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Unit 7, Lesson 3

# Comparing Positive and Negative Numbers

Let’s compare numbers on the number line.

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## 3.1Which Three Go Together: Inequalities

Which three go together? Why do they go together?

A

B

C

D

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## 3.2Comparing Temperatures

Here are the low temperatures, in degrees Celsius, for a week in Anchorage, Alaska.

| day | Mon | Tue | Wed | Thurs | Fri | Sat | Sun |
| --- | --- | --- | --- | --- | --- | --- | --- |
| temperature | 5 | -1 | -5.5 | -2 | 3 | 4 | 0 |

1. Plot the temperatures on a number line.
2. Which day of the week had the lowest low temperature?
3. On a winter day, the low temperature in Anchorage, Alaska, was -21 degrees Celsius, and the low temperature in Minneapolis, Minnesota, was -14 degrees Celsius.

* Jada said, “I know that 14 is less than 21, so -14 is also less than -21. This means that it was colder in Minneapolis than in Anchorage.”
* Do you agree? Explain your reasoning.

### Are you ready for more?

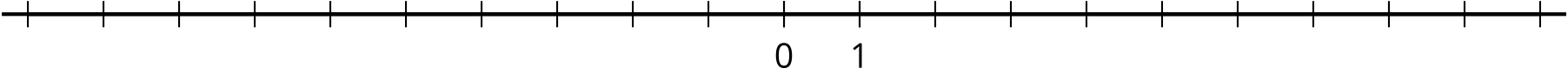
Another temperature scale frequently used in science is the *Kelvin scale*. In this scale, 0  is the lowest possible temperature of anything in the universe, and it is -273.15 degrees in the Celsius scale. Each is the same as , so is the same as .

1. Water boils at . What is this temperature in ?
2. Ammonia boils at . What is the boiling point of ammonia in ?
3. Explain why only positive numbers (and 0) are needed to record temperature in .

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## 3.3Rational Numbers on a Number Line

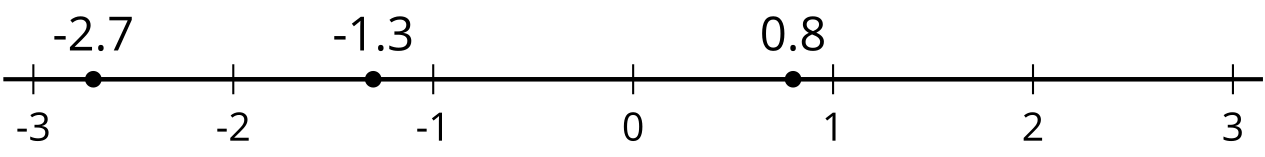
1. Plot the numbers -2, 4, -7, and 10 on the number line. Label each point with its numeric value.

* 

1. Decide whether each inequality statement is true or false. Be prepared to explain your reasoning.

## Lesson 3 Summary

The phrases “greater than” and “less than” can be used to compare numbers on the number line. For example, the numbers -2.7, 0.8, and -1.3, are shown on the number line.



Because -2.7 is to the left of -1.3, we say that -2.7 is less than -1.3. We write:

In general, any number that is to the left of a number is less than .

We can see that -1.3 is greater than -2.7 because -1.3 is to the right of -2.7. We write:

In general, any number that is to the right of a number is greater than .

We can also see that and . In general, any positive number is greater than any negative number.