Comparing Integers Assignment

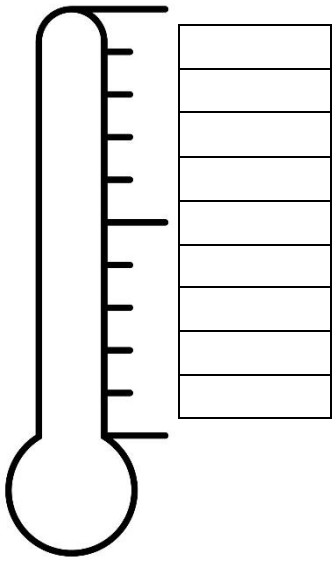
You have learned about integers, absolute value, and comparing these kinds of numbers using inequality symbols. These definitions are reviewed in the table below.

Integers	*Absolute Value*	*Inequality Symbols*
The positive and negative numbers that do not have fractional parts. The integers also include the number 0.	A number's distance from 0 on a number line. The symbol $\lvert \quad \rvert$ represents absolute value.	*Greater Than:* $>$ *Less Than:* $<$ *Greater Than or Equal to:* $\geq$ *Less Than or Equal to:* $\leq$

Integers are all around you — in temperature readings, golf scores, banking, video games, elevation in relation to sea level, and more! You can represent integers and absolute value on both horizontal and vertical number lines. You can also use number lines to make comparisons among these values. Remember that the further a number is to the right on a horizontal number line, the larger it is.

Use what you know about number lines, integers, absolute value, and comparisons to complete the activities that follow.

1. The image below represents an outdoor thermometer. Label the hashmarks along the right side of the thermometer using the integers from -4 to 4. Include the integer 0. Then say where on the thermometer you can find the negative numbers.



2. Kamron went to his bank and withdrew (deducted) $10 from his savings account. Represent the amount of money Kamron withdrew by plotting the value on a horizontal number line.

3. Daniela deposited (added) $5 into her saving account. Represent the amount of money Daniela deposited by plotting the value on a horizontal number line.

4. Write "the absolute value of -19" using mathematical notation.

5. Translate $|8|$ into words.

6. Simplify $|54|$.

7. Simplify $|-35|$.

8. A scuba diver descended 75 feet below sea level. Express this scenario using an integer and absolute value. What does this value represent?

9. Can two different integers have the same absolute value? Explain.

10. In both golf and mini golf, the player with the lowest score at the end of the game is the winner. Four friends, Musa, Janae, Peyton, and Caiden, went mini golfing. Their final scores are shown in the table. Order these scores from smallest to largest, and then state who won.
Hint: You may want to use a number line to help you answer this question.

Player	*Score*
Musa	0
Janae	4
Peyton	-3
Caiden	-2

11. Look again at the table in Question 10. Which player score has the largest absolute value?

12. Consider the inequality symbols < and >. Which symbol should be placed in the blank to make the statement 8 _____ 9 true?

13. Consider the inequality symbols < and >. Which symbol should be placed in the blank to make the statement -6 _____ -8 true?

14. Consider the inequality symbols < and >. Which symbol should be placed in the blank to make the statement $|-35|$____$|25|$ true?
Hint: Simplify each absolute value first.

15. Last week 100 fewer students than average attended the rugby game. This week 75 fewer students than average attended the rugby game. Write an inequality that compares the integers -75 and -100. Use either $\leq$ or $\geq$.

16. Cole and Kyler were hiking into the Shenandoah Mountains. Cole ascended 575 feet before stopping for a break. Kyler ascended 635 feet before stopping. Write an inequality using the absolute values of the heights of where each hiker was when he took his break. Use one of the $\geq$ or $\leq$ symbols.