

Name: _____

6th Grade CCA Unit #1: Integers

Resources: Big Ideas Chapter 1

Common Core Standards: 7.NS.1a-d; 7.NS.2a-d; 7.NS.3

Main Focus: Operations with Integers

Number	Learning Targets	Big Ideas Section
1	I can define absolute value and solve problems using absolute value.	1.1
2	I can add integers with same and different signs.	1.2
3	I can subtract integers by using the additive inverse.	1.3
4	I can multiply integers with same and different signs.	1.4
5	I can divide integers with same and different signs and evaluate expressions.	1.5

My Practice:

Number	Pre-test:	Exit slip scores	Day #2 Homework	Extra Targeted Practice	Post-test:
1	_____/4				_____/6
2	_____/4				_____/6
3	_____/5				_____/7
4	_____/5				_____/7
5	_____/5				_____/8

My Final Pretest Score: _____ /23

My Final Pretest Percent _____ %

My Final Posttest Score: _____ /36

My Final Posttest Percent: _____ %

My percent of increase between the Pre and Post test scores = _____ !!

My Academic Goal

My Goal is : _____

I will achieve my goal by : _____

To achieve my goal I will:

1) _____

2) _____

3) _____

4) _____

Potential Roadblocks to meeting my goal are:

1) _____

2) _____

3) _____

Strategies to overcome the roadblocks are:

1) _____

2) _____

3) _____

My goal is realistic and challenging and because

Section 1.1: Integers and Absolute Value Notes

POD: Fill in the blank with $<$, $>$, $=$ to make the statement correct.

1.) -7 _____ -4

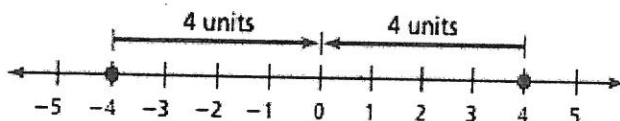
2.) 5 _____ -5

3.) -8 _____ -9

Objective: Students will be able to define absolute value and solve problems using absolute value.

Vocabulary:

Absolute Value: The distance between the number and zero on a number line. The absolute value of a is written as $|a|$



Example:

Find the Absolute Value

1.)	2.)	3.)
4.)	5.)	6.)

Order from least to greatest

7.)
8.)

9.) You and your friend are swimming against the current. You move forward 20 feet. Your friend is not a strong swimmer, so he moves back 9 feet. Write each amount as an integer.

Section 1.1: Integers and Absolute Value Homework Day 1

Compare. Use $>$, $<$, or $=$ to complete each statement.

1.) -8 _____ 8	2.) $ -5 $ _____ 5	3.) -8 _____ -10	4.) -1 _____ 3
5.) $- -2 $ _____ -2	6.) $ -4 $ _____ 0	7.) -11 _____ -15	8.) $- -6 $ _____ -5

Find each absolute value

9.) $ -3 $	10.) $ 1 $	11.) $- -2 $	12.) $- 3 $
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Write an integer to represent each situation.

13.) a gain of 5 yards	14.) a debt of \$5	15.) 135 ft. below sea level
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16.) In words, describe a real-life situation where positive numbers are used. Provide an example.

17.) In words, describe a real-life situation where negative numbers are used. Provide an example.

18.) How far is 7 away from 0? How far is -7 away from 0? What is the mathematical term used to describe this distance?

1.1 Integers and Absolute Value Homework Day 2

Find the absolute value.

1. $|-7|$

2. $|12|$

3. $|-13|$

4. $|0|$

Copy and complete the statement using $<$, $>$, or $=$.

5. $|-4|$? 2

6. 7 ? $|-7|$

7. $|8|$? 5

8. While playing a game, you move back 5 spaces with your roll of the number cube. Your friend moves forward 3 spaces. Write each amount as an integer.

Order the values from least to greatest.

9. $-1, |5|, |4|, 8, |-1|$

10. $|-7|, 0, |5|, 6, -|3|$

Simplify the expression.

11. $|-19|$

12. $-|-8|$

13. $-|13|$

14. The boiling point of a liquid is the temperature at which the vapor pressure of the liquid equals the environmental pressure surrounding the liquid.

Substance	Hydrogen	Oxygen	Iodine	Phosphorus
Boiling Point ($^{\circ}\text{C}$)	-253	-183	184	280

- a. Which substance in the table has the highest boiling point?
- b. Is the boiling point of oxygen or iodine closer to 0°C ?
15. Write an integer whose absolute value is greater than itself.
16. There is one integer for which there does not exist another integer with the same absolute value. What is that integer?

Section 1.2: Adding Integers Notes

POD: Simplify

1.) $-|-3|$

2.) opposite of $|5|$

3.) $|4|$

Objective: Students will be able to add integers with same and different signs.

Rules for adding integers with the SAME sign:

1. Add their absolute values.
2. Give your answer the SAME sign as your integers.

1.)	2.)
3.)	4.)

Rules for adding integers with DIFFERENT signs:

1. Subtract their absolute values (biggest - smallest).
2. Give your answer the sign of the number with the greater absolute value.

5.)	6.)
7.)	8.)

9.) The list shows four bank account transactions in July. Find the change (c) in the account balance.

JULY TRANSACTIONS	
Deposit	\$50
Withdrawal	-\$40
Deposit	\$75
Withdrawal	-\$50

1.2 Adding Integers Homework Day 1

Add. Do not use a calculator.

1. $-9 + 2$

2. $5 + (-5)$

3. $-12 + (-6)$

4. $-5 + 10$

5. $-8 + 7$

6. $-6 + -4$

7. $-10 + 19 + 5$

8. $-11 + -2 + 9$

9. $-7 + 7 + (-8)$

10. The table shows the change in your hair length over a year.

Month	January	February	August	September	December
Change in hair length (inches)	3	-1	3	-4	3
Fill in the chart:	Jan + Feb =		J + F + A =	J + F + A + S =	J + F + A + S + D

a. What is the total change in your hair length at the end of the year? (The answer you wrote for December)

b. Is your hair longer in January or December? Explain your reasoning.

c. When is your hair the longest? Explain your reasoning.

1.2 Adding Integers Homework Day 2**Add. Do not use a calculator.**

1. $-5 + (-3)$

2. $-9 + (-3)$

3. $6 + (-6)$

4. $4 + (-4)$

5. $5 + (-2)$

6. $7 + (-13)$

7. $-18 + 1$

8. $-12 + (-5)$

9. $12 + (-15)$

10. Your bank account has a balance of $-\$21$. You deposit $\$50$. What is your new balance?

11. The elevation of your plot of land is 2 feet below sea level. You add 7 feet of dirt to your land. What is the new elevation of your land?

12. Write three integers that do not all have the same sign that have a sum of 10.

Add.

13. $7 + 5 + (-2)$

14. $-13 + 7 + (-3)$

15. $17 + (-5) + (-1)$

16. In golf, a golfer must have a score of 0 in order to be at par. A golfer scores 2 above par on the first hole, 1 below par on the second hole, and 2 below par on the third hole. Which expression can be used to decide whether the golfer is at par after the first three holes?

$$\boxed{(-2) + 1 + 2}$$

$$\boxed{2 + (-1) + 2}$$

$$\boxed{2 + (-1) + (-2)}$$

Section 1.3: Subtracting Integers Notes

POD:

1. $|-5| + 7 =$

2. $-6 + 10 =$

3. $8 + (-9) =$

Objective: Students will be able to subtract integers by using the additive inverse

Rules for subtracting integers:

1. Subtracting an integer is the SAME as adding its opposite "CHANGE, CHANGE".
2. Use adding integer rules.

Examples:

1.)	2.)	3.)
4.)	5.)	6.)

Word Problem Example:

7.) The highest and lowest temperatures ever recorded in Africa are 136°F and -11°F . Find the difference between these records.

Challenge Questions: (No calculator!)

$-4 - 3 - (-2)$

1.3 Subtracting Integers Homework Day 1**Subtract. Do not use a calculator.**

1. $3 - 8$

2. $6 - (-7)$

3. $-10 - 9$

4. $-5 - (-4)$

5. $-2 - 7$

6. $5 - 11$

7. $11 - (-2) + 14$

8. $-16 - (-12) + (-8)$

9. $6 - 17 - 4$

10. You begin a hike in Death Valley, California, at an elevation of -86 meters. You hike to a point of elevation at 45 meters. What is your change in elevation?
11. You sell T-shirts for a fundraiser. It costs \$112 to have the T-shirts made. You make \$98 in sales. What is your profit?

1.3 Subtracting Integers Homework Day 2**Subtract. Do not use a calculator.**

1. $2 - 8$

2. $4 - (-5)$

3. $-6 - 4$

4. $10 - (-9)$

5. $-15 - 7$

6. $-6 - (-14)$

7. $-1 - (-3)$

8. $15 - (-7)$

9. $20 - (-10)$

10. You are scuba diving at -8 feet. You dive 5 feet deeper. What is your position in the water?

11. A dolphin is at -28 feet. It swims up and jumps out of the water to a height of 8 feet. Write a subtraction expression for the vertical distance the dolphin travels.

12. Write $7 - 3$ using addition.

13. Write $5 + (-3)$ using subtraction.

Solve.

14. $-14 - 6 - (-2)$

15. $-11 - (-8) - (-3)$

16. $7 - 12 - (-4)$

Section 1.4 Multiplying Integers Notes

POD:

1.) $-10 - (-7)$

2.) $-8 + 12$

Objective: Students will be able to multiply integers with same and different signs.

Rules for Multiplying integers:

<u>Same Signs</u>	<u>Different Signs</u>
$+ \cdot + = +$	$+ \cdot - = -$
$- \cdot - = +$	$- \cdot + = -$
Answer is POSITIVE	Answer is NEGATIVE

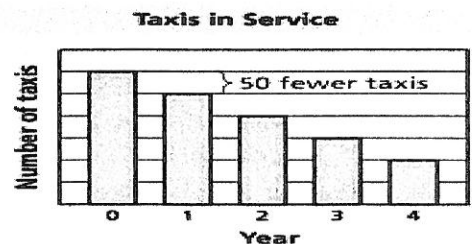
Examples: State whether the product or quotient is positive or negative. Then solve.

1.)	2.)
3.)	4.)

Exponents:

5.)	6.)
7.)	8.)

9.) The bar graph shows the number of taxis a company has in service. The number of taxis decreases by the same amount each year for four years. Find the total change in the number of taxis.



1.4**Multiplying Integers Homework Day 1****Multiply.**

1. $8 \cdot 9$

2. $7(-7)$

3. $-10 \cdot 4$

4. $-5(-6)$

5. $12 \cdot (-1) \cdot (-2)$

6. $-10(-3)(-7)$

7. $-20 \cdot 0 \cdot (-4)$

8. $-4 \cdot 5 \cdot -2$

Evaluate the expression.

9. $(-4)^2$

10. -3^2

11. $2 \cdot (-5)^2$

12. $(-2)^3 \cdot 4$

13. You lose 5 points for every wrong answer in a trivia game. What integer represents the change in your points after answering 8 questions wrong?

1.4 Multiplying Integers Homework Day 2

Multiply. Do not use a calculator.

1. $4 \cdot (-3)$

2. $-6 \cdot 5$

3. $-8(-2)$

4. $0 \cdot (-7)$

5. $-10(-3)$

6. $5(-5)$

7. $2 \cdot (-3) \cdot 5$

8. $-5(-4)(-1)$

9. $2 \cdot -3 \cdot 6$

10. A water tank leaks 5 gallons of water each day. What integer represents the change in the number of gallons of water in the tank after 7 days?
11. The water in a pool evaporates at a rate of 16 gallons per week. What integer represents the change in the number of gallons of water in the pool after 4 weeks?

Evaluate the expression.

12. $(-3)^2$

13. -3^2

14. $(-2)^3$

15. -5^2

16. $-2 \cdot (-3)^2$

17. $(-4)^2 \cdot 2$

Section 1.5: Dividing Integers Notes

POD:

1.) -4^2

2.) $(-4)^2$

3.) $(-4)^3$

Objective: Students will be able to divide integers with and different signs and evaluate expressions.

Rules for Dividing integers:

<u>Same Signs</u>	<u>Different Signs</u>
$+ \cdot + = +$	$+ \cdot - = -$
$- \cdot - = +$	$- \cdot + = -$
Answer is POSITIVE	Answer is NEGATIVE

*The quotient of an integer and zero is zero. Division by zero is undefined.

Examples: State whether the product or quotient is positive or negative. Then solve.

1.)	2.)
3.)	4.)

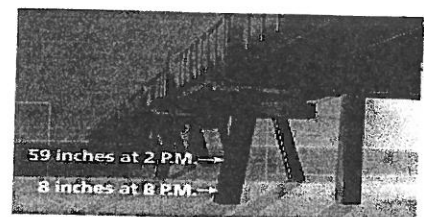
Evaluate the expression.

5.) $-4 - 10 \div -2$	6.) $-6 + 5 \cdot -2 + 4$
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Evaluate the expression when $a = -6$ and $b = -2$

7.)	8.)
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9.) You measure the height of the tide using the support beams of a pier. Your measurements are shown in the picture. What is the mean hourly change in the



1.5 Dividing Integers Homework Day 1

Divide, if possible. Do not use a calculator.

1. $3 \div (-1)$

2. $8 \div 2$

3. $-10 \div 5$

4. $-21 \div (-7)$

5. $\frac{48}{-6}$

6. $\frac{-13}{-13}$

7. $\frac{0}{3}$

8. $\frac{-55}{11}$

Evaluate the expression.

9. $-35 \div -5 + 6$

10. $-5 - 12 \div 3$

11. $-3 \cdot 5 + 30 \div -10$

12. The table shows the number of yards a football player runs in each quarter of a game. Find the mean number of yards the player runs per quarter.

Quarter	1	2	3	4
Yards	-2	14	-18	-6

1.5 Dividing Integers Homework Day 2

Divide, if possible. Do not use a calculator.

1. $8 \div (-4)$

2. $-15 \div (-3)$

3. $\frac{-10}{5}$

4. $0 \div (-7)$

5. $-35 \div 7$

6. $\frac{18}{-6}$

7. $-72 \div 9$

8. $-5 \div 5$

9. $\frac{15}{0}$

10. $12 \div (-2)$

11. $\frac{-24}{-8}$

12. $21 \div (-3)$

Find the mean of the integers.

13. 5, -7, 12, -10, 15

Evaluate the expression.

14. $6 - 12 \div (-3)$

15. $|-16| \div (-2)^2 - 4^2$

16. $\frac{-10 + (-2)^3}{-3}$

17. $-10 + 16 \div (-2) + 7$

18. An elevator is 180 feet above the first floor. Each second it descends 12 feet. What integer is the change in the height of the elevator each second?

Chapter 1 Homework Answers

Section 1.1 Homework Day 1 Answer Key:

1.) <	2.) =	3.) >	4.) <	5.) =	6.) >	7.) >	8.) <	9.) 3	10.) 1	11.) -2	12.) -3	13.) 5
14.) -5	15.) -135	16.) example: Driving; If you drive from Chicago to Detroit you will drive 336 miles										
17.) Example: A business owner needs money to open so he borrows from the bank 5,000. (He has - \$5000)												
18.) 7; 7; Absolute Value												

Section 1.1 Homework Day 2 Answer Key:

1.) 7	2.) 12	3.) 13	4.) 0	5.) >	6.) =	7.) >	8.) -5, 3	9.) -1, 1-11, 141, 151, 8	10.) -131, 0, 151, 6, 1-71		
11.) 19	12.) -8	13.) -13	14a.) Phosphorus	14b.) Oxygen	15.) example: 1-51	16.) 0					

Section 1.2 Homework Day 1 Answer Key:

1.) -7	2.) 0	3.) -18	4.) 5	5.) -1	6.) -10	7.) 14	8.) -4	9.) -8	10a.) 4 inches
10b.) December, it is 1 inch longer than it was						10c.) August; You are at 5 inches in August			

Section 1.2 Homework Day 2 Answer Key:

1.) -8	2.) -12	3.) 0	4.) 0	5.) 3	6.) -6	7.) -17	8.) -17	9.) -3	10.) \$29	11.) 5 ft
12.) Ex: 13 + -1 + -2		13.) 10	14.) 9	15.) 11	16.) 2 + (-1) + (-2)					

Section 1.3 Homework Day 1 Answer Key:

1.) -5	2.) 13	3.) -19	4.) -1	5.) -9	6.) -6	7.) 27	8.) -12	9.) -15	10.) 131 m	11.) - \$14
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Section 1.3 Homework Day 2 Answer Key:

1.) -6	2.) 9	3.) -10	4.) 19	5.) -22	6.) 8	7.) 2	8.) 22	9.) 30	10.) -13 ft	11.) -28 - 8
12.) 7 + -3		13.) 5 - 3	14.) -18	15.) 0	16.) -1					

Section 1.4 Homework Day 1 Answer Key:

1.) 72	2.) -49	3.) -40	4.) 30	5.) 24	6.) -210	7.) 0	8.) 40	9.) 16	10.) -9	11.) 50	12.) -32
13.) -40 points											

Section 1.4 Homework Day 2 Answer Key:

1.) -12	2.) -30	3.) 16	4.) 0	5.) 30	6.) -25	7.) -30	8.) -20	9.) -36	10.) -35 gal	11.) -64 gal
12.) 9	13.) -9	14.) -8	15.) -25	16.) -18	17.) 32					

Section 1.5 Homework Day 1 Answer Key:

1.) -3	2.) 4	3.) -2	4.) 3	5.) -8	6.) 1	7.) 0	8.) -5	9.) 13	10.) -9	11.) -18	12.) -3 yards
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Section 1.5 Homework Day 2 Answer Key:

1.) -2	2.) 5	3.) -2	4.) 0	5.) -5	6.) -3	7.) -8	8.) -1	9.) Undefined	10.) -6	11.) 3	12.) -7
13.) 3	14.) 10	15.) -12	16.) 6	17.) -11	18.) -15 ft						