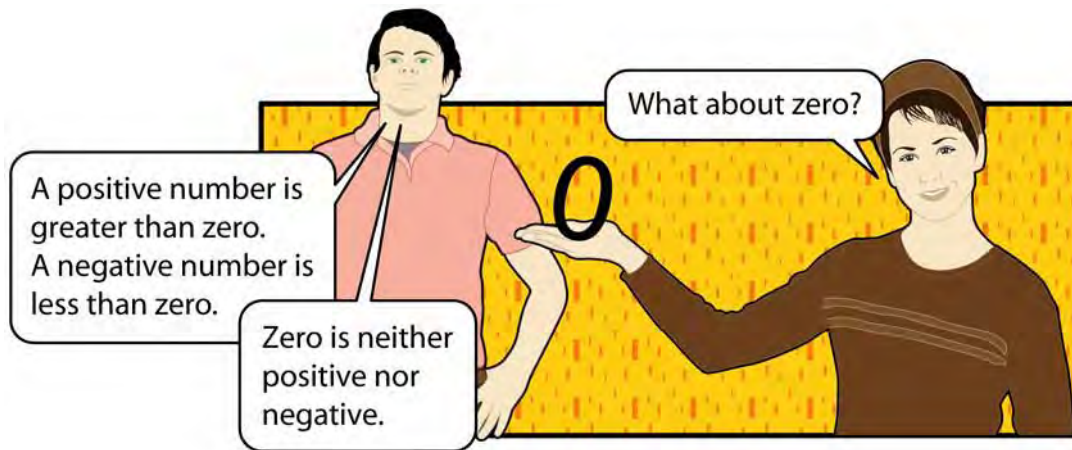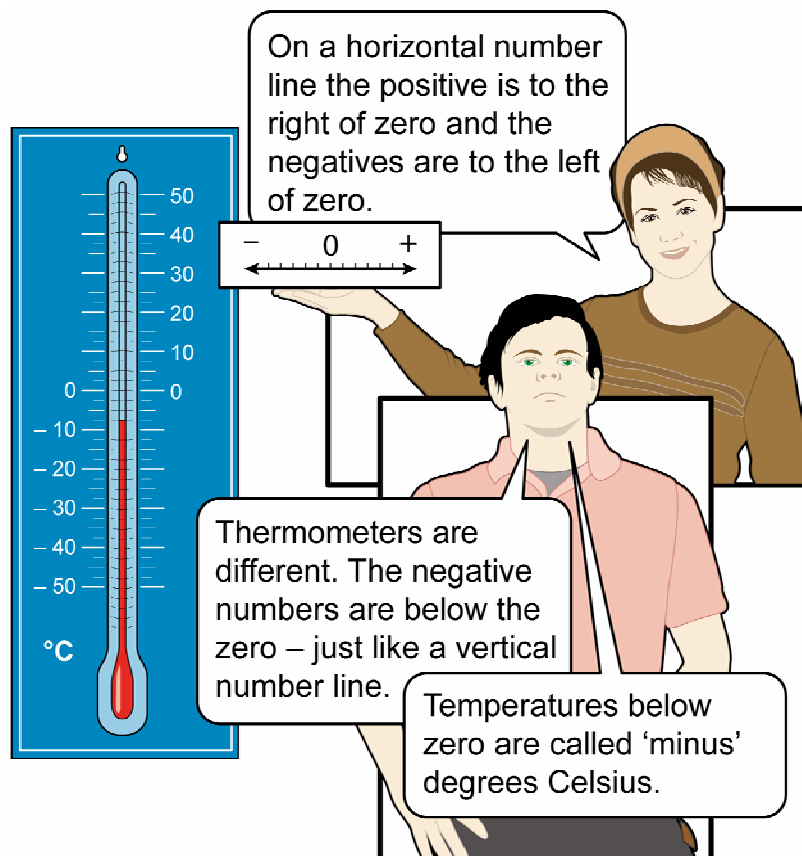# Positive and negative numbers
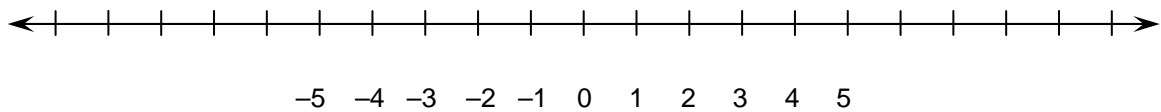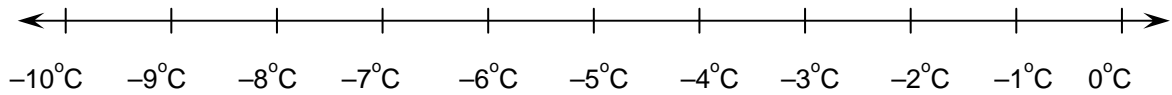

1. A number line is a great way to show negative and positive numbers. Fill in the missing numbers on the number line.


$$-5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5$$

2. On a thermometer, the further a negative number is from zero the colder it is. So –40 °C is colder than –30 °C.

For each pair use the number line to find the colder temperature. Circle it.

–10°C	–9°C	–8°C	–7°C	–6°C	–5°C	–4°C	–3°C	–2°C	–1°C	0°C

a) –3 °C, – 4 °C   b) –5 °C, –2 °C   c) –8 °C, –1 °C   d) 0 °C, –3 °C

3. Temperature range is the difference between the minimum and maximum temperature. The range of temperature from –4 °C to 2 °C is 6 °C. It is shown on the number line.

| –5°C | –4°C | –3°C | –2°C | –1°C | 0°C | 1°C | 2°C | 3°C | 4°C | 5°C |
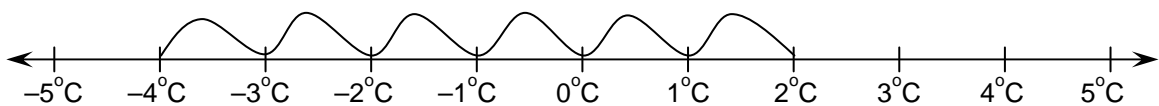
Use the number line below to find the temperature range from minimum to maximum:

a) 4 °C to –2 °C, range is _____   c) –5 °C to 2 °C, range is _____

b) 4 °C to –3 °C, range is _____   d) –1 °C to –5 °C, range is _____

–5°C	–4°C	–3°C	–2°C	–1°C	0°C	1°C	2°C	3°C	4°C	5°C
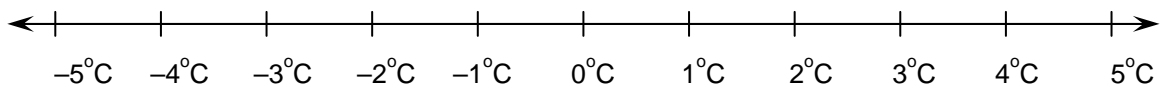
I found the January average temperatures for some European cities.
Wow! Moscow is freezing!

City	Country	Max.	Min.
Reykjavik	Iceland	2	–2
Athens	Greece	13	6
Bratislava	Slovakia	27	–3
Vienna	Austria	1	–4
Bucharest	Romania	19	–7
Moscow	Russia	–9	–16

City	Country	Max.	Min.
Copenhagen	Denmark	28	–2
Rome	Italy	11	5
Helsinki	Finland	26	–3
Sofia	Bulgaria	25	–4
Prague	Czech R.	5	–1
Warsaw	Poland	1	–6

The following number line shows the temperature range for Reykjavik. It has a positive maximum of 2 °C and a negative minimum of –2 °C. To find the range, in this case, work out how far each temperature is from zero. Add the two numbers together.

–5°C   –4°C   –3°C   –2°C   –1°C   0°C   1°C   2°C   3°C   4°C   5°C
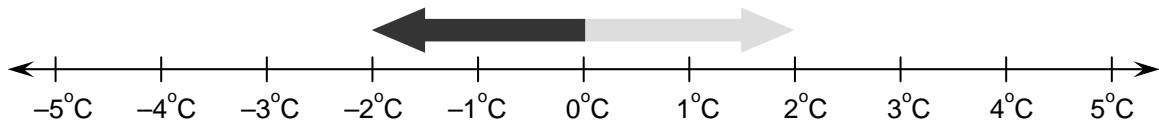
4. All of the following cities have a positive maximum and a negative minimum. Add the two numbers to find the temperature range. The first one is done for you.

a) Reykjavik 4°C

b) Vienna _____ °C

c) Bratislava _____ °C

d) Bucharest _____ °C

e) Copenhagen _____ °C

f) Sofia _____ °C

g) Warsaw _____ °C

h) Prague _____ °C

How do I compare a minus temperature with a minus temperature?

Use a number line. For example, if the maximum one day in Russia was -7 and the next day it was -12, the difference is 5°C.

–14   –13   –12   –11   –10   –9   –8   –7   –6   –5   –4   –3   –2   –1   0

5.   Find the difference between the maxima for the first two days in January for
      these European capitals.

City	Country	Jan 1st	Jan 2nd	Difference
Minsk	Belarus	-7^oC	-1^oC	
Moscow	Russia	-8^oC	-14^oC	
Kishinev	Moldova	-12^oC	-4^oC	
Stockholm	Sweden	-11^oC	-2^oC	

Using the number line will help.

<----+----+----+----+----+----+----+----+----+----+----+----+----+----+---->
   −14 −13 −12 −11 −10   −9   −8   −7   −6   −5   −4   −3   −2   −1   0

Answers for Positive and negative numbers

1.

$$-10 \quad -9 \quad -8 \quad -7 \quad -6 \quad -5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10$$

2. a) -4° C   b) -5° C   c) -8° C   d) -3° C

3. a) 6° C   c) 7° C
    b) 7° C   d) 4° C

4. a) Reykjavik 4° C   e) Copenhagen 30° C

    b) Vienna 5° C   f) Sofia 29° C

    c) Bratislava 30° C   g) Warsaw 7° C

    d) Bucharest 26° C   h) Prague 6° C

5.

City	Country	Jan 1st	Jan 2nd	Difference
Minsk	Belarus	-7° C	-1° C	6° C
Moscow	Russia	-8° C	-14° C	6° C
Kishinev	Moldova	-12° C	-4° C	8° C
Stockholm	Sweden	-11° C	-2° C	9° C