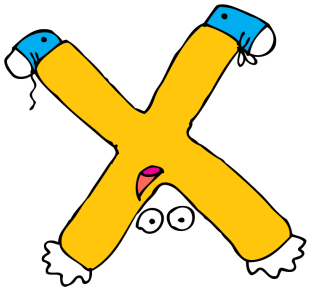
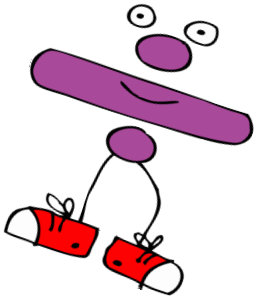
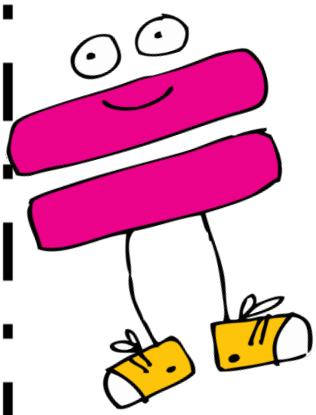
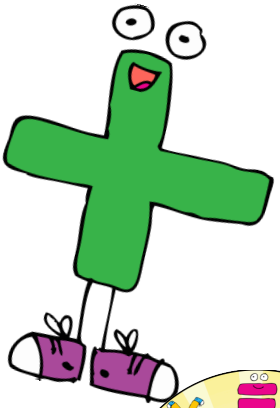
4th Grade Common Core Math Assessments





Operations & Algebraic Thinking





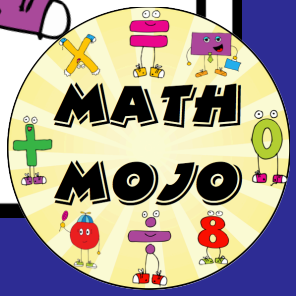


Table of Contents

	Page Numbers
Tips for Using These Assessments	3
Operations and Algebraic Thinking Assessments	4 - 13
Standards Achievement Graphs and Charts	14- 18
Operations and Algebraic Thinking Answer Key	19 - 20
Thank You and The Fine Print	21

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Using The Assessments

This pack contains 2 assessments for each of the 4th Grade Common Core Math Standards in the Operations and Algebraic Thinking domain. The first assessment is a “Skills Check”. It is a 4 question assessment designed to assess students ability to perform the skills from the standard, for example writing an equation or identifying prime and composite numbers.

The second assessment is called a “Performance Check”. This assessment is 2 questions and has students perform a task, solve a problem, and/or use higher order thinking skills. You can use both assessments together or use them separately.

Tracking Student Progress on the Assessments

There are 3 ways to track student achievement when using these assessments.

The tracking options include -

* **Individual Student Graphs** - Students can track the percent correct on each assessment with a bar graph (students can fill these out)
* **Individual Student Charts** - You can chart individual student data on the individual standards
* **Class Data Chart**- Chart the progress of your class and have all the student’s data in one place

Using The Data

This data can be used in multiple ways. Teachers can use it to discover class trends, to group students for enrichment or remediation, or to select topics for reteaching and review. The data can be gathered relatively quickly and can be used a a “quick check” before testing or it can be used to assess how well a student mastered a standard. A unique feature of this assessment is that you can look at students ability to perform a skill (Skills Checks) and a student’s ability to apply the skill (Performance Checks). Often that help to determine the type of remediation/reteaching that a student or class needs.

Math Assessment

Skills Check

4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

Name _____ Date _____

1. Markers come in packs of 8. Juanita has 4 packs of markers. Write an equation to find how many markers Juanita has in all.

2. James walks 5 miles a day. Write an equation to find how many miles he walks in a week (7 days).

3. Write an equation that goes with this statement, 42 is 7 times as many as 6 and 6 times as many as 7.

4. Represent the following multiplication problem in words.

$$3 \times 9 = 27$$

Math Assessment

Performance Check

4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

Name _____ Date _____

1. Write a multiplication equation to match each statement below.

Comparison Statement	Equation
36 inches is 3 times longer than 12 inches	
40 seashells is 8 times as many as 5 seashells	
42 minutes is 7 times as long as 6 minutes	

Write a comparison statement to match the equation below below.

Comparison Statement	Equation
	2 x 8 = 16
	9 x 4 = 36

2. The table shows the number of goals that several soccer players scored in soccer a season.

Player	Kate	Josh	Juan	Shea	Ellen
# of goals	5	8	16	20	4

Use the information from the table make the statements below true.

Juan scored _____ times as many goals as Josh.

Write an equation to show that relationship _____

Write an equation to show the relationship between the number of goals Ellen and Shea scored _____

Write a statement to describe that relationship

_____

Math Assessment

Skills Check

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Name _____ Date _____

1. A small popcorn costs $3. An extra large one costs 6 times as much. Which equation would find the cost of an extra large popcorn?

   A. $3 + 6 = p
   B. 6 x p = $3
   C. $3 x 6 = p
   D. $3 x p = 6

2. It took Juan 5 minutes to complete his homework. Margo completed her homework in 30 minutes. Which equation would show how many times longer it took Margo to complete her homework?

   A. 5 x 30 = h
   B. h ÷ 30 = 5
   C. 5 ÷ h = 30
   D. 5 x h = 30

3. Mila made 8 bracelets to sell at the school carnival. Ellen made 56 bracelets. How many times more bracelets did Ellen make?
   Write an equation to solve the problem, then solve it.

4. Seth took 9 times as long as Kate to complete his test. It took Kate 7 minutes. How long did it take Seth to complete his test?
   Write an equation to solve the problem, then solve it.

Math Assessment

Performance Check

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Name _____ Date _____

1. Write a number sentence to solve the problems below, then solve them.

   Amy has 4 goldfish. Mark has 6 times as many goldfish. How many goldfish does Mark have?

   Amy has 4 goldfish. Mark has 6 goldfish. How many goldfish do they have altogether?

   Compare and contrast the problems above. How are they alike? How are they different?

2. Morgan's garden produces 5 times as many tomatoes as Mitch's garden.

   If Morgan's garden produced 30 tomatoes, write and solve an equation to show how many tomatoes Mitch's garden produced.
   Explain how you solved that problem using words or pictures.

Math Assessment

Skills Check

4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Name _____ Date _____

1. The DJ at Roller-Rama skating rink plays songs for exactly 40 minutes. If each song is 6 minutes long. How many complete songs does he play?

2. Marvin made a necklace with 45 beads. What is a reasonable estimate of the number of beads in 5 necklaces?
   A. 50
   B. 545
   C. 250
   D. 450

3. Alyse earns $15 each week for allowance. She saved her allowance for 8 weeks. Then she spent $78. How much money did she have left?

4. Josie makes $267 per week on her paper route. Lila makes $185 per week on her paper route. How much more does Josie make in 6 weeks?

Math Assessment

Performance Check

4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Name _____ Date _____

1. Sara and Marcus went to shows at 2 different theaters on Saturday. Sara went to the Camelot Theater and Marcus went to the Cinema Theater.

   * The Camelot Theater had 5 shows and 23 people attended each show.
   * The Cinema Theater has 3 shows and 58 people attended each show.

   What is the difference between the number of people who attended shows at the Cinema and Camelot. Explain how you got your answer using numbers, pictures, or words.

2. The fourth grade is going on a hay ride. There are 22 students, 8 teachers, and 7 parents going on the hay ride. If each hay cart holds 8 people, how many hay carts will they need for everyone to go on the hay ride? Explain how you got your answer using numbers, pictures, or words.

Math Assessment

Skills Check

4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Name _____ Date _____

1. List all the factor pairs for the number 24.	2. List the first six multiples of 7.
3. Is 23 a prime or composite number? Explain your answer using numbers, pictures, or words.	4. Is 72 a prime or composite number? Explain your answer using numbers, pictures, or words.

Math Assessment

Performance Check

4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Name _____ Date _____

1. Ali and Devon made cookies for a school bake sale. Ali sold her cookies in bags with 3 cookies per bag. Devon sold his cookies in bags with 4 cookies per bag. They both sold less than 35 cookies. Make a list of all the possible amounts of cookies they each sold. Explain how you got your answer using numbers, pictures, or words.

2. Juanita's mother's age is a composite number between 40 and 50. Her father's age is a prime number between 40 and 50. Make a list of the possible ages of her mother and then make another list of all the possible ages of her father. Explain how you got your answer using numbers, pictures, or words.

Math Assessment

Skills Check

4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Name _____ Date _____

1. What is the rule for this pattern?

8, 16, 24, 32, 40, ___?___

Rule _____

_____

_____

_____

What number comes next?

_____

2.

m	n
3	27
4	36
6	54
8	72
9	?

What number completes the table?

_____

Write an equation to describe the rule for this table?

_____

3.

How many stars will be in figure 5?

4. What is the rule for this pattern?

2, 6, 4, 12, 10, ___?___

Rule _____

_____

_____

_____

What number comes next?

_____

Math Assessment

Performance Check

4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Name _____ Date _____

1. Maggie's brother hired her to walk his dog for 7 days. On the first day he paid her $1. He doubled the amount of money he paid her each day. How much did he pay her on the 7th day? Explain how you got your answer using numbers, a table, pictures, or words.

2. Terrance made the following shape pattern. Fill in the shapes to complete the pattern.

What is the rule for this pattern?

_____

_____

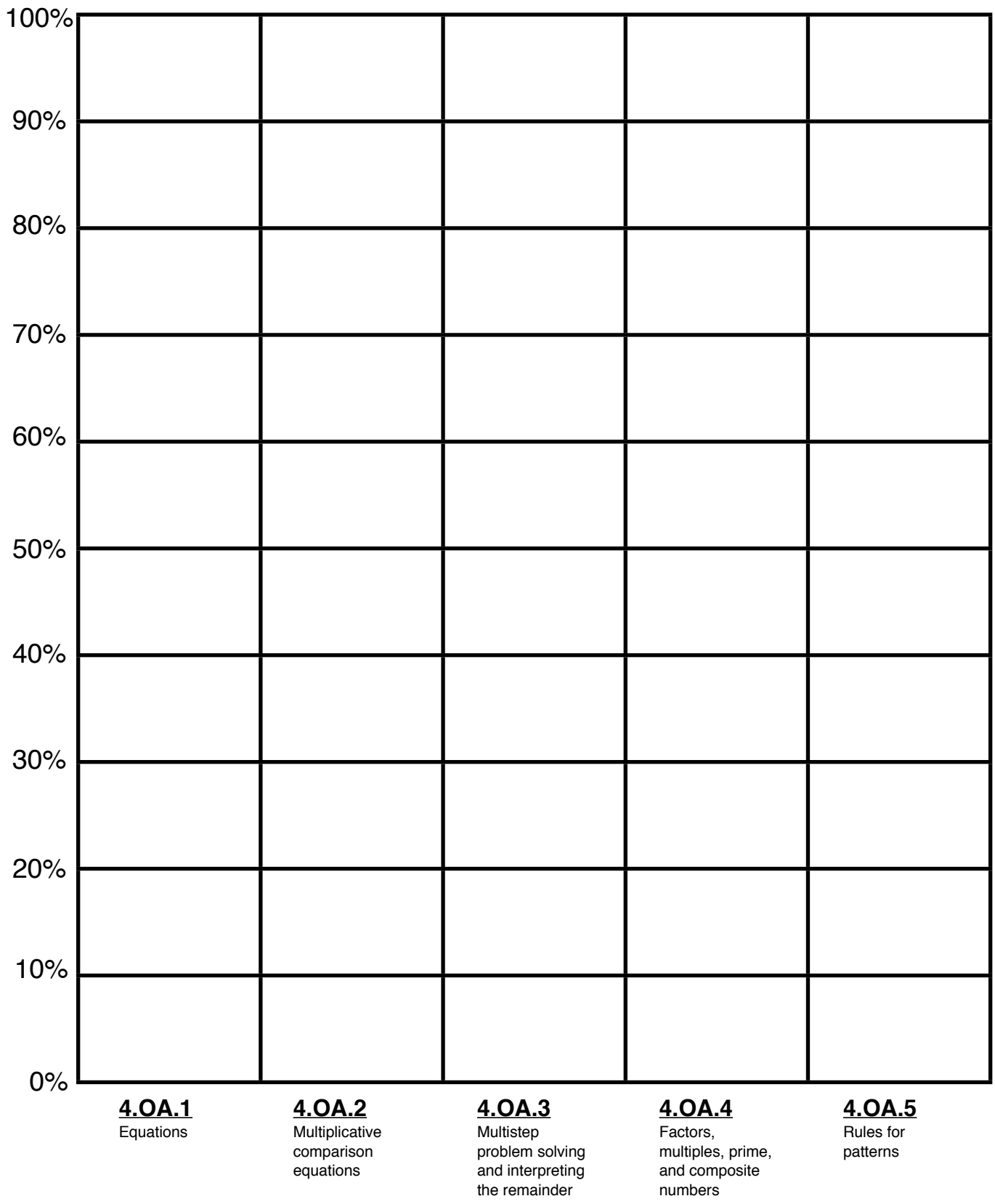
_____

_____

Standards Achievement Graph

Operations & Algebraic Thinking

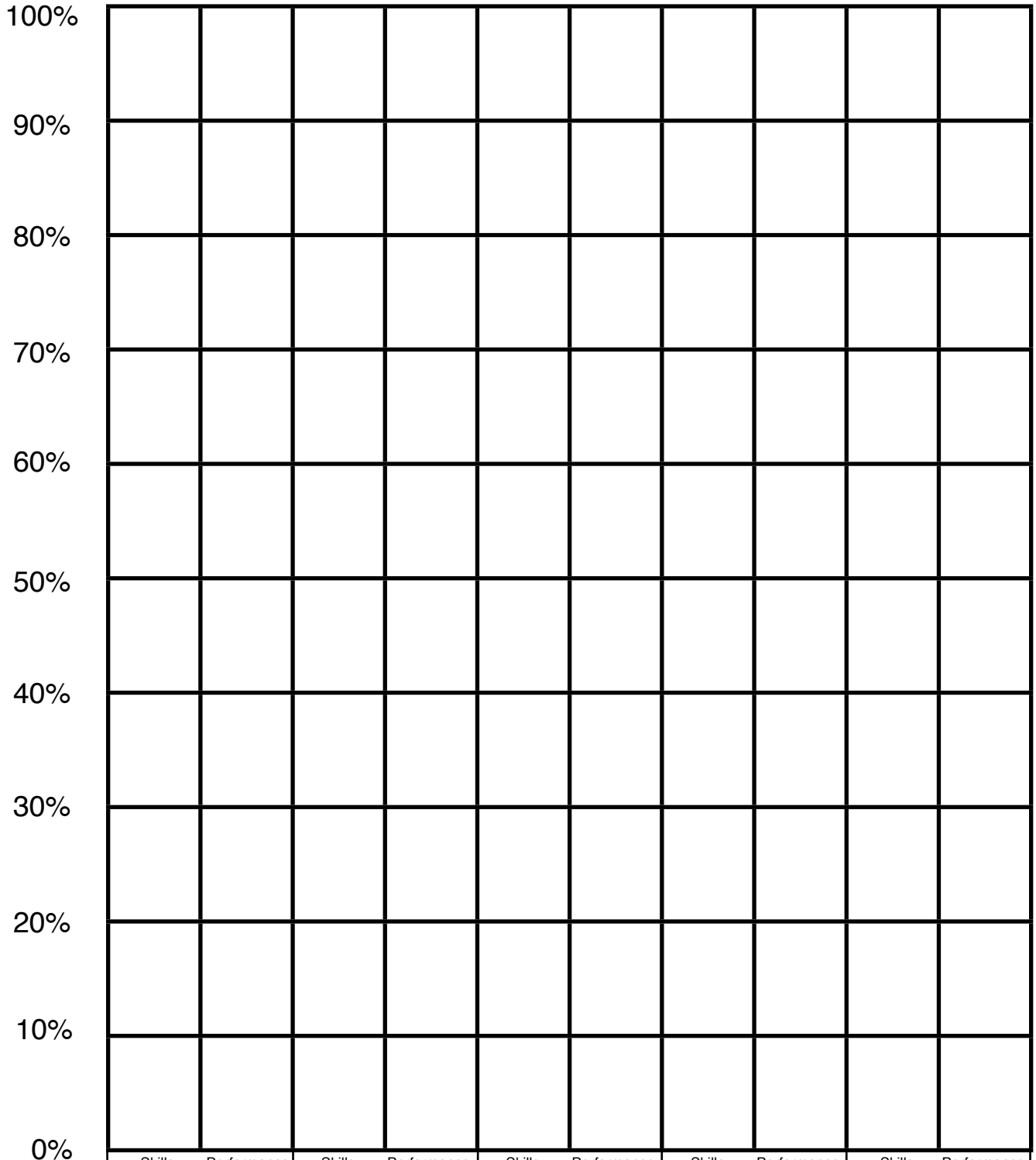
Name _____



Standards Achievement Graph

Operations & Algebraic Thinking

Name _____



Standards Achievement Chart
Operations & Algebraic Thinking

Name _____

Standard	Score
4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	
4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	

Notes_____

Standards Achievement Chart
Operations & Algebraic Thinking

Name _____

Standard	Skills Score	Performance Score
4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.		
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.		
4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.		
4.OA.4 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.		
4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.		

Notes_____

Class Achievement Chart

Operations & Algebraic Thinking

Student Name	4.OA.1	4.OA.2	4.OA.3	4.OA.4	4.OA.5
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

Operations and Algebraic Thinking Answer Key

4.OA.1 Skills Check

1. 4 x 8 = 32 or 8 x 4 = 32
2. 5 x 7 = 35 or 7 x 5 = 35
3. 42 = 7 x 6 or 42 = 6 x 7
4. Answers may vary

* **Example Answer**: 27 is 3 times as many as 9 and 9 times as many as 3.

4.OA.1 Performance Check

1. Sample answers

Comparison Statement	Equation
36 inches is 3 times longer than 12 inches	3 x 12 = 36
40 seashells is 8 times as many as 5 seashells	8 x 5 = 40
42 minutes is 7 times as long as 6 minutes	6 x 7 = 42

Answers will vary. Sample answers are below.

Comparison Statement	Equation
16 pencils is 8 times as many as 2 pencils	2 x 8 = 16
36 stickers is 9 times as many as 4 stickers	9 x 4 = 36

2. Juan scored **2** times as many goals as Josh.

(SAMPLE ANSWERS)

Write an equation to show that relationship

_____2 x 8 = 16_____

Write an equation to show the relationship between the number of goals Ellen and Shea scored

_____4 x 5 = 20_____

Write a statement to describe that relationship

Shea scored 5 times as many goals as Ellen

4.OA.2 Skills Check

1. C
2. D
3. 56 ÷ 8 = 7 8 x 7 = 56
4. 9 x 7 = 63 7 x 9 = 63

4.OA.2 Performance Check

1. Amy has 4 goldfish. Mark has 6 times as many goldfish. How many goldfish does Mark have?

4 x 6 = 24

Amy has 4 goldfish. Mark has 6 goldfish. How many goldfish do they have altogether?

4 + 6 = 10

Compare and contrast the problems above. How are they alike? How are they different?

(Sample answer) The first problem requires you to multiply (multiplicative comparison) the second requires you to add (additive comparison)

2. (Sample answer) 30 ÷ 5 = 6 tomatoes. To solve the problem you have to divide the number of tomatoes in Morgan's garden by 5 to find the number of tomatoes in Mitch's garden.

4.OA.3 Skills Check

1. 6 complete songs (you have to drop the remainder because the question asks about complete songs)
2. C. 250
3. $15 x 8 = $120 - $78 = $42
4. $ 492

4.OA.3 Performance Check

1. 59 more people attended the show at the Cinema

Students need to explain that first they determined how many people attended the shows in all

5 x 23 = 115

3 x 58 = 174

Then they need to find the difference

174 - 115 = 59

2. 5 carts are needed

The explanation should reflect the steps below. The student may draw a picture or make a table to show how people will be split in the carts.

Students first need to determine the total number of people going on the hay ride 22 + 8 + 7 = 37 people. Next the student needs to divide this by 8 because 8 people fit in a cart. This equals 4 R5. The student needs to interpret the remainder and realize they need to round up so they need 5 carts.

4.OA.4 Skills Check

1. 1 and 24, 2 and 12, 3 and 8, 4 and 6
2. 7, 14, 21, 28, 35, 42
3. Prime - The only whole factors are 1 and 23
4. Composite - it has many factors 1 and 72, 2 and 36, 3 and 24, 4 and 18, 6 and 12, 8 and 9

Operations and Algebraic Thinking Answer Key

4.OA.4 Performance Check

1. (Sample Answers)
Ali could have sold 3, 6, 9, 12, 15, 21, 24, 27,30 or 33 cookies because all of those numbers are multiples of 3 and she sold cookies in bags of 3
Devon could have sold 4, 8, 12, 16, 20, 24, 28, or 32 cookies because those numbers are all multiples of 4 and he sold cookies in bags of 4
2. Her mother's age could be 41, 43, or 47
Her father's age could be 42, 44, 45, 46, 48, or 49

4.OA.5 Skills Check

1. 48 the rule is add 8 or list the multiples of 8
2. 81; m x 9 = n
3. 15 stars
4. the rule is x 3 - 2
the next number is 30

4.OA.5 Performance Check

1. $64

Day	Pay
Day 1	$1
Day 2	$2
Day 3	$4
Day 4	$8
Day 5	$16
Day 6	$32
Day 7	$64

Students may make a table, draw a picture or explain in various ways.

2.

s + 1 is the formula

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http://www.teacherspayteachers.com/Product/4th-Grade-Common-Core-Math-Vocabulary

4th Grade Common Core ELA Ultimate Vocabulary Resource

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4th Grade Common Core Review Game

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Fundamental Geometry Games

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