# The Eureka Effect:

# The Aha Moment!

**Presenter: Telisha Allen-Stark**

# What Will We Do Today?

- Components of a Lesson
- Hands On Activities
- Informal and Formal Assessments
- Ways for Parents to Help at Home

# Eureka Math Lesson

## Total Teaching Time: 60 Minutes

- Fluency Practice & Sprint (12 minutes)
- Application Problem (10 minutes)
- Concept Development (28 minutes)
- *Problem Set (10 minutes included in Concept Development)
- Student Debrief (10 minutes)
- *Exit Ticket (3 minutes not included)
- *Homework (not included)

# Eureka Math Lesson

## A Glance At Grade 3

- Module 1 – Properties of Multiplication & Division and Solving Problems with Units 2-5 and 10
- Module 2 -Problem Solving with Mass, Time, and Capacity
- Module 3 -Multiplication and Division with Factors of 6, 7, 8, and 9
- Module 4-Multiplication and Area
- Module 5-Fractions as Numbers on the Number Line
- Module 6-Collecting and Displaying Data
- Module 7-Word Problems with Geometry and Measurement

# Fluency Practice & Sprint

- Fluency Practice usually consists of students counting by different numbers backwards and forwards.

- Sprint is a timed math fact activity.

# FLUENCY VIDEO

# LET'S PRACTICE FLUENCY

# SPRINT VIDEO

**A** # Correct _____

Multiply.

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 x 6 = | | 23 | 10 x 6 = | |
| 2 | 6 x 1 = | | 24 | 9 x 6 = | |
| 3 | 2 x 6 = | | 25 | 4 x 6 = | |
| 4 | 6 x 2 = | | 26 | 8 x 6 = | |
| 5 | 3 x 6 = | | 27 | 6 x 3 = | |
| 6 | 6 x 3 = | | 28 | 7 x 6 = | |
| 7 | 4 x 6 = | | 29 | 6 x 6 = | |
| 8 | 6 x 4 = | | 30 | 6 x 10 = | |
| 9 | 5 x 6 = | | 31 | 6 x 5 = | |
| 10 | 6 x 5 = | | 32 | 6 x 4 = | |
| 11 | 6 x 6 = | | 33 | 6 x 1 = | |
| 12 | 7 x 6 = | | 34 | 6 x 9 = | |
| 13 | 6 x 7 = | | 35 | 6 x 6 = | |
| 14 | 8 x 6 = | | 36 | 6 x 3 = | |
| 15 | 6 x 8 = | | 37 | 6 x 2 = | |
| 16 | 9 x 6 = | | 38 | 6 x 7 = | |
| 17 | 6 x 9 = | | 39 | 6 x 8 = | |
| 18 | 10 x 6 = | | 40 | 11 x 6 = | |
| 19 | 6 x 10 = | | 41 | 6 x 11 = | |
| 20 | 6 x 3 = | | 42 | 12 x 6 = | |
| 21 | 1 x 6 = | | 43 | 6 x 12 = | |
| 22 | 2 x 6 = | | 44 | 13 x 6 = | |

# Sprint Sample

**B** Improvement _____ # Correct _____

Multiply.

| | | | | | |
|---|---|---|---|---|---|
| 1 | 6 x 1 = | | 23 | 9 x 6 = | |
| 2 | 1 x 6 = | | 24 | 3 x 6 = | |
| 3 | 6 x 2 = | | 25 | 8 x 6 = | |
| 4 | 2 x 6 = | | 26 | 4 x 6 = | |
| 5 | 6 x 3 = | | 27 | 7 x 6 = | |
| 6 | 3 x 6 = | | 28 | 5 x 6 = | |
| 7 | 6 x 4 = | | 29 | 6 x 6 = | |
| 8 | 4 x 6 = | | 30 | 6 x 5 = | |
| 9 | 6 x 5 = | | 31 | 6 x 10 = | |
| 10 | 5 x 6 = | | 32 | 6 x 1 = | |
| 11 | 6 x 6 = | | 33 | 6 x 6 = | |
| 12 | 6 x 7 = | | 34 | 6 x 4 = | |
| 13 | 7 x 6 = | | 35 | 6 x 9 = | |
| 14 | 6 x 8 = | | 36 | 6 x 2 = | |
| 15 | 8 x 6 = | | 37 | 6 x 7 = | |
| 16 | 6 x 9 = | | 38 | 6 x 3 = | |
| 17 | 9 x 6 = | | 39 | 6 x 8 = | |
| 18 | 6 x 10 = | | 40 | 11 x 6 = | |
| 19 | 10 x 6 = | | 41 | 6 x 11 = | |
| 20 | 1 x 6 = | | 42 | 12 x 6 = | |
| 21 | 10 x 6 = | | 43 | 6 x 12 = | |
| 22 | 2 x 6 = | | 44 | 13 x 6 = | |

# Sprint Sample

# LET'S PRACTICE A SPRINT

# Ways to Enhance Fluency Practice & Sprint

- Get the students up and use movements to do counting fluency. Example, counting by 2s-students should roll shoulder on multiples of 2 or counting by 3s-students should clap on multiples of 3

- Before you begin a sprint in your class, find a song that would motivate students do their best on the sprints. Examples: Happy Song by Pharell, Black and Gold Saints Theme Song by K. Gates, Boom, Boom, Boom by Black Eyed Peas

# Eureka "Basics"

- RDW = Read, Draw, Write
- Number Bonds
- Tape Diagrams

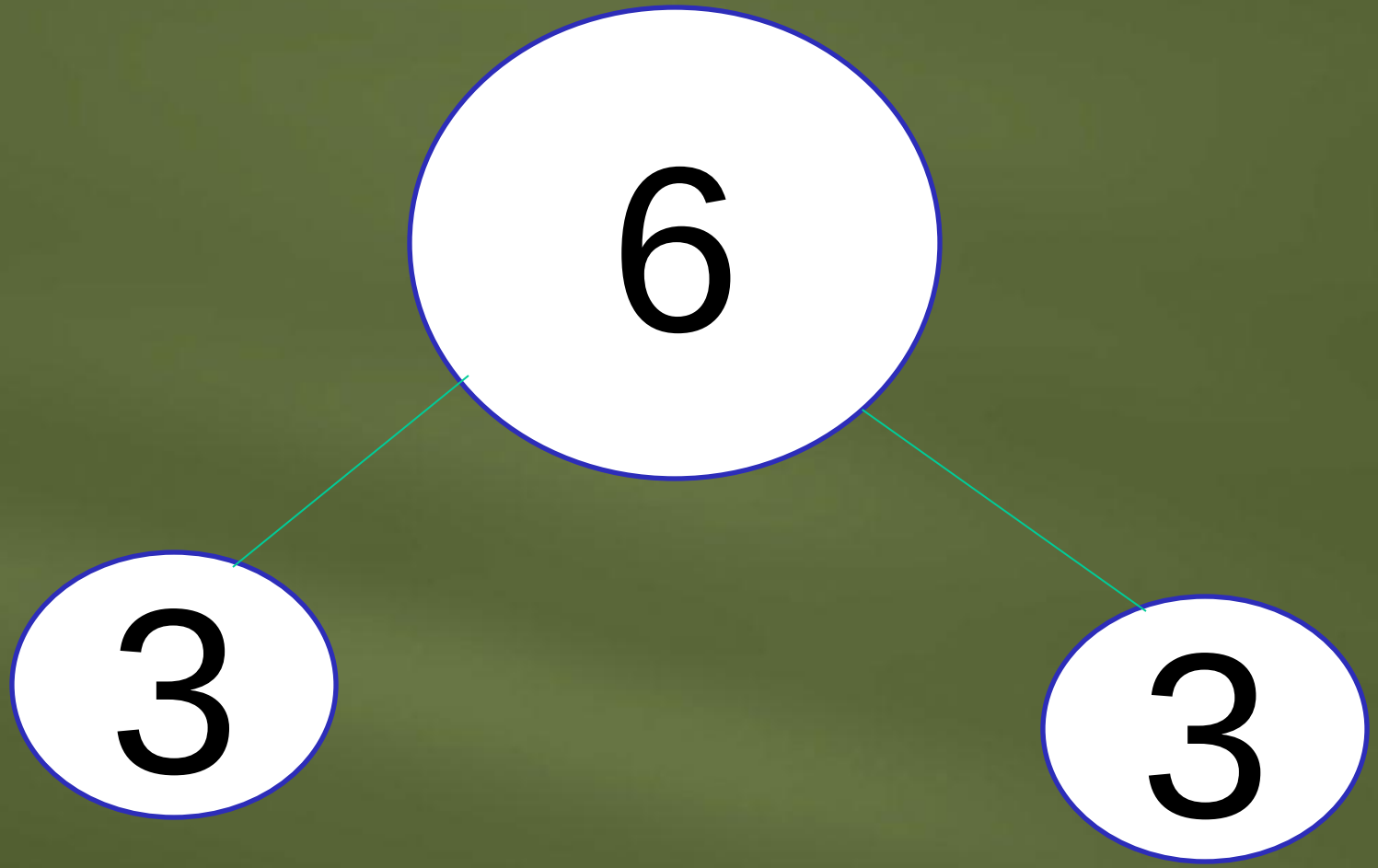
# Application Problem

- Time frame: 8 minutes
- Review of skill from previous day

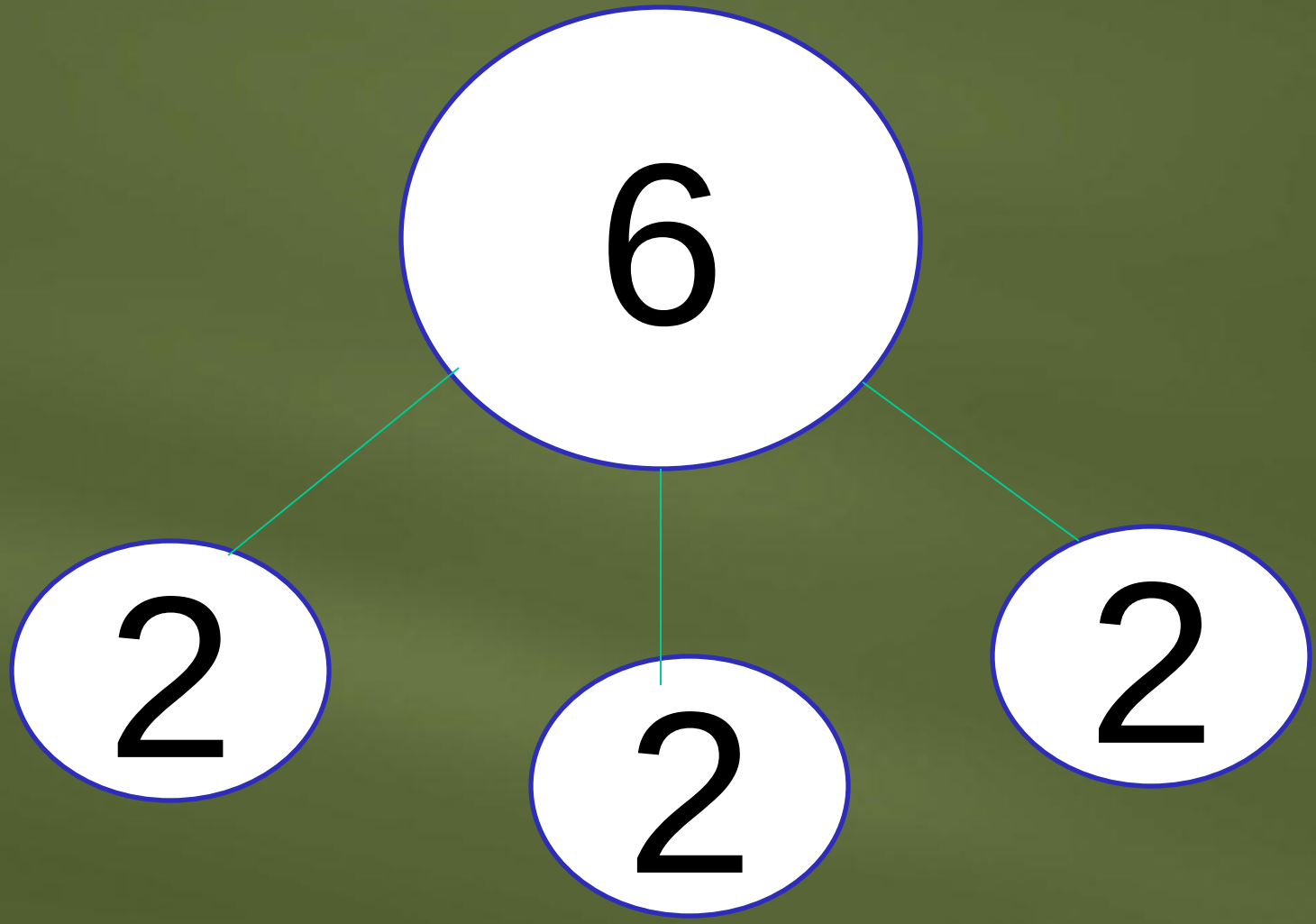
# Application Problem

Robbie sees that a carton of eggs show an array with 2 rows of 6 eggs. What is the total number of eggs in the carton? Use the RDW process to show your solution.

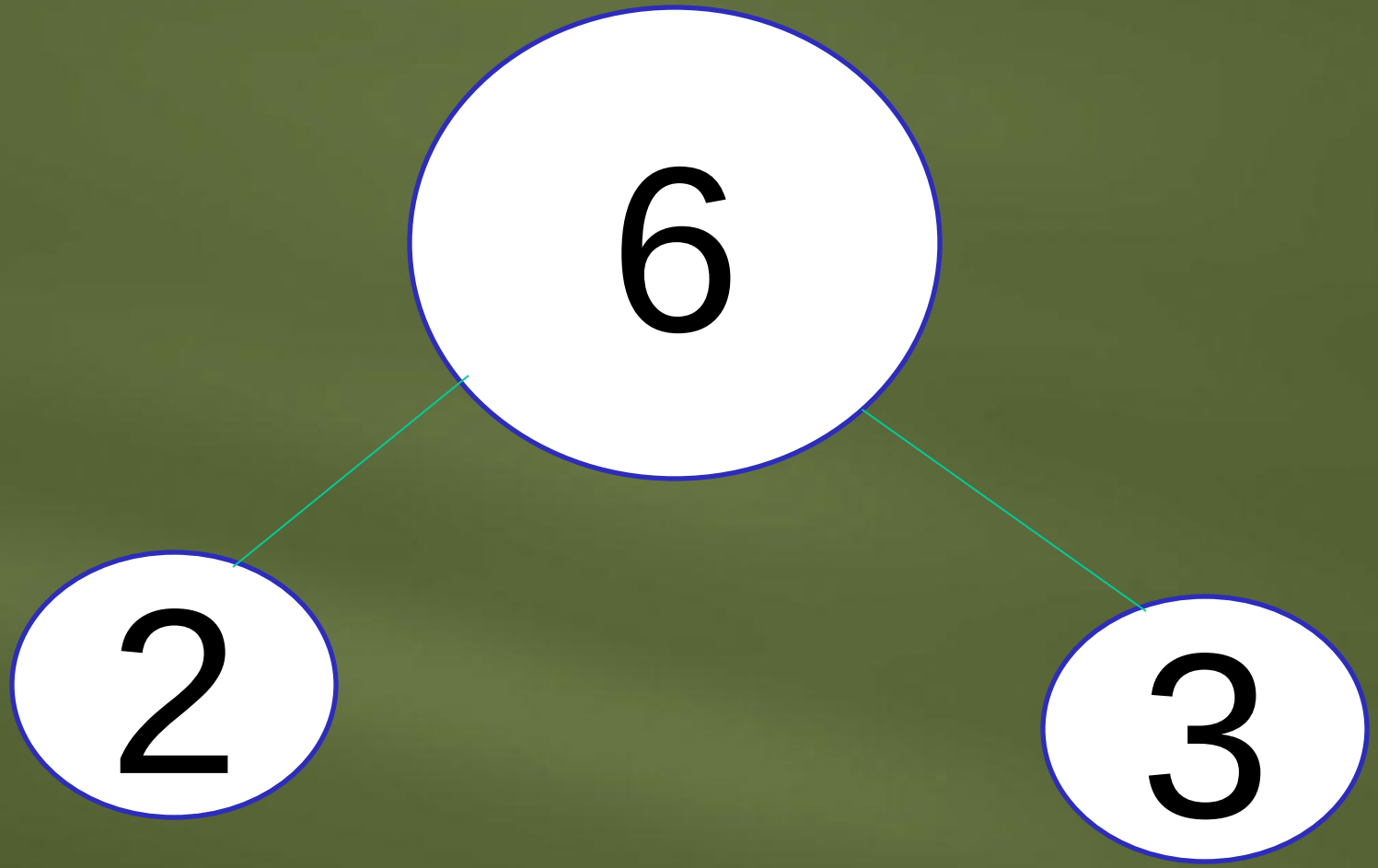
# NUMBER BOND



# NUMBER BOND

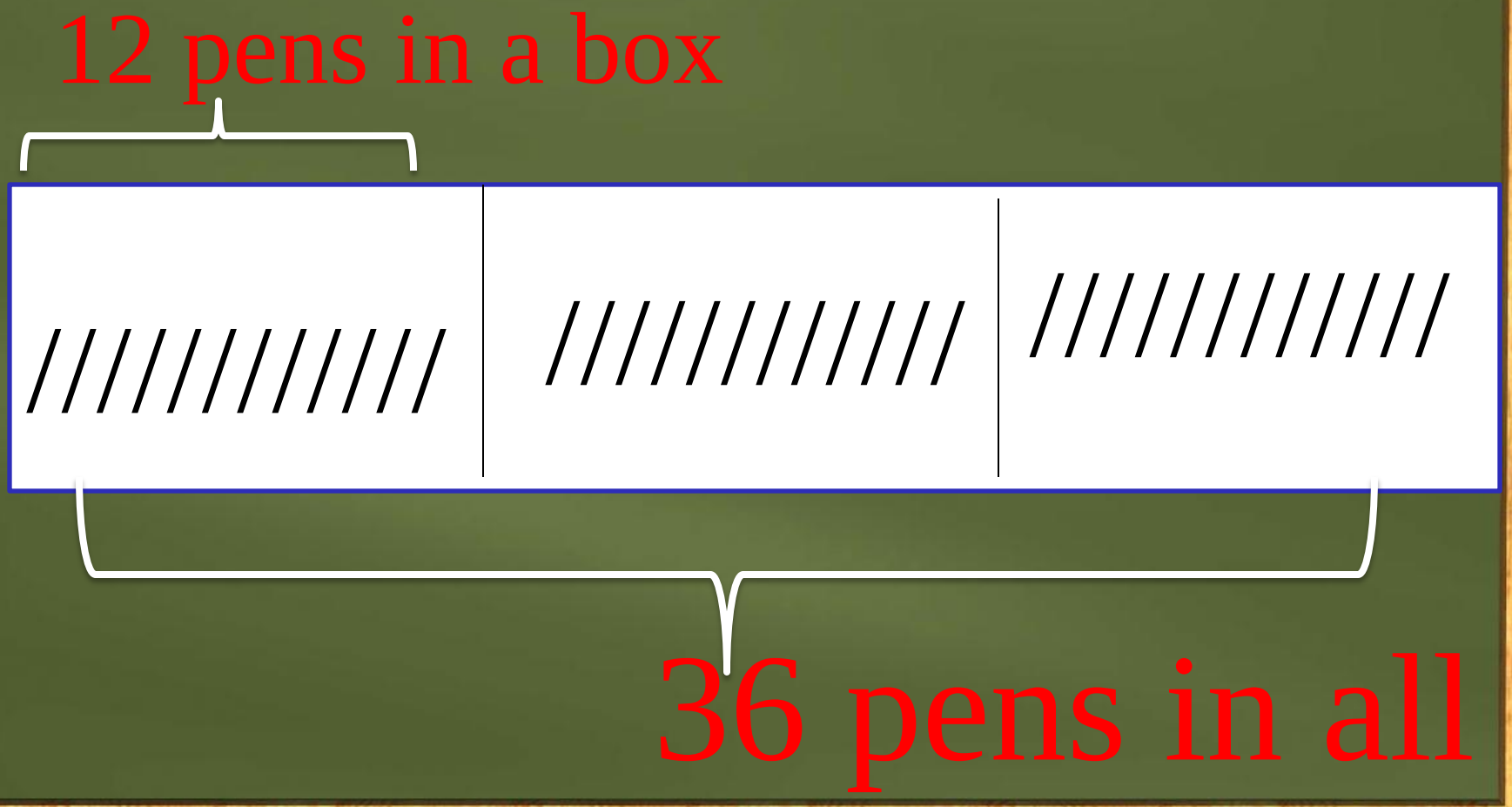


# NUMBER BOND



# TAPE DIAGRAM

Hannah bought 3 boxes of pens. There were 12 pens in each box. How many pens did Hannah buy?



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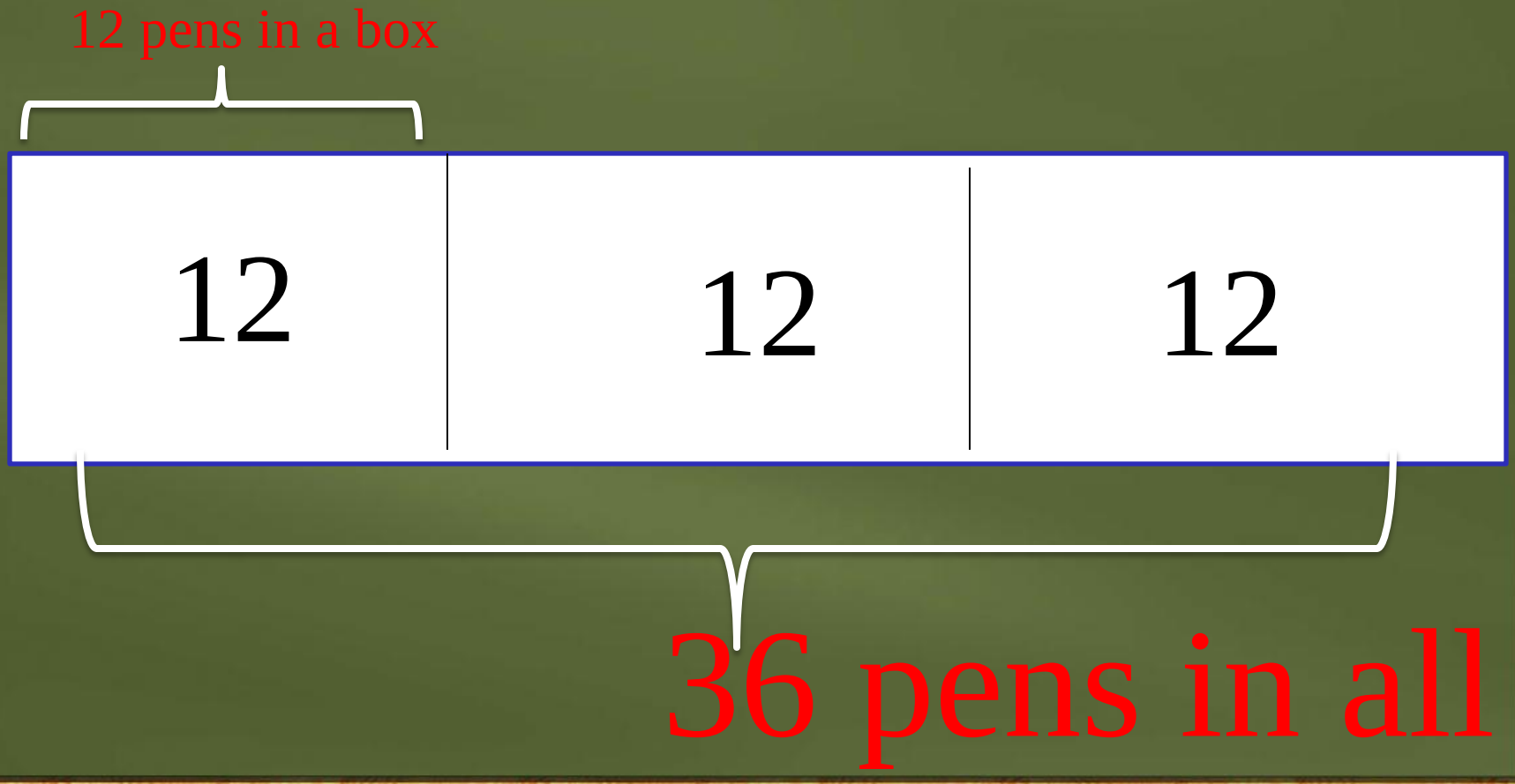
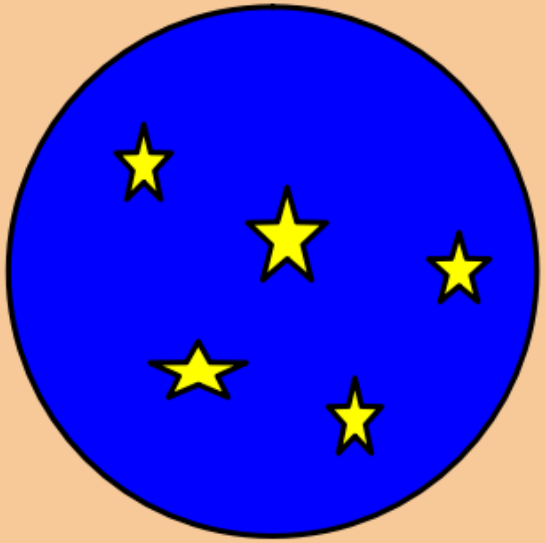


# Concept Development

- Time frame:  28 minutes
- It's the "meat " of the lesson.
- Problem set time frame is included in concept development.
- Teacher/Student script is included.



How many groups are circled? _____

How many are in each group? _____

Write it as an addition sentence. _____

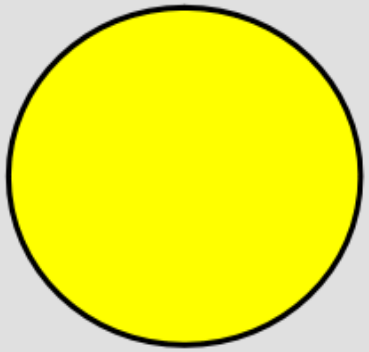
Write a multiplication sentence representing 3 fives equals 15.
_____

# Divide Yourself Into 4 Equal Groups

Multiplication Sentence

## 5 minutes-Thumbs up

*Problem 2* **Draw a Number bond to represent your groups.**



_____ **(Multiplication Sentence)**

# Problem Set

- Time frame: 10 minutes (included in Concept Development Time)
- Students can complete independently or in groups.
- Students are encouraged to complete all the problems.
- Teachers can pull struggling students at this time.
- Remember the homework will look like the problem set.

Solve numbers 1–4 using the pictures provided for each problem.

1. There are 5 flowers in each bunch. How many flowers are in 4 bunches?

a. Number of groups: _____ Size of each group: _____

b. 4 × 5 = _____

c. There are _____ flowers altogether.

---

2. There are _____ candies in each box. How many candies are in 6 boxes?

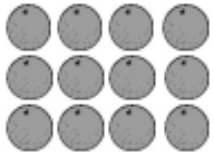
a. Number of groups: _____ Size of each group: _____

b. 6 × _____ = _____

c. There are _____ candies altogether.

---

3. There are 4 oranges in each row. How many oranges are there in _____ rows?



a. Number of rows: _____ Size of each row: _____

b. _____ × 4 = _____

c. There are _____ oranges altogether.

4. There are _____ loaves of bread in each row. How many loaves of bread are there in 5 rows?

a. Number of rows: _____ Size of each row: _____

b. _____ × _____ = _____

c. There are _____ loaves of bread altogether.

5. a. Write a multiplication sentence for the array shown below.

X X X
X X X
X X X
X X X

b. Draw a number bond for the array where each part represents the amount in one row.

6. Draw an array using factors 2 and 3. Then show a number bond where each part represents the amount in one row.

# Mathematical Practice

- Used within the lessons
- Kid Friendly Posters

# Student Debrief

- Time frame: 10 minutes
- During the debrief, teacher and student will review vocabulary terms and make connections using the problem set.
- The teacher's manual provides lots of higher order thinking/rigorous questions during this time.

# Student Debrief

- Why do you think I started the lesson by asking you to divide yourselves into equal groups in the corners of the room?

- Identify the factors and their meanings from each image on the Problem Set from 1 to 5.

- In Problem 6, discuss the two ways to draw the array and number bond with factors 2 and 3.

- Module 1 introduces many new vocabulary words: row, array, number of groups, size of groups, and factor. You may want to have students make a vocabulary page in their math journals.

# Exit Ticket

- Time frame: 3minutes
- Students complete exit tickets individually.
- Teacher will be able to get an instant cue on who didn't understand today's lesson.
- Great tool to use to see who needs remediation.

# EXIT TICKET

Draw an array that shows 5 rows of 3 squares. Then show a number bond where each part represents the amount in one row.

# HOMEWORK

Name _____ Date _____

Solve problems 1–4 using the pictures for each problem.

1. There are 5 pineapples in each group. How many pineapples are there in 5 groups?

   a. Number of groups: _____ Size of each group: _____

   b. 5 × 5 = _____

   c. There are _____ pineapples altogether.

---

2. There are _____ oranges in each basket. How many oranges are there in 6 baskets?

   a. Number of groups: _____ Size of each group: _____

   b. 6 × _____ = _____

   c. There are _____ oranges altogether.

3. There are 4 bananas in each row. How many bananas in _____ rows?

a. Number of rows: _____ Size of each row: _____

b. _____ × 4 = _____

c. There are _____ bananas altogether.

---

4. There are _____ peppers in each row. How many peppers are there in 6 rows?

a. Number of rows: _____ Size of each row: _____

b. _____ × _____ = _____

c. There are _____ peppers altogether.

---

5. Draw an array using factors 4 and 2. Then show a number bond where each part represents the amount in one row.

# HANDS ON ACTIVITIES

# Math Learning Stations

| | Mon. | Tues. | Wed. | Thurs. | Fri. |
|---|---|---|---|---|---|
| Group 1 | Computer Station | Tape Diagram Station | Teacher Center | Number Bond Station | Word Problem Station |
| Group 2 | Word Problem Station | Computer Station | Tape Diagram Station | Teacher Center | Number Bond Station |
| Group 3 | Number Bond Station | Word Problem Station | Computer Station | Tape Diagram Station | Teacher Center |
| Group 4 | Teacher Center | Number Bond Station | Word Problem Station | Computer Station | Tape Diagram Station |
| Group 5 | Tape Diagram Station | Teacher Center | Number Bond Station | Word Problem Station | Computer Station |

# Word Problem Station


**Materials Needed:** Word problems, transparencies, white paper, dry erase markers, wipes.

**Directions:**

1. Read the word problem.
2. Use the strategies to figure out which operation to use for the problem.
3. Check your answers.
4. Choose another word problem to solve.

# Computer Station

**Materials Needed:** computer stations and Promethean Board and laptop

**Directions:**

1. Go to www.multiplication.com or www.mathplayground.com
2. Click on any Multiplication or Division game.
3. You can only play a multiplication or division game.
4. Choose another game to play when you are finish.

# Tape Diagram Station

Materials Needed: white laminated strips, dry erase markers, felt erasers, Post It sticky notes, word problems

Directions:

1. Read the word problem.
2. Look for important information needed to solve the word problem.
3. Make a tape diagram to go along with the word problem.
4. Check your work.

# Tape Diagram Station

Materials Needed: white laminated strips, dry erase markers, felt erasers, Post it sticky notes, word problems

Directions:

1. Read the word problem.
2. Look for important information needed to solve the word problem.
3. Make a tape diagram to go along with the word problem.
4. Check your work.

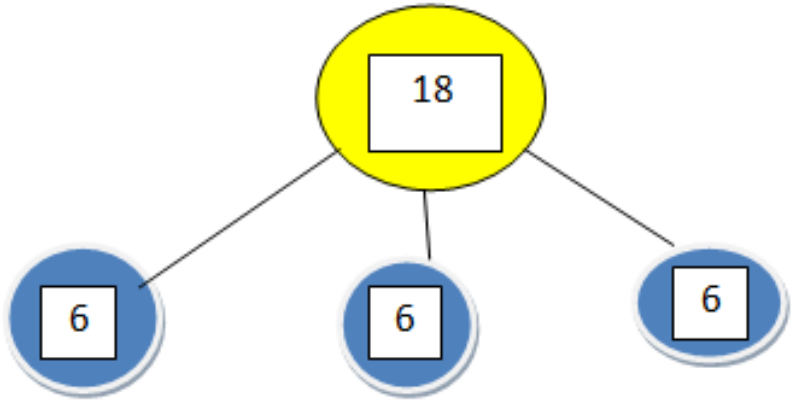
$2 per notebook

$ 2 | $ 2 | $ 2 | $ 2

$8 for 4 notebooks

11. Bonnie bought 2 packages of paper towels. There were 4 rolls in each package. How many rolls of paper towels did Bonnie buy?

# Number Bond Station




**Materials Needed:** yellow and blue circles, dry erase markers, scratch paper, pencils, felt eraser

**Directions:**

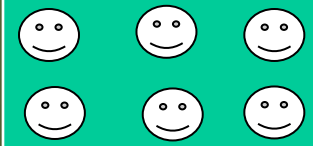
1. Choose a yellow circle to create a number bond.
2. Use the blue circles to write numbers that equal the total in the yellow circle.
3. Use scratch paper if you need extra help.
4. Remember the tips for creating number bonds.


Number Bond Station
18
6
6
6
Materials Needed: yellow and blue circles, dry erase markers, scratch paper, pencils, felt eraser
Directions:
1. Choose a yellow circle to create a number bond.
2. Use the blue circles to write numbers that equal the total in the yellow circle.
3. Use scratch paper if you need extra help.
4. Remember the tips for creating number bonds.
40
10
10
10
10

# Teacher  Center

| | Mon. | Tues. | Wed. | Thurs. | Fri. |
|---|---|---|---|---|---|
| Group 1 | | | Target Skill-2 Step Word Problems/Tape Diagrams | | |
| Group 2 | | | | Target Skill-2 Step Word Problems/Tape Diagram | |
| Group 3 | | | | | Target Skills- Number Bonds, Facts |
| Group 4 | Target Skills- Number Bonds, Facts | | | | |
| Group 5 | | Target Skills- Distributive Property, Tape Diagrams, Word Problems | | | |

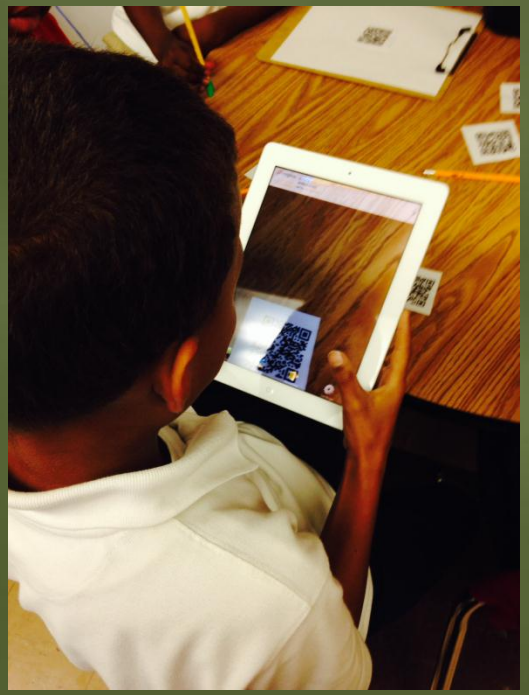
# Review Squares

| | | |
|---|---|---|
| Draw a number bond for 30. | Explain an array. | Write a multiplication fact for 2 + 2 + 2 + 2 + 2 + 2 + 2= 14. |
| Tell the difference between the size of the group and the number of groups. | Can do a count by 3. | Explain commutative property. |
| Write a multiplication fact for the picture.  | Explain a tape diagram. | Say the first 10 multiples of 5. |

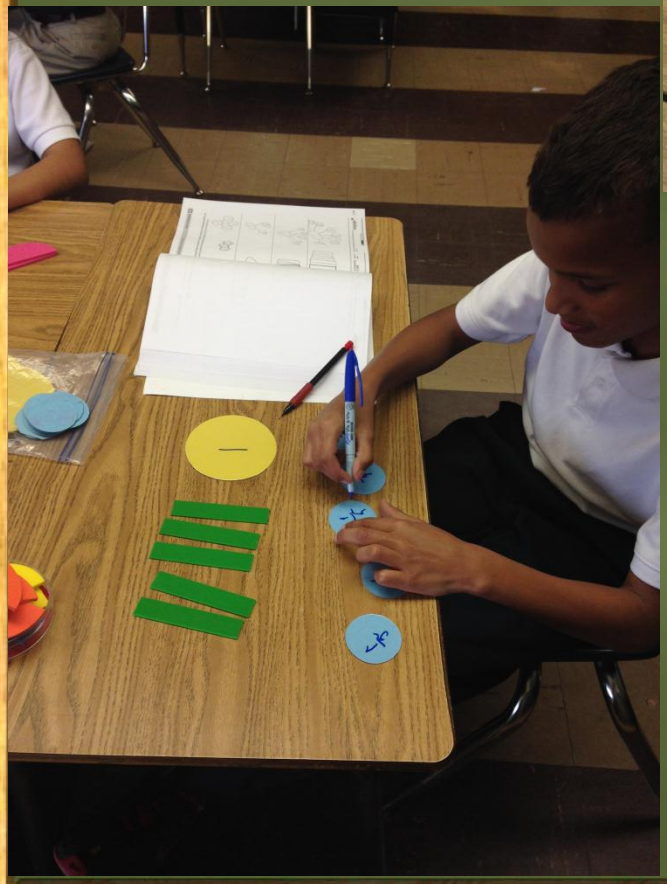
# Modeling

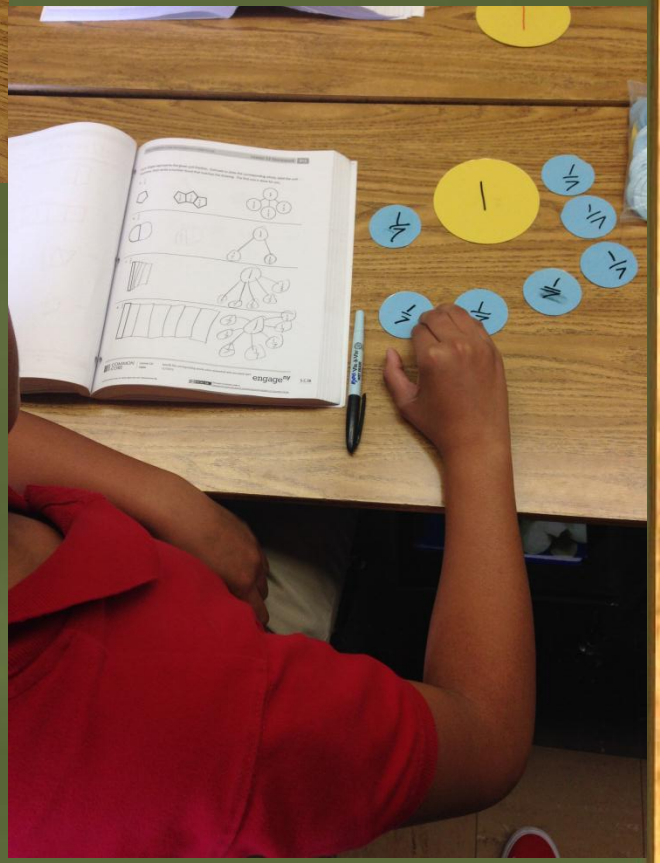

Group 1
Teacher Center
Center
Listening center
Comprehension
Center
Group 4
100g
100g
100g
100g
100g

# QR Codes

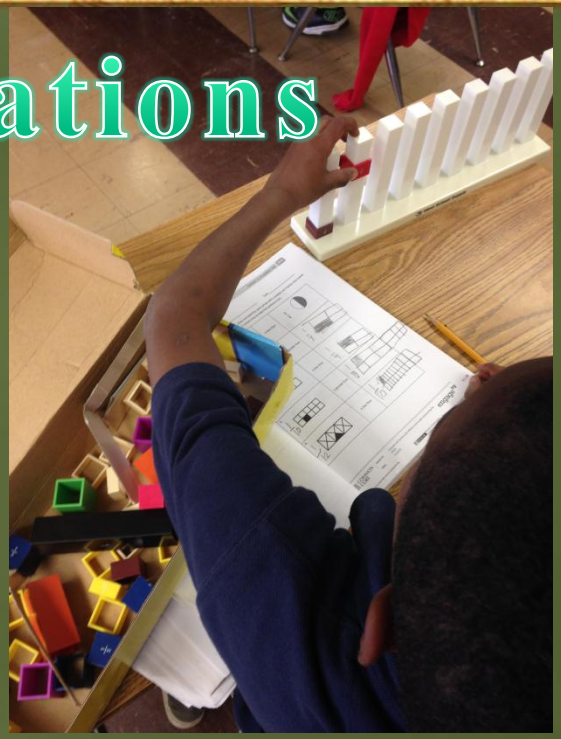


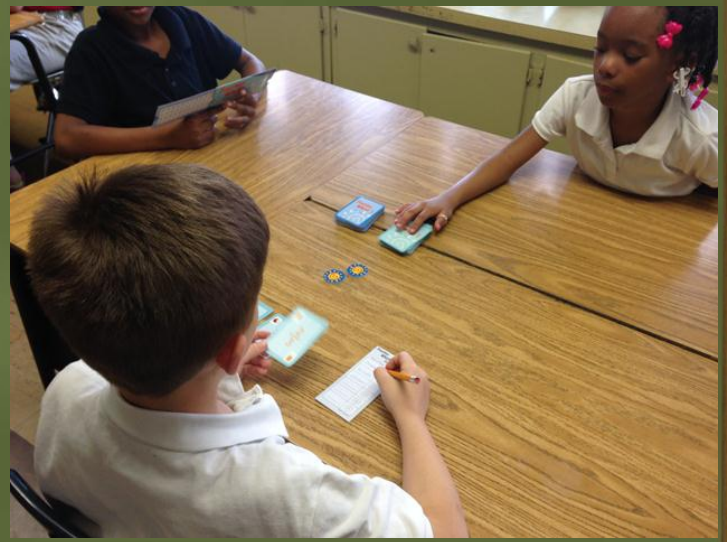

# Fraction Number Bonds



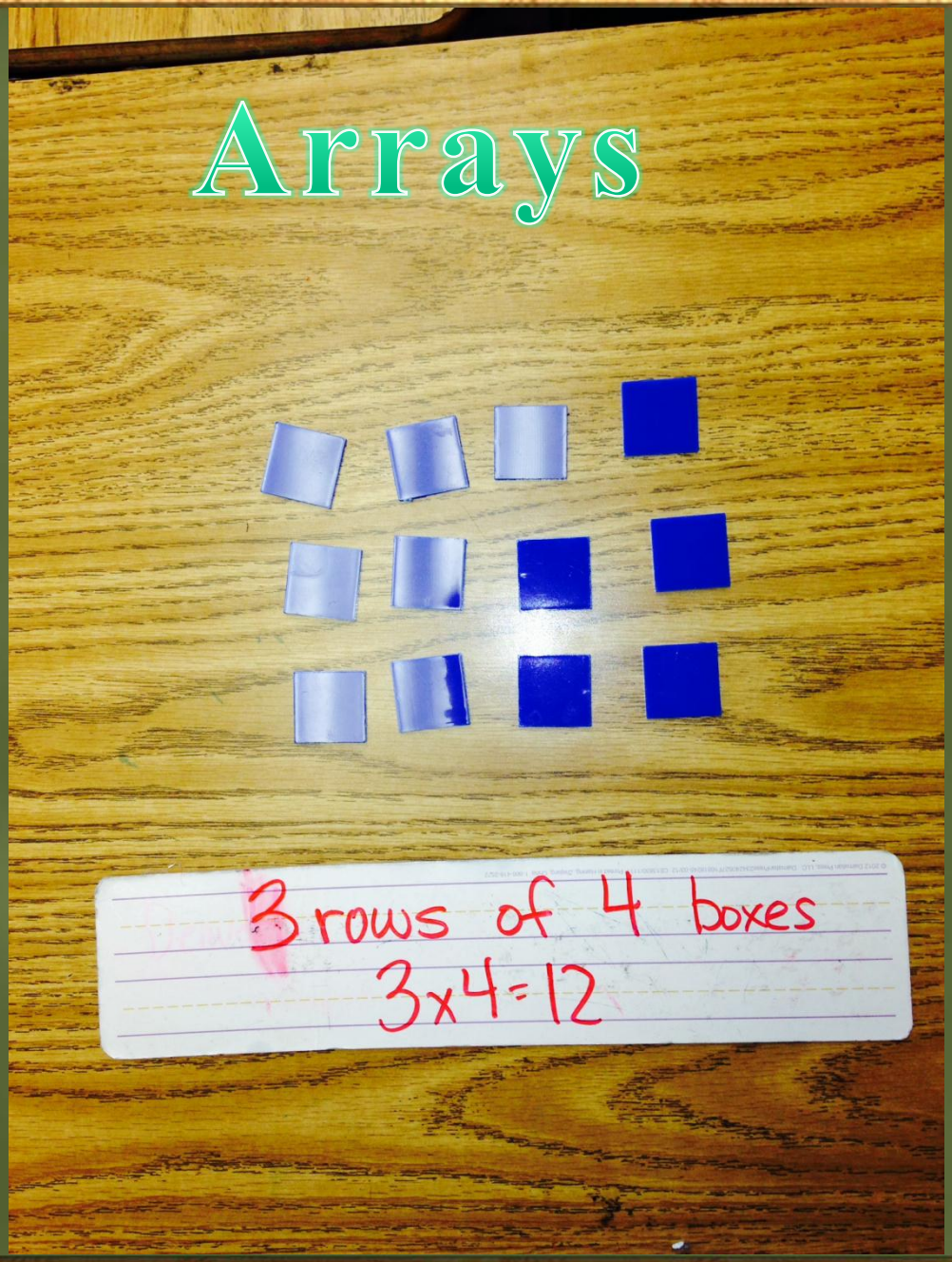


# Fraction Stations

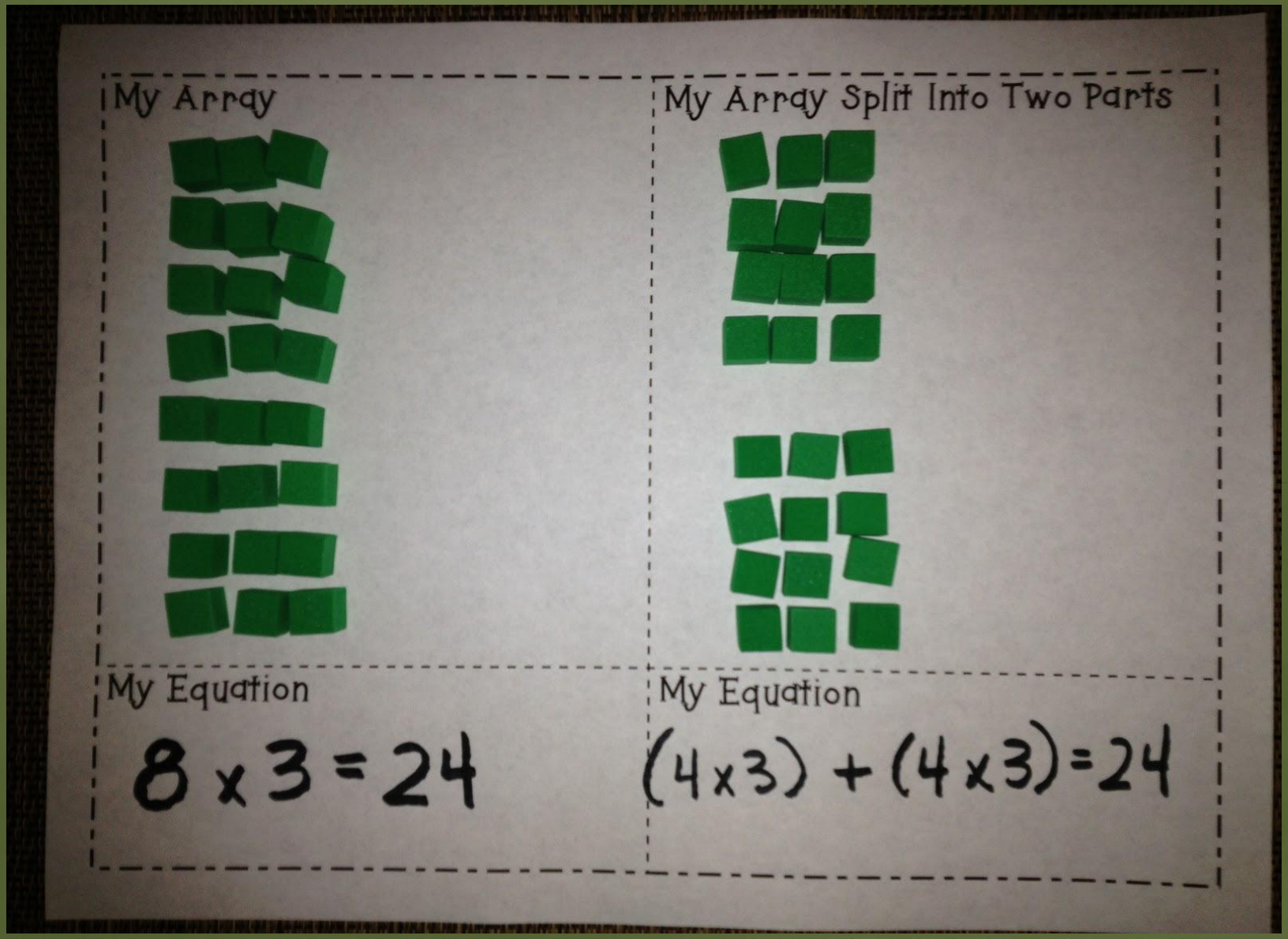





# Arrays



http://mathcoachscorner.blogspot.com/p/freebies.html



# REMEDIATION

-Guidebooks

# INFORMAL & FORMAL ASSESSMENTS

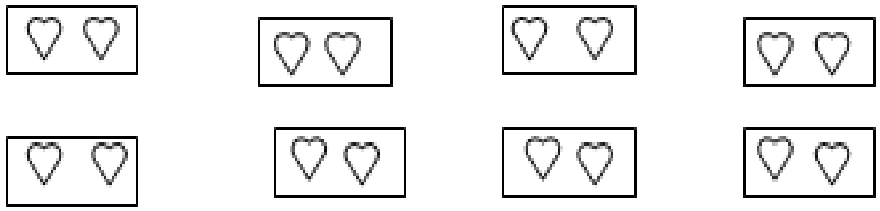
# Assessments

- ActivExpressions
- Exit Tickets
- Teacher Created Assessments
- EAGLE
- PARCC Online

# Module 1-Lesson 3-Size of the Group

Part A. Groups

1. There are 2 hearts in each box. How many hearts are in 8 boxes?



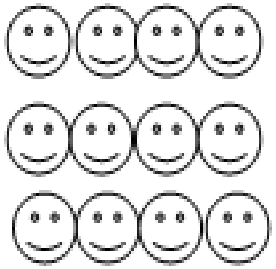
a. Number of groups: _____ Size of group: _____

b. 8 X 2 = _____

c. There are _____ hearts altogether?

Part B. Array

2. Write a multiplication sentence for the array shown below.



_____

Teacher Created

# Great Assessments: Houghton Mifflin Harcourt OnCore Mathematics-Grade 3

Name _____

**Lesson 1**
CC.3.OA.1

1. There are 5 tables in the library. Four students are sitting at each table.

How many students are sitting in the library?

Ⓐ 9 Ⓒ 20
Ⓑ 16 Ⓓ 24

2. Alondra made 3 bracelets. There are 7 beads on each bracelet.

How many beads did Alondra use to make the bracelets?

Ⓐ 10 Ⓒ 21
Ⓑ 14 Ⓓ 24

3. Stella decorated using 4 groups of balloons. She drew this model to show the number of balloons.

How many balloons did Stella use to decorate?

Ⓐ 3 Ⓒ 9
Ⓑ 6 Ⓓ 12

4. Mrs. Bennett sorted spools of thread into 3 containers. Each container held 3 spools.

How many spools of thread does Mrs. Bennett have in all?

Ⓐ 6 Ⓒ 10
Ⓑ 9 Ⓓ 12

5. Cory, Greg, and Carrie each have 4 stickers. Carrie says that she can find how many stickers they have in all by drawing 3 equal groups. How can she use the equal groups to find the number of stickers in all?

_____

_____

_____





# Ways to Help Parents

- Eureka Newsletters
- Dropbox Resources

# Additional Resources

-Educreation

-LiveBinder

# Contact Me

- misstesha_allen@yahoo.com