
Helping with Math Homework

Grade 3

Agenda

- Introductions
- Our Math Curriculum and Teaching Methods
- Major Math Work of 3rd Grade
- Models and Terms used in 3rd Grade
- What's the Purpose of 3rd grade Math Homework?
- What Parents Need to Know to Help with Math Homework
- Doing the Homework!
- Helpful Tools
- Final Thoughts about Homework
- Let's do some math!

Our Curriculum and Teaching Methods

- Engage NY/Eureka, supplemented with teacher-created lessons and investigations
- Methods:
 - Hands-on experiences, inquiry, meaningful tasks
 - Math discussion/debate - justifying ideas
 - Valuing kids' ideas and building off them
- Experiences move from concrete to pictorial to abstract

What is the Major Math Work of 3rd Grade?

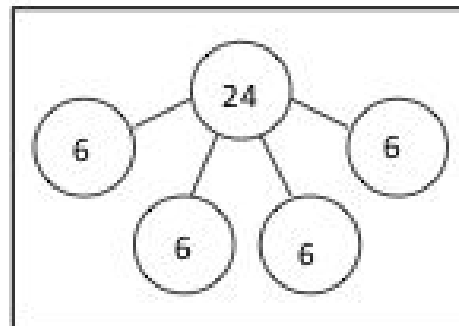
- Develop a conceptual understanding of multiplication and division.
- Understand the properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve story problems involving the four operations.
- Develop understanding of the unit fraction, and use that understanding to compare and place fractions on a number line.

Models and Terms used in 3rd Grade

Equation

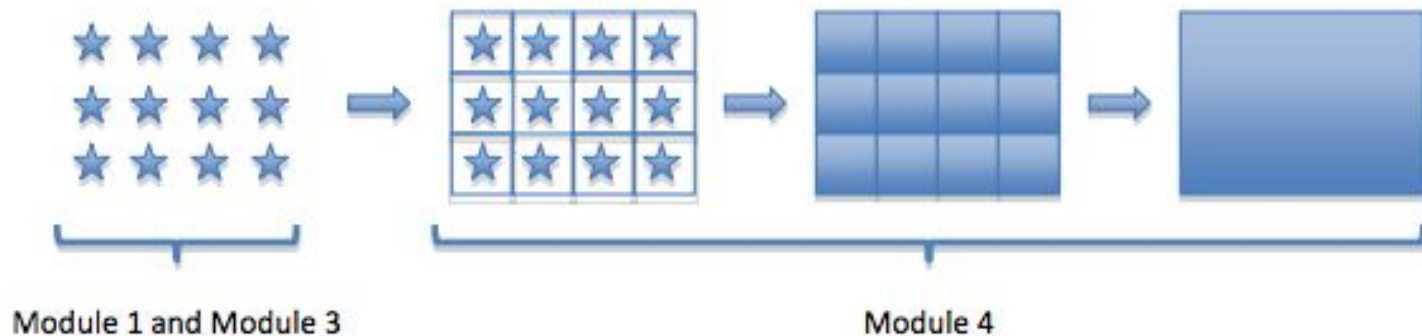
$$\begin{array}{ccccccc} 4 & & \times & & 6 & = & 24 \\ \downarrow & & & & \downarrow & & \downarrow \\ \text{number} & & & & \text{size} & & \text{total} \\ \text{of} & & & & \text{of} & & \\ \text{groups} & & & & \text{groups} & & \end{array}$$

Number Bond



Models and Terms used in 3rd Grade

Array

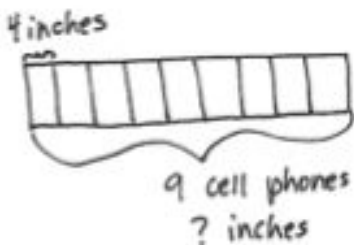


Progression from Rectangular Array to Area Model

Models and Terms used in 3rd Grade

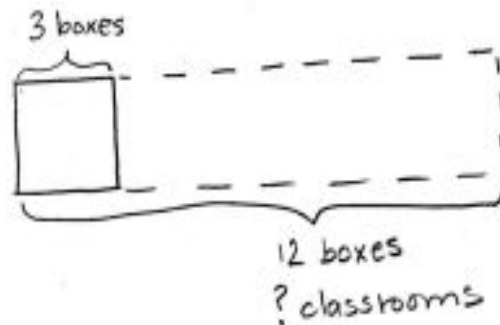
Tape Diagrams

A cell phone is about 4 inches long. About how long are 9 cell phones laid end to end?



$9 \times 4 = 36$
9 cell phones are
about 36 inches long.

A school buys 12 boxes of pencils. Each classroom gets 3 boxes. How many classrooms get boxes of pencils?

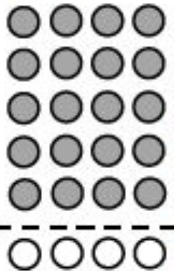


Models and Terms used in 3rd Grade

Break apart and distribute

The Distributive Property

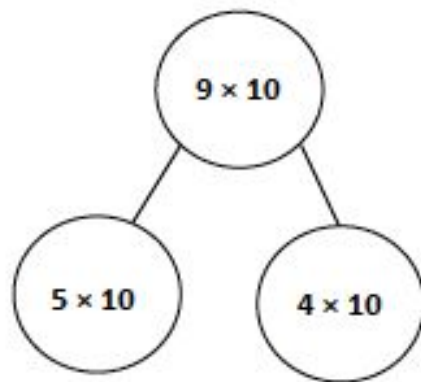
$6 \times 4 = \underline{\quad}$



$(5 \times 4) = 20$


$(1 \times 4) = 4$

$(6 \times 4) = (5 \times 4) + (1 \times 4)$
 $= 20 + 4$



Commutative

The Commutative Property



3 rows of 5 5 rows of 3

$3 \times 5 = 5 \times 3$

What's the purpose of 3rd grade math homework?

- Offers extra practice for concepts we're working on extensively in school
- Gives parents a window into the work their kids are doing in school

3rd Grade Homework: What Parents Need to Know

- 5×3 means 5 **groups of 3**.
 - Parents can ask ... how many groups? How many in each group? How many altogether?
- 15 divided by 3 *could* mean
 - 15 divided into 3 equal groups, with 5 in each group, OR
 - 15 divided into 5 equal groups, with 3 in each group
 - Parents can ask ... do you know how many groups? Or how many in each group?
- Strategies for solving multiplication and division problems
 - Skip count (or count on)
 - Draw a model (groups/objects in each group)
 - Repeated addition
 - Using the commutative and distributive properties as strategies
 - 3×9 is the same as 9×3 - so you can use that if one of those is easier for you than the other!
 - When solving 9×6 , you can break apart the one of the factors to help (i.e. 9×6 is also $(9 \times 5) + (9 \times 1)$)

Doing the Homework

- Try solving the problems using the models and ways of thinking we have just discussed.
- Show your thinking when appropriate, and ask us questions!

Strategies for Helping No Matter What the Content

- Start by asking, “What do you already know about solving problems like this?”
- Try reading the problem aloud together.
- Ask your child, “Can you draw something (or make a model) that shows what’s happening in the problem?”
- Encourage perseverance -- remind kids that working hard makes their brains grow!
- Know when to say when -- set a time limit and avoid battling over homework.
- Remember, it’s OK if there are mistakes!

P.S. 261 3rd Grade Math Support

<http://www.ps261brooklyn.org/parent-resources/3rd-grade-math-home-support/>