Multiplication: Two-Digit by Two-Digit Area Model

Obj: Today, we will multiply two-digit by two-digit numbers using an area model.

Vocab:

×	30	+	20
20	20 × 30 = 600		20 × 2 = 40
+			
6	6 × 30 = 180		6 × 2 = 12

600
180
40
+ 12
832

product

32 × 26 = 832

factor factor

SGP

Sgp#1:

ⓐ stud & teacher write down problem

ⓑ teacher asks studs. to discuss 1st step then share out

ⓒ As stud. shares out, teacher scribes what they are saying

ⓓ REPEAT for each step

sgp#2:

ⓐ same as above

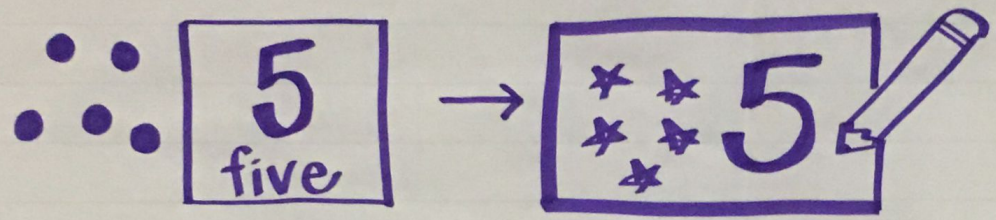
ⓑ teacher asks partners to discuss WHOLE problem.

ⓒ As stud. shares. teacher scribes

Beyond the Basic Facts
Kindergarten

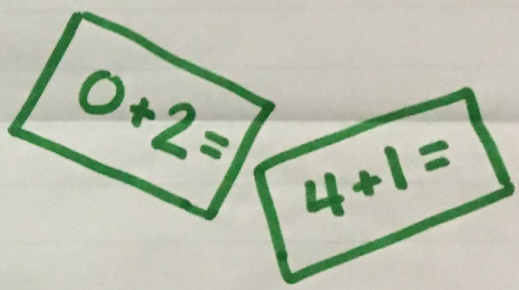
Trimester One

Representing & writing numbers 0 to 10



Trimester Two

Addition- sums within 5

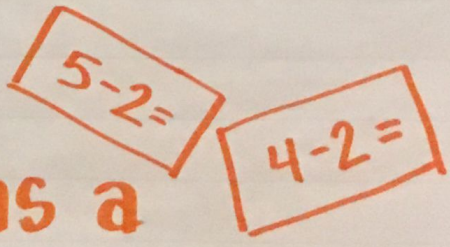


- "Getting Started"

→ focuses on addition properties and rules

Trimester Three

Subtraction- differences within 5

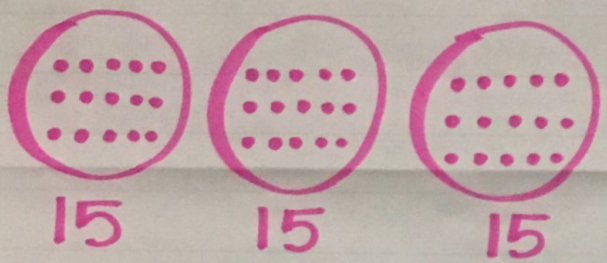


- "Getting Started"

→ focuses on subtraction as a concept and rules

multiplication strategy menu

draw a picture



15 15 15

15 x 3 = 45

partial product

15 x 3 =

10 + 5

10 x 3 = 30

5 x 3 = 15

30 + 15 = 45

15 x 3 =

repeated addition

15 x 3 =

15 + 15 + 15 = 45

area model

15 x 3 =

	10	5
3	10 x 3 = 30	5 x 3 = 15

10 x 3 = 30

+ 5 x 3 = 15

45

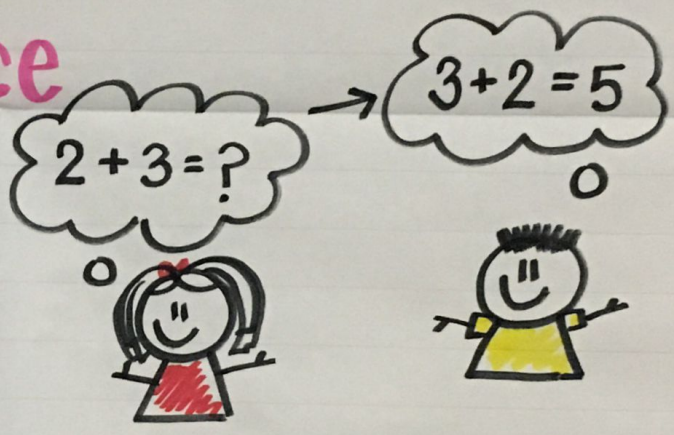
Beyond the Basic Facts
Grades 2-8

- **Introduction of the Facts**
  - intro 2-3 facts using the commutative property
  - "Since 2+3=5 then 3+2=5"

- **Fluency Practice**
  - ☐ see it
  - ☐ say it
  - ☐ write

  5 times each

- **Oral Fluency Practice**
  - ☐ whole class practice
  - ☐ partner practice



- **Application**
  - apply the facts you practiced to larger problems & prove them using a strategy

$$2+3=5$$

$$\begin{array}{r} 2 \\ +\ 3 \\ \hline 5 \end{array}$$

⁘ + ⁘ = ⁙

2+3=5

$$12+23=$$

$$\begin{array}{r} 12 \\ +\ 23 \\ \hline 35 \end{array}$$

|⁚ + ||⁚ = |||⁚⁚

12 + 23 = 35

Share & Student Presentations

- My first step is . . .
- I know this because . . .
- My next step is . . .
- I can prove my answer by . . .

REMEMBER

- ☐ Speak clearly
- ☐ Use complete sentences
- ☐ Include math vocabulary

Math Group Jobs

Leader

- reads answers
- facilitates conversation
  "Agree?"
  "Why or why not?"

Problem Solver

- thinks aloud while working out the problem on a whiteboard

Judge

- makes final decision if team cannot come to an agreement

Spy

- Goes to another group to check on answer
- Asks how they solved it and reports back

Reaching Consensus Guidelines

- I agree with _____ because _____.
- I disagree with _____ because _____.
- I don't understand _____.
- I think _____.
- Another way to solve this is _____.

→ When finished your team can:

- Create a drawing to prove an answer
- Write an explanation for how you solved
- Practice presenting

Grades 3-8 Conceptual Lesson

Problem of the Day

Spiral review problem. I do one! You do one!

Lesson Opener

Title, objective, vocabulary

Input / Model

I do it! (2 problems)

Structured Guided Practice

We do it! (2 problems)

Final Check for Understanding

2 problems to ✓ student understanding

Closure

Oral or written reflection of day's lesson

Grades 2-8 Procedural Lesson

Problem of the Day

Spiral review problem: I do one! You do one!

Input/Model

I do it! (about 2 problems)

Structured Guided Practice

We do it! (about 2 problems)

Final Check for Understanding

Two problems to ✓ student understanding

Student Practice

You do it! (about 6 problems)

Reaching Consensus

math groups: I agree _____. I disagree _____.

Student Presentations

math groups take turns presenting the S.P. problems

Closure

oral or written reflection of day's lesson