Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 3 LESSON 7

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| AIM: | SWBAT compare rational numbers |

**THINK ABOUT IT!**

Sam has $10. He owes his friend Hank $2.50. He owes his sister $1.75. Consider the three rational numbers related to this story of Sam’s money. Using two different strategies, write and order the numbers from least to greatest.

Key Point

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| Mathematicians compare rational numbers using a number line and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

**Interaction with New Material**

**Ex. 1)** Kianna is a marine biologist and studies different kinds of sharks. While scuba-diving, Kianna recorded the depths at which she saw three of her favorite types of sharks.

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| Shark | Elevation |
| Hammerhead | 20 ½ feet below sea level |
| Great White | feet |
| Blue | 20.15 feet below sea level |

Order the elevation of each shark from deepest to shallowest.

**PARTNER PRACTICE**

* CFS for top quality work
  + Problem is annotated with margin notes to provide additional meaning
  + Comparison performed with a number line or absolute value
  + Answer statement is written
  + Work is organized and neat

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| *Bachelor Level* |

1. Order each set of numbers from least to greatest using a **number line.** 
   1. -0.4 and -0.35
   2. -1 ¾, 2 ½,

2) Ordering the following pair of numbers using **absolute value**: -5.14 and

3) Explain how you used a number line and absolute value to compare the numbers in #2.

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| *Master Level* |

4) There are three letters in Ms. Thomas’s mailbox: a bill from the phone company for $38.12, a bill from the electric company for $67.55, and a tax refund check for $25.89. (A bill is money that you owe someone and a tax refund check is money that you receive from someone). Which statements below are true? Select all that apply.

a) His electric bill is less than his phone bill because <

b) His electric bill is more than his phone bill because -67.55 is a greater debt than -38.12

c) His tax refund check is the only positive value

d) He owes more to the electric company than to the phone company

**INDEPENDENT PRACTICE**

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  + Answer statement is written
  + Work is organized and neat

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| *Bachelor Level* |

1) Compare -2.72 and -2.6 using a numberline.

2) Compare and using absolute value. Explain your answer.

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3) Which statement below is correct?

a) -0.25 < 2.8 <

b) < -0.25 < 2.8

c) -0.25 < < 2.8

d) 2.8 < -0.25 <

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| *Master Level* |

4) Jason is entering college and has opened a checking account, which he will use for college expenses. His parents gave him $200 to deposit into the account. Jason wrote a check for $85.99 to pay for his Calculus book and a check for $25.34 to pay for miscellaneous school supplies. Write the three rational numbers related to the balance in Jason’s checking account in order from greatest to least.

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5) On two consecutive plays, the AF Football team lost years. The first play, they moved the ball -5 ½ yards and on the second play they moved the ball -5 ¼ yards. On which play did they lose fewer yards?

6) Which inequality represents the comparison of the values of the two points plotted on the number line below? Select all that apply

-1

0

1. -0.45 > -0.2
2. -0.55 > -0.8
3. -0.55 < -0.8
4. -0.8 > -0.55
5. -0.8 < -0.55

7) Part A: Which value of *N* makes the inequality true?

Part B: What is a generalized rule you can form about N? N must always be \_\_\_\_\_\_

8) Patrice and Arnold went to the bank together and checked their account balances. Patrice’s balance was -550.75 and Arnold’s was -560.34. Who has a greater debt? Explain using the concept of absolute value.

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| *PhD Level* |

9) Alex keeps track of the temperatures in several cities throughout the United States.

* + Chicago, IL: On Monday, the temperature was -3°F. On Tuesday, the temperature increased 2 degrees.
  + Seattle, WA: On Monday, the temperature was 9°F. On Tuesday, the temperature decreased 9 degrees.
  + Boston, MA: On Monday, the temperature was -4.5°F. On Tuesday, the temperature increased 3 degrees.
  + Portland, ME: On Monday, the temperature was -5 ½°F. On Tuesday, the temperature increased 5 ¼ degrees.

Order the temperatures on Tuesday from coldest to warmest.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there. | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there. | You need more practice and feedback. |

1. Create a number line and plot -3¼ and -3¾. Compare them numbers using <, > or =.

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain how you determined your comparison using the number line:

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1. What one value that makes the following inequality true? \_\_\_\_\_\_\_ > -4 ½
2. Two submarines are below sea level. One submarine is at -50.35 meters and the second submarine is at -50.4 meters. Which submarine is closest to sea level? Explain your reasoning or use a model.

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