

Mathematics

WARM-UPS

Grade 7



Table of Contents

Introduction *v*

About the CD-ROM *vi*

Standards Correlations *vii*

Unit 1: Operations with Rational Numbers 1

Unit 2: Expressions and Equations..... 14

Unit 3: Ratios and Proportional Relationships..... 18

Unit 4: Inferences 29

Unit 5: Geometry 32

Unit 6: Probability 48

Answer Key 55

Introduction

Mathematics Warm-Ups for Common Core Georgia Performance Standards, Grade 7 is organized into six units of CCGPS mathematics for Grade 7. Each warm-up addresses at least one of the standards within the following units:

- Unit 1: Operations with Rational Numbers
- Unit 2: Expressions and Equations
- Unit 3: Ratios and Proportional Relationships
- Unit 4: Inferences
- Unit 5: Geometry
- Unit 6: Probability

The Common Core Mathematical Practices standards are another focus of the warm-ups. All of the problems require students to “make sense of problems and persevere in solving them,” “reason abstractly and quantitatively,” and “attend to precision.” Students must “look for and make use of structure” when finding inputs and outputs in a function machine. Students have opportunities to “use appropriate tools strategically” when they use 10×10 grids to examine fractions and decimals or coin tosses to explore sample area and probability. A full description of these standards can be found at <http://www.walch.com/CCSS/00006>.

The warm-ups are organized by corresponding grade units rather than by level of difficulty. Use your judgment to select appropriate problems for your curriculum.* The problems are not necessarily meant to be completed in consecutive order—some are stand-alone, some can launch a topic, some can be used as journal prompts, and some refresh students’ skills and concepts. All are meant to enhance and complement your Grade 7 mathematics program. They do so by providing resources for those short, 5- to 15-minute interims when class time might otherwise go unused.

* You may select warm-ups based on particular standards using the Standards Correlations table.

About the CD-ROM

Mathematics Warm-Ups for Common Core Georgia Performance Standards, Grade 7 is provided in two convenient formats: an easy-to-use reproducible book and a ready-to-print PDF on a companion CD-ROM. You can photocopy or print activities as needed, or project them on a screen via your computer.

The depth and breadth of the collection give you the opportunity to choose specific skills and concepts that correspond to your curriculum and instruction. Use the table of contents and the standards correlations to help you select appropriate tasks.

Suggestions for use:

- Choose an activity to project or print out and assign.
- Select a series of activities. Print the selection to create practice packets for learners who need help with specific skills or concepts.

Standards Correlations

Mathematics Warm-Ups for Common Core Georgia Performance Standards, Grade 7 is correlated to six units of CCGPS Grade 7 mathematics. The page numbers, titles, and standard numbers are included in the table that follows. The full text of the CCGPS mathematics standards for Grade 7 can be found in the curriculum map at <http://www.walch.com/CCGPS/00002>.

Page number	Title	CCGPS addressed
Unit 1: Operations with Rational Numbers		
1	Chip-Board Integers I	MCC7.NS.1c
2	Working with Integers I	MCC7.NS.1d
3	Working with Integers II	MCC7.NS.1d
4	Chip-Board Integers II	MCC7.NS.1d
5	Chip-Board Integers III	MCC7.NS.1d
6	Integer Practice	MCC7.NS.1d
7	Make a True Sentence	MCC7.NS.1d, MCC7.NS.2c
8	10 × 10 Grids	MCC7.NS.2d
9	It's Completely Rational	MCC7.NS.3
10	Four 4s	MCC7.NS.3
11	Numbering Pages	MCC7.NS.3
12	A Circle of Students	MCC7.NS.3
13	Compressing Trash	MCC7.NS.3
Unit 2: Expressions and Equations		
14	Perimeter Problem	MCC7.EE.1
15	Thinking Around the Box	MCC7.EE.1
16	Simplifying Expressions	MCC7.EE.1
17	Guess-and-Check	MCC7.EE.4

(continued)

NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS

CCGPS MCC7.NS.1c

Chip-Board Integers I

Explain how you might show the operation $(-6) - (-12) = ?$ on a chip board or a series of chip boards such as the ones pictured below. Draw black circles, or chips, to represent negative values. Draw white circles, or chips, to represent positive values. A black chip and a white chip together represent zero.

Chip board 1



Chip board 2



Chip board 3



NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS
CCGPS MCC7.NS.1d

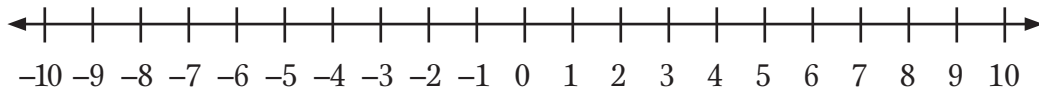
Working with Integers I

Using appropriate arrow notations on number lines such as the one pictured below, represent the expressions given and find the results. Use a new number line for each sentence.

1. $-8 + 12 = ?$

2. $(-7) + (-3) = ?$

3. $5 + (-9) = ?$



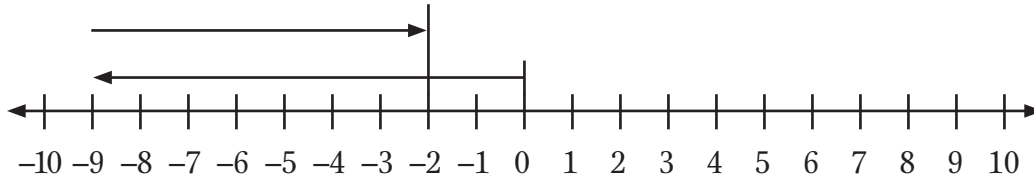
NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS
CCGPS MCC7.NS.1d

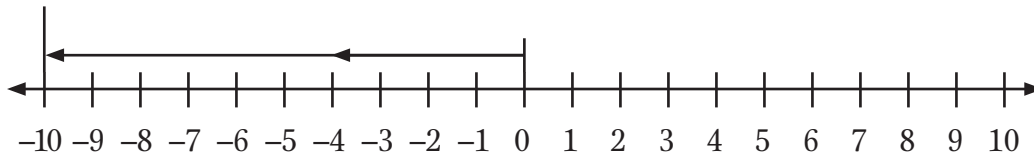
Working with Integers II

Look at each diagram below. Write a true sentence showing the integer calculations pictured.

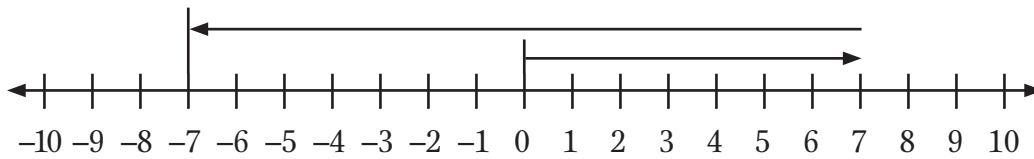
1.



2.



3.



NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS
CCGPS MCC7.NS.1d

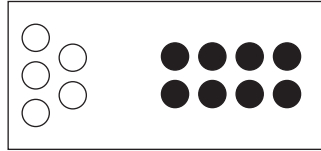
Chip-Board Integers II

Andrew and Brittany are exploring integers by drawing representations using black and white circular chips. The white chips represent positive numbers. The black chips represent negative numbers. Write a number sentence to symbolize each set of chip boards that they have drawn.

1. Chip board 1



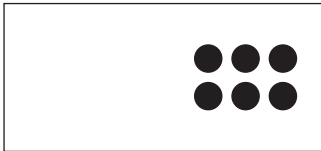
Chip board 2



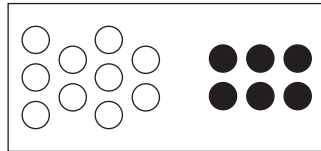
Chip board 3



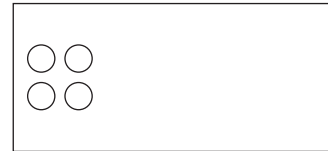
2. Chip board 1



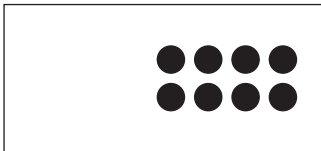
Chip board 2



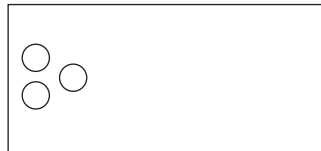
Chip board 3



3. Chip board 1



Chip board 2



Chip board 3



NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS
CCGPS MCC7.NS.1d

Chip-Board Integers III

Diagram and solve the following integer operations. Use chip boards such as the ones pictured below. Use black circles, or chips, to represent negative values. Use white circles, or chips, to represent positive values. Use a series of two or three chip boards for each sentence.

1. $(-5) + (9) = ?$

2. $12 + (-7) = ?$

3. $(-8) - (-5) = ?$

Chip board 1



Chip board 2



Chip board 3



NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS
CCGPS MCC7.NS.1d

Integer Practice

Find the missing value in each sentence below.

1. $(-6) + (-12) = ?$

2. $25 - (-8) = ?$

3. $? + 17 = (-4)$

4. $11 + ? = 6$

5. $\frac{3}{4} - ? = 1$

6. $(-7) + ? = 0$

7. $2\frac{1}{2} + ? = \frac{1}{2}$

8. $? - (-5) = 0$

9. $-3.5 - \frac{7}{2} = ?$

10. $(-5.6) - ? = (-3.4)$

11. $? + 7\frac{2}{5} = 3\frac{3}{5}$

12. $-\frac{87}{10} + ? = 10$

NAME: _____

UNIT 1 • OPERATIONS WITH RATIONAL NUMBERS

CCGPS MCC7.NS.1d, MCC7.NS.2c

Make a True Sentence

For the sentence below, insert mathematical symbols of any kind to make the sentence true. It is possible to make 2- or 3-digit numbers by not inserting any symbols between the numbers (for instance, by putting 5 and 6 together to make 56).

$$1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 9 = 100$$