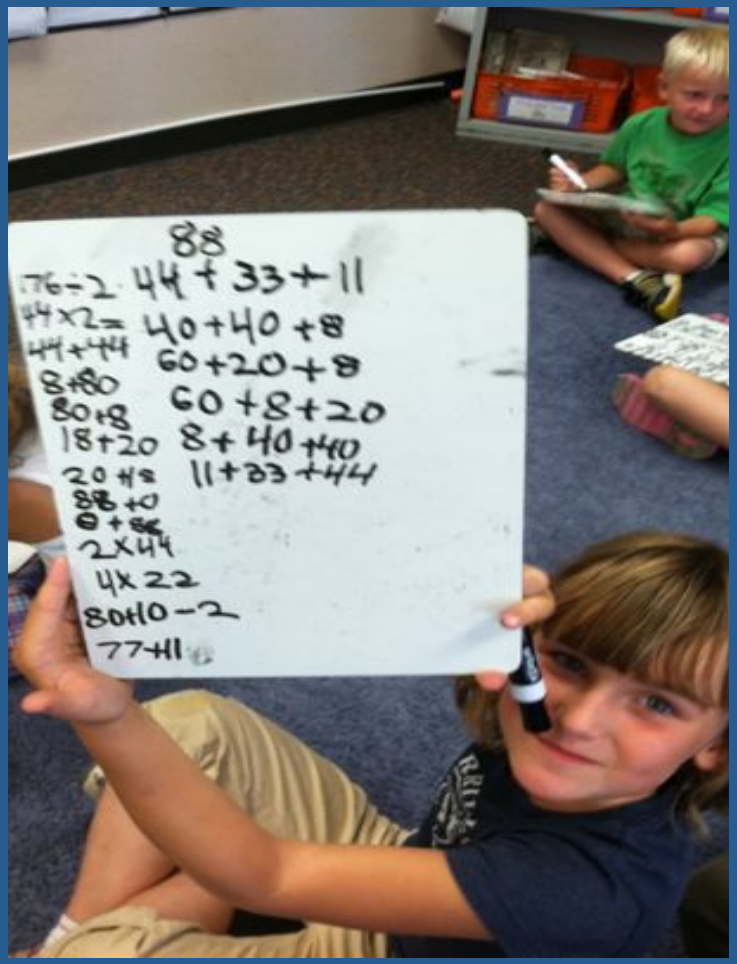
The Three Tiers of Multiplication Facts

2	10	Even 5's/Odd 5's
4	9	Square Facts

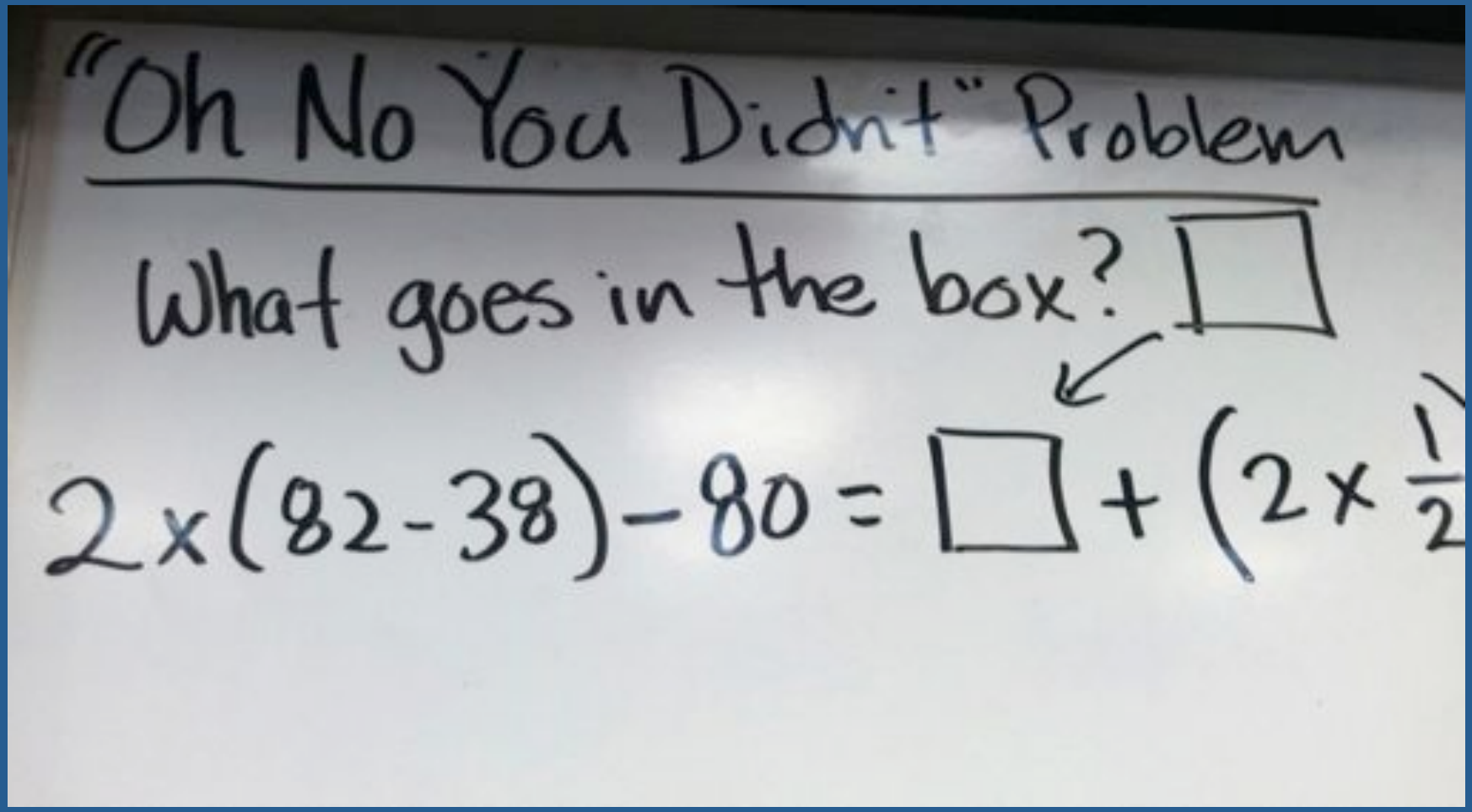
The Rest of the Facts

3 x 6 3 x 7 3 x 8	6 x 7 6 x 8	7 x 8

Number of the Day Routine



Concept of Equality Routine



Number Talk Routines

- Try mentally solving this problem:

4 x 246

__ __ __ __

Third Grade

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division

Fourth Grade:

Find whole number quotients and remainders with

up to four-digit dividends and **one-digit** divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Fifth Grade: Find whole number quotients of whole numbers with up to four-digit dividends and **two-digit** divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Sixth Grade: Fluently divide multi-digit numbers using the standard algorithm.

Number Talk Routines

- Try mentally solving this problem :

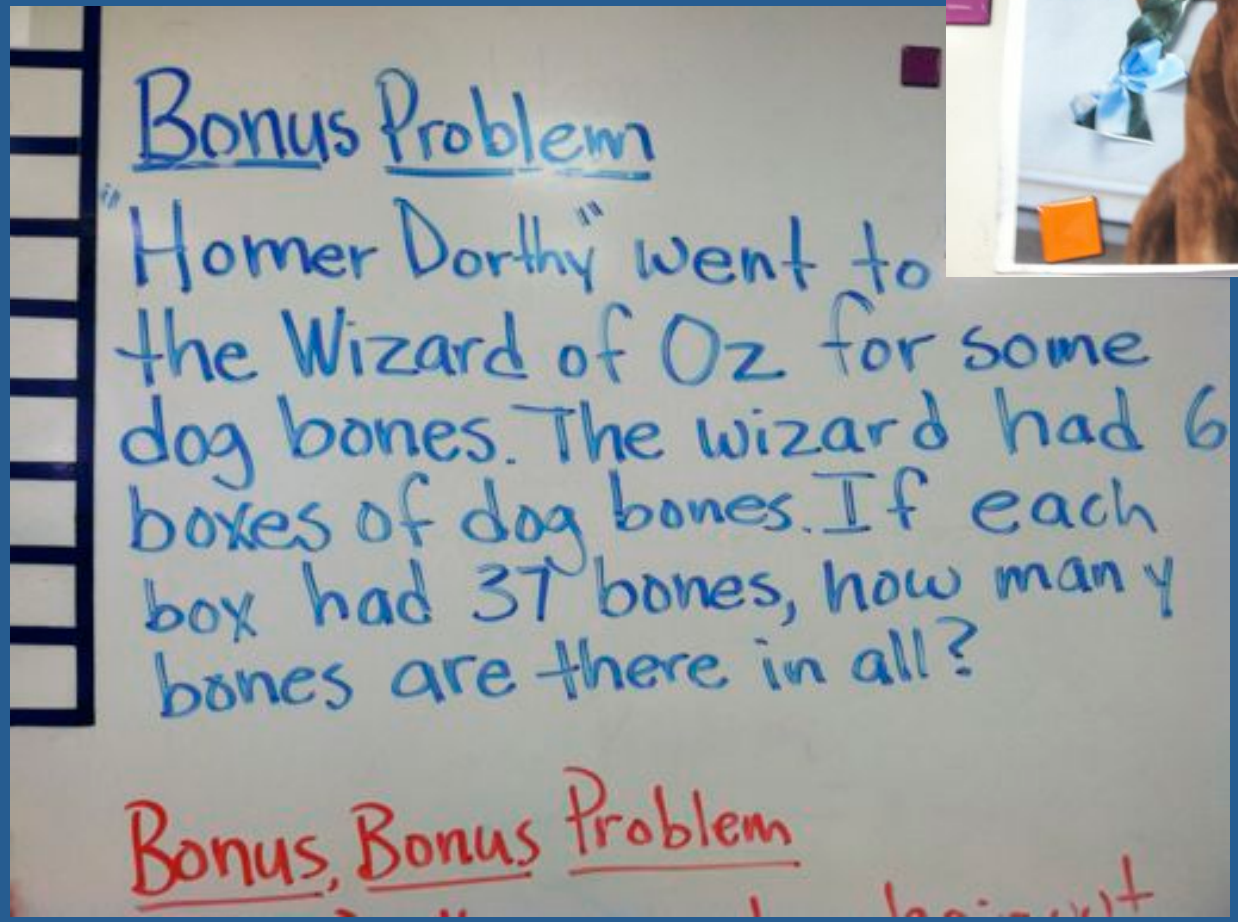
529 ÷ 4

What amounts were involved when you solved this problem?

What are we doing at Ada Harris Elementary to build students to this level of thinking?

Problem Solving

Problem Solving



Problem Solving

There were 7 candy bars to be shared by 3 children. How much would each get if they all got the same amount?

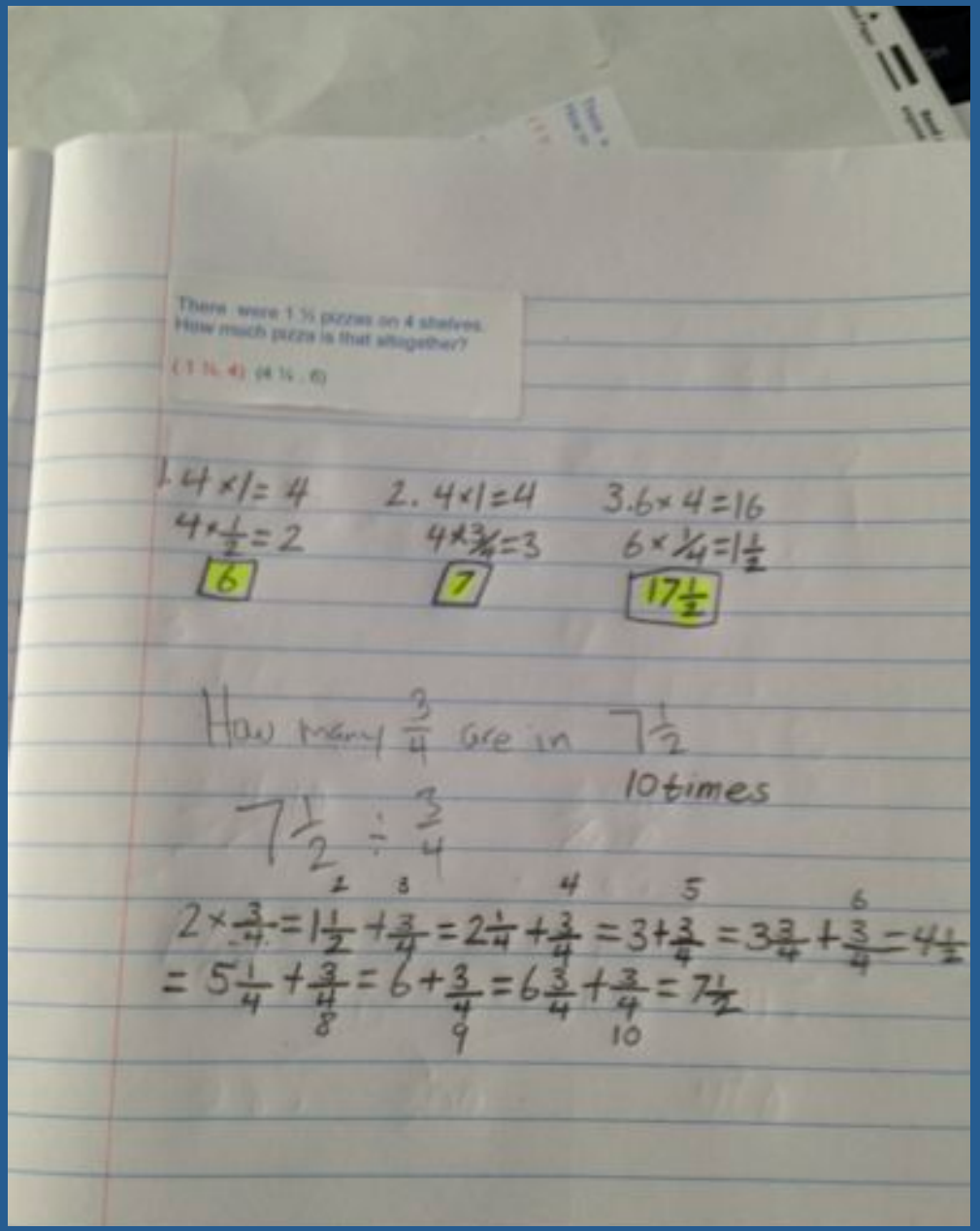
(3, 5) **(6, 4)** **(9, 5)** **(1/2, 4)**

Problem Solving

Brianna centered a table holding her fishbowl against the wall that was 13 feet wide. The table was 3 1/2 feet wide. How far was the left end of the table from the left side of the wall?

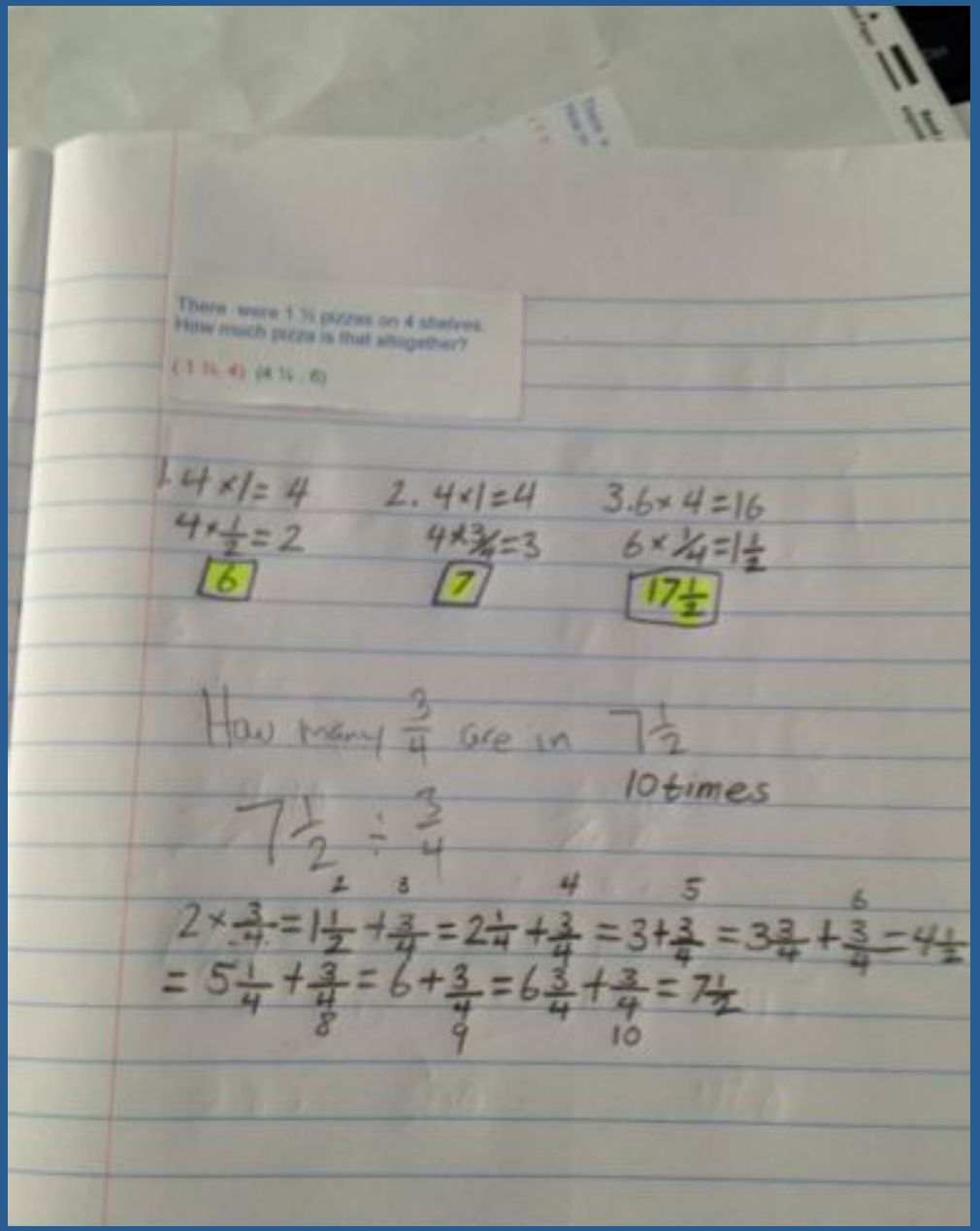
Fraction Problems

There were 1 ½ pizzas on 4 shelves. How much pizza is that altogether?



Fraction Problems

7 Eleven sells beef jerky that is 7 ½ feet long! How many pieces would I get if I cut it into ¾ foot lengths?



Percent Problems

I bought an air conditioner at KOHL's for 35% off the original price. If the original price was $128, how much did I pay for the air conditioner?

How to help your students at home:

Do's

- Have your child explain how they are thinking about the problem and how they are solving it.
- Let them grapple.
- Ask questions: Can you explain? How did you know? Can you tell me again? Share your thinking too.

Don't's

- Don't rush to the algorithm (carrying and borrowing)
- Don't be in a hurry to increase adding and subtracting huge numbers. Understanding comes from being fluent with numbers under 20 and then numbers under 100.
- If your child is struggling with a concept, lower the number and then raise it back up slowly.