Compare and Order Integers

Lesson 9-3

Name: _____ Date: _____ Class: _____

Key Vocabulary Level 1 support

Picture first, then the word, then a plain-language meaning. Say each word out loud.

-3 < 2 because -3 is farther left on the number line than 2

Compare

To see if a number is bigger, smaller, or equal to another.

Least to greatest: -5, -2, 0, 3, 7 (left to right on the number line)

Order

To put numbers in order, smallest to biggest or biggest to smallest.

4 > -1 because 4 is to the right of -1 on the number line

Greater than

Farther right on a number line. The > sign.

-6 < -2 because -6 is farther left — it is farther from zero

Less than

Farther left on a number line. The < sign.

-4 is 4 units to the LEFT of zero on the number line

Negative integer

A whole number smaller than zero, like -5.

..., -3, -2, -1, 0, 1, 2, 3, ...

Integer

Whole numbers and their opposites, like -2, -1, 0, 1, 2.

Key Ideas & Notes

- Captain Vega's crew found treasures at different depths underwater!
- The deeper the treasure, the more negative the elevation.
- A gold coin is at -2 meters, a silver crown is at -7 meters, and a ruby ring is at -5 meters.
- The crew needs to rank them from the shallowest (closest to the surface) to the deepest.
- Plot the treasure depths on the number line. Then order them from least to greatest.

Think About It

- Which treasure is closest to the surface?
- Is -7 greater than or less than -2?
- How does the number line help you compare negative numbers?

My Notes

Guided Examples

Example 1

Which statement is TRUE?

Solution: -5 is farther to the left on the number line than -2, so -5 < -2 is true.

Answer: B. -5 < -2

Example 2

Which integer is the LEAST: -3, 5, -8, 2, 0?

Solution: -8 is farthest to the left on the number line, making it the least (smallest) integer.

Answer: A. -8

Example 3

What is |−8|?

Solution: Absolute value is distance from 0, always positive. |−8| = 8.

Answer: A. 8

Write About the Math

The Writing Revolution

I can explain my reasoning using the words compare, order, greater than, and less than.

1. Kernel Sentence

subject + verb

Model: Compare is to see if a number is bigger, smaller, or equal to another.
Comparar es ver si un número es mayor, menor o igual que otro.

Write a kernel sentence about compare. Use a subject and a verb.
Escribe una oración base sobre comparar. Usa un sujeto y un verbo.

_____

_____

2. Sentence Expansion

because · but · so

Kernel: Compare matters in math
Comparar importa en matemáticas

Expand the kernel three ways. Add a reason, a contrast, and a result.

because *porque*

Compare matters in math because ____.
Comparar importa en matemáticas porque ____.

_____

but *pero*

Compare matters in math, but ____.
Comparar importa en matemáticas, pero ____.

_____

so *entonces*

Compare matters in math, so ____.
Comparar importa en matemáticas, entonces ____.

_____

3. Sentence Types

4 ways to write a math idea

Statement
Afirmación

Tell one true fact about compare.
Di un hecho verdadero sobre compare.

Compare ____.

Question
Pregunta

Ask a question about compare.
Haz una pregunta sobre compare.

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about compare.
Muestra entusiasmo sobre compare.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

Tell a partner what to do with compare.
Dile a un compañero qué hacer con compare.

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning

use a sentence starter

____ is greater than ____ because ____.
____ es mayor que ____ porque ____.

On the number line, ____ is to the ____.
En la recta numérica, ____ está a la ____.

I compare these when ____.
Comparo estos cuando ____.

Try It

Solve on your own. Check the answer key when you are done.

1. What is $|-8|$?

A. 8

B. -8

C. 0

D. -16

Show your work:

2. Three cities have temperatures of -12°F, -5°F, and 3°F. Which city is warmest?

A. 3°F

B. -5°F

C. -12°F

D. They are equal

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A student says: 'Negative numbers are always less than positive numbers, so -100 is less than 1.' Is this correct? Now the student says: '-100 is less than -1 because 100 is greater than 1.' Is THIS correct? Explain the difference.

Sentence starter: The first statement is ____ because ____. The second statement is ____ because with negative numbers, ____. On the number line, -100 is ____ of -1, so ____.

Show your work:

Reflect — Exit Ticket

Which list shows the integers in order from LEAST to GREATEST?

A. -2, -5, 0, 3, 7

B. 7, 3, 0, -2, -5

C. -5, -2, 0, 3, 7

D. 0, -2, -5, 3, 7

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. 8 — *Absolute value is distance from 0, always positive. |−8| = 8.*
2. **Try It 2:** A. 3°F — *3°F is the greatest because it is farthest to the right on the number line. The order from coldest to warmest is -12, -5, 3.*
3. **Exit Ticket:** C. -5, -2, 0, 3, 7 — *-5 is the smallest (farthest left on the number line), then -2, then 0, then 3, then 7. The correct order from least to greatest is -5, -2, 0, 3, 7.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Compare is to see if a number is bigger, smaller, or equal to another.
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).