# Teacher's Resource Masters

## ACCELERATED GRADE 7 VOLUME 1

### Topics 1–6

Home-School Connection Letters
Pick a Project
**enVision®** STEM Project
Reteach to Build Understanding
Additional Vocabulary Support
Build Mathematical Literacy
Enrichment

# enVision® Mathematics

SAVVAS

# Grade 7 Accelerated
## Volume 1: Topics 1–6

# Topic 5  Generate Equivalent Expressions

# Topic 6  Solve Problems Using Equations and Inequalities

Name _____

# Rational Number Operations

Dear Family,

   Your child is learning to add, subtract, multiply, and divide integers and rational numbers. The focus is on understanding positive and negative numbers and how the signs of the numbers affect their sums, differences, products, and quotients. He or she will use a variety of methods and tools, including number lines, absolute value, and inverse operations, to develop an understanding of these operations.
   Here is an activity you can do with your child to help him or her develop fluency with integers.

**What's the Sum?**

**Materials:** 21 index cards or small pieces of paper numbered with the integers from $-10$ to $10$ (one integer per card)

**Step 1**  Player 1 shuffles the cards and gives two cards to Player 2.

**Step 2**  Player 2 adds the numbers on his or her cards and explains how the signs of the numbers affect the sum. For example, $3 + (-7) = -4$.

**Step 3**  Player 2 returns the cards to the stack. Trade roles and play again.

*Alternate Gameplay: Subtract, multiply, or divide the integers.*

## Observe Your Child

**Focus on Mathematical Practices**
Reason abstractly and quantitatively.

Help your child become proficient with this Mathematical Practice. Ask your child to suggest a real-world context for each sum in the game. If he or she has difficulty coming up with a context, you might discuss saving and spending money or changes in temperature or elevation.

Name _____

# How Cold Is Too Cold?

## Packing for the Cold

**How do you survive in the coldest places on Earth?**
**What equipment and clothing do you need to pack?**
**If you struggle with your research, try the following phrases to get you started.**

- Extreme cold weather clothing
- Extreme cold survival
- Cold weather survival gear list

| | |
|---|---|
| **Part A** | Describe the coldest temperatures humans can survive. Explain the factors most important in determining human survival in extremely cold temperatures. |
| **Part B** | Describe the important strategies when dressing for the extreme cold. Plan an ideal head to toe outfit to survive extreme cold weather. |
| **Part C** | Research what survival gear you might need in extremely cold conditions. Make a packing list of the gear you should have with you. |

Name _____

Two numbers that are the same distance from 0 on a number line, but in opposite directions, are called opposites. The whole numbers and their opposites make up the set of integers.

Opposites combine to make 0. For example, 3 and −3 are opposites.
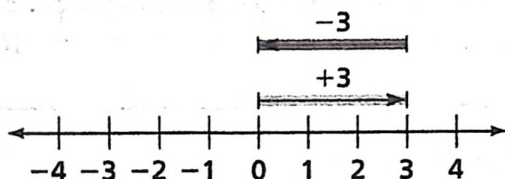


Jacob has saved $50. He spends $15 at the movies. Then, after paying for repairs to his bike, he has $0 remaining. How much did the bike repairs cost?

1. What integer represents Jacob's savings?


2. What integer represents the change in Jacob's savings after he spends money at the movies?


3. The number line represents the change in Jacob's savings after the movies. Use the number line to show Jacob's change in savings after the bike repairs.
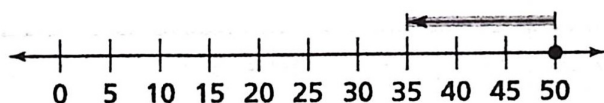


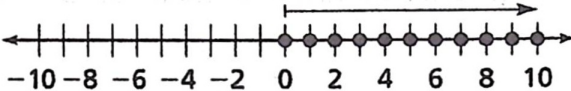4. What integer represents the change in Jacob's savings due to the bike repairs? What integer represents the cost of the bike repairs?


## On the Back!

5. On a winter's morning, the temperature was 0°F. The temperature increased during the daytime. At night, the temperature decreased 6°F and returned to 0°F. What integer represents the temperature change during the daytime? Represent the situation using a number line.

Name _____

**Complete the vocabulary chart.**

| Word or Phrase | Definition | Picture or Example |
|---|---|---|
| whole numbers | the counting numbers, plus zero | 0, 1, 2, 3, 4, … <br><br> $-10\ -8\ -6\ -4\ -2\ \ 0\ \ 2\ \ 4\ \ 6\ \ 8\ \ 10$ |
| positive numbers | | $4, 1\frac{1}{2}, 15$ |
| negative numbers | all numbers less than zero; numbers to the left of zero on a number line | |
| | the set of positive whole numbers, their opposites, and zero | |
| | the distance from zero on the number line | $\lvert-3\rvert = 3 \qquad \lvert 5\rvert = 5$ |
| opposite integers | | |

Name _____

**Read the problem below. Answer the questions to help you understand how to use the number line to solve the problem.**

An apartment building has a parking lot with 12 parking spaces for tenants. At 6 A.M., all 12 spaces were full. At 8 A.M., the number of cars in the lot had decreased by 4. By 9 A.M., there were no cars left in the lot. Use the number line to show each change in the number of cars in the parking lot. What integer represents the change in the number of cars between 8 A.M. and 9 A.M.?

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←——+——+——+——+——+——+——+——+——+——+——+——+——+——+——→
   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14
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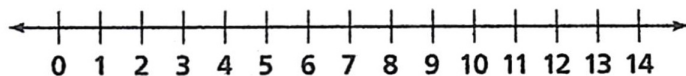
1. Underline the information related to the quantities of cars.

2. What integer is represented by the phrase "decreased by 4"?

3. To represent this situation on the number line, where would you start? Explain.

4. Once all of the changes in the number of cars are shown on the number line, where will the last arrow end? Explain.

5. Why are there no negative numbers on the number line?

6. Will you use a positive or a negative integer to represent the change in the number of cars between 8 A.M. and 9 A.M.? Explain.