Prepared by -Pranjali Patil   L-5 Introduction to Integers
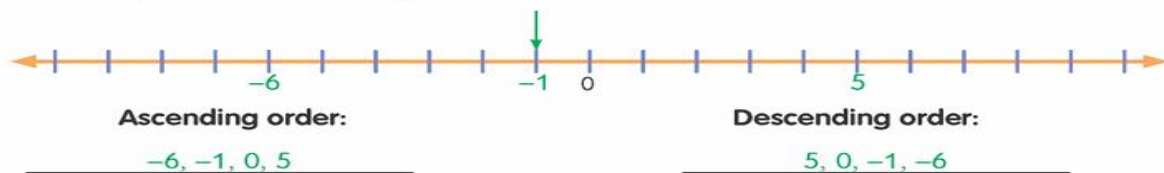
Pre- activity- Solve Let's begin in the textbook.

5.1 Representing, Comparing and Ordering Integers

Let's mark the missing numbers on the number line. Compare the distance of −7 and 7 from 0. Repeat with more such patterns and discuss.

−8 is greater / lesser✓ than −5 by 3 .

Label the number line from −10 to 10. Then, order −1, 5, −6 and 0 in both ascending and descending order.

Ascending order: Descending order:

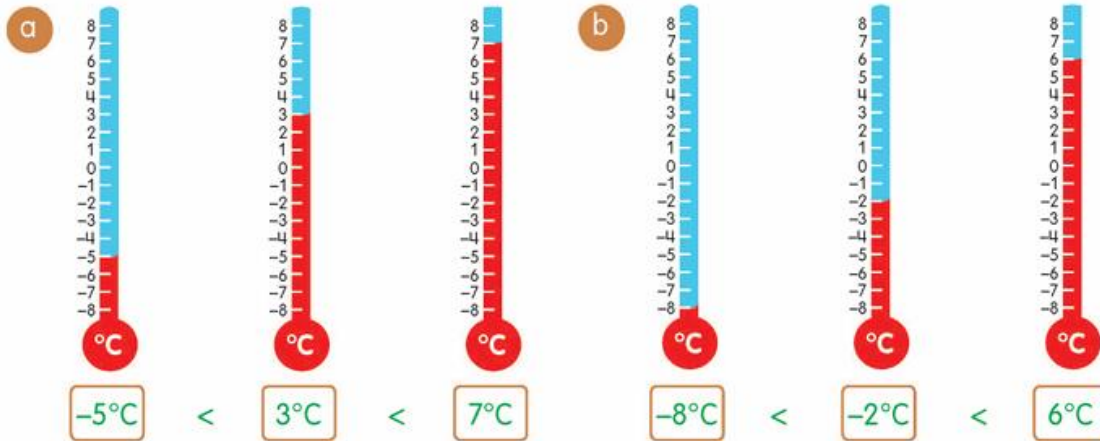−6, −1, 0, 5   5, 0, −1, −6

5.1 Concrete stage

Concrete Stage

Use a number line to arrange the following numbers in both ascending and descending order.

a   −4, −10, −3   Ascending order: −10 < −4 < −3
                     Descending order: −3 > −4 > −10

b   7, −10, −4   Arrange in ascending order: −10 < −4 < 7
                     Arrange in descending order: 7 > −4 > −10

c   −6, 4, −3, 0   Arrange in ascending order: −6 < −3 < 0 < 4

Pictorial Stage

Read the temperatures on the thermometers, and number them in increasing order. (Write 1 for the lowest and 3 for the highest temperatures.)

a

| −5°C | < | 3°C | < | 7°C |

b

| −8°C | < | −2°C | < | 6°C |

Abstract Stage

1 Compare the following numbers using '<' and '>' signs.

a −8 $\boxed{>}$ −10

b 5 $\boxed{>}$ −5

c −15 $\boxed{<}$ −11

d 25 $\boxed{>}$ −34

e −21 $\boxed{<}$ 19

f 100 $\boxed{>}$ −99

2 Order the numbers in ascending order, in your notebook.

a −3, −10, 7

−10 < −3 < 7

b 5, −5, −9

−9 < −5 < 5

c 0, −2, −1, 2
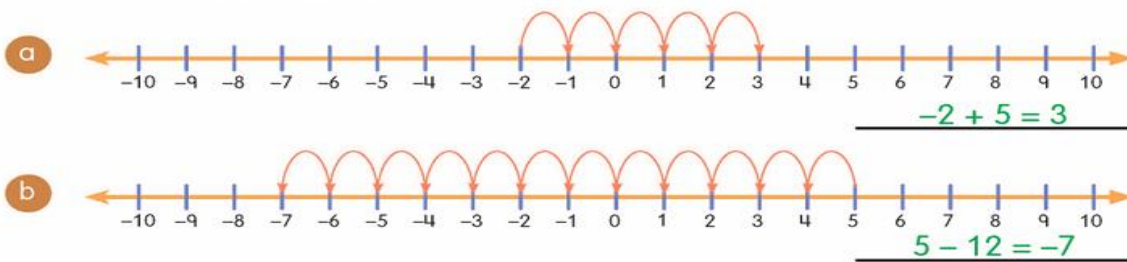
−2 < −1 < 0 < 2

5.2 Adding and Subtracting Integers.

Concrete Stage

Use 'Positive and Negative Counters' to work out the following calculations.

a −2 + 5 = 3

b −4 + 7 = 3

c 6 − 8 = −2

d −6 + 4 = −2

Pictorial Stage

Look at the calculations of integers on the given number lines, and write the number sentences for each of them.
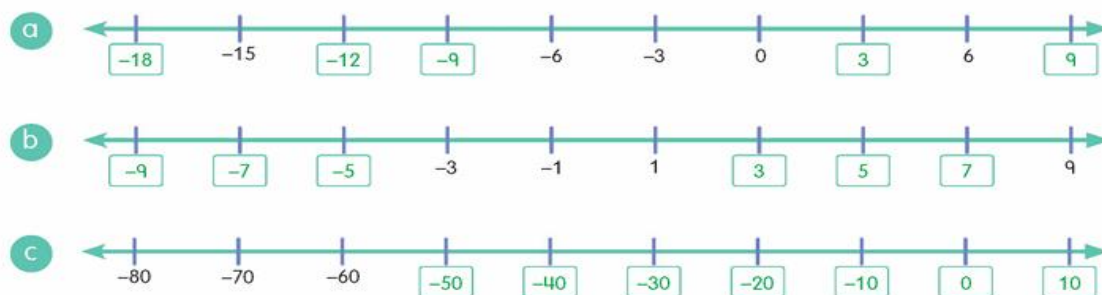
a

$$-2 + 5 = 3$$

b

$$5 - 12 = -7$$

Abstract Stage

Visualise a number line and solve.

a $-5 + 12 = 7$ **b** $15 + 2 = 17$

c $-3 - 10 = -13$ **d** $6 - 8 = -2$

e $6 + (-4) = 2$ **f** $5 - (-10) = 15$

Blooming Questions

1 Fill the missing numbers on the given number lines using skip counting.

a

| −18 | −15 | −12 | −9 | −6 | −3 | 0 | 3 | 6 | 9 |

b

| −9 | −7 | −5 | −3 | −1 | 1 | 3 | 5 | 7 | 9 |

c

| −80 | −70 | −60 | −50 | −40 | −30 | −20 | −10 | 0 | 10 |

2 The thermometer is displaying the initial temperature. Work out the new temperature after

a a rise of 7°C ___4°C___   **b** a fall of 7°C ___−10°C___

c a fall of 12°C ___−15°C___   **d** a rise of 10°C ___7°C___

3 State 'True' or 'False'.

a Zero is a positive integer. ___False___

b −25 will be on the right of zero on the number line. ___False___

c Zero is greater than all the negative numbers. ___True___

d All the integers are also natural numbers. ___False___

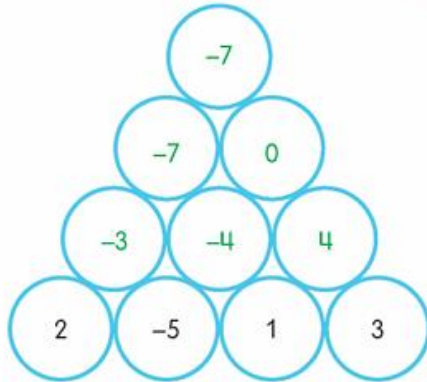**e** When we move left on the number line, the negative numbers get greater. ___False___

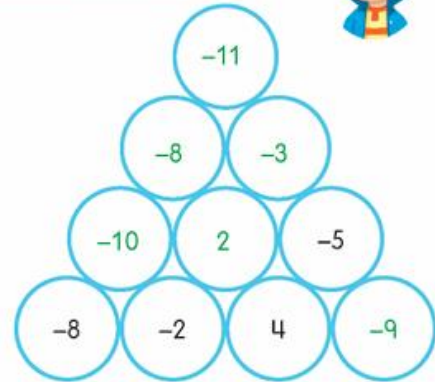**4** Work out the missing numbers in the addition pyramids.

Start at the bottom row. Add two adjacent numbers and write the sum in the circle above them.

a

Pyramid a:
- Top: −7
- −7, 0
- −3, −4, 4
- 2, −5, 1, 3

b

Pyramid b:
- Top: −11
- −8, −3
- −10, 2, −5
- −8, −2, 4, −9

5 Look at the following table, and write how much profit or loss the shopkeeper makes using the integers with the proper sign. Use a negative sign to denote loss and a positive sign to represent profit.

Hintometer:
We get a profit if, Selling cost > Purchasing cost.
Profit = Selling cost − Purchasing cost

We get a loss if, Purchasing cost > Selling cost.
Loss = Purchasing cost − Selling cost

	Items	Purchasing cost	Selling cost	
a	Rice	₹700	₹750	+50
b	Wheat	₹750	₹600	−150

	Items	Purchasing cost	Selling cost	
c	Milk	₹400	₹480	+80
d	Pulses	₹625	₹675	+50
			Total	30 (profit)

Post –activity-Write opposite sentences for the following in your NB.

1. 500m above the sea level.

2. Giving ₹1000 to a friend.

3. Getting a gift of ₹ 200.

S.Teacher   H.O.D.   Co-Ordinator   Principal