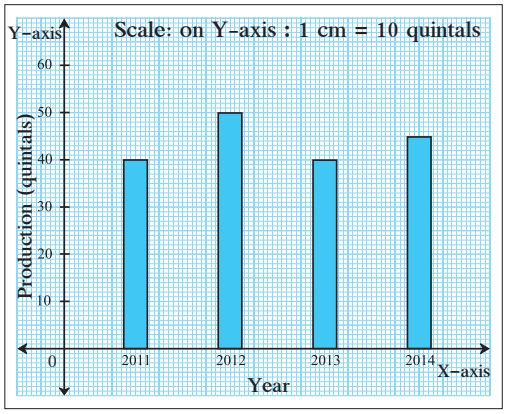
7 Joint Bar Graph

Let's discuss.

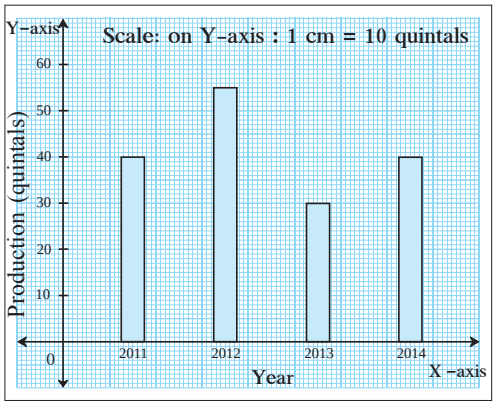
Joint Bar Graph

Observe the two bar graphs below which show the wheat production in quintals in Ajay's and Vijay's farms.

Ajay's wheat production

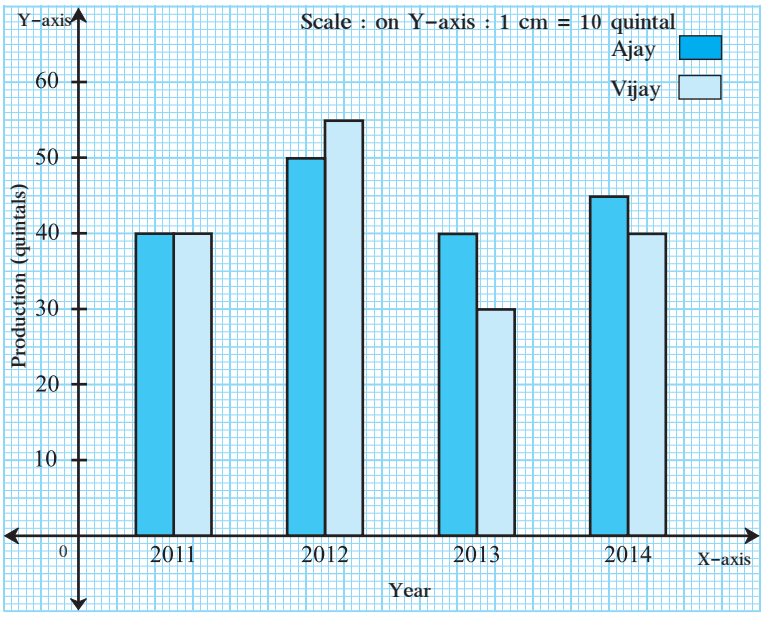


Vijay's wheat production



Let us see if we can show the information from both graphs in a single graph. Look at the graph below. In this way, more information can be given using less space. Besides, comparing Ajay and Vijay's wheat production also becomes easier. Such graphs are called joint bar graphs.

Ajay and Vijay's wheat production

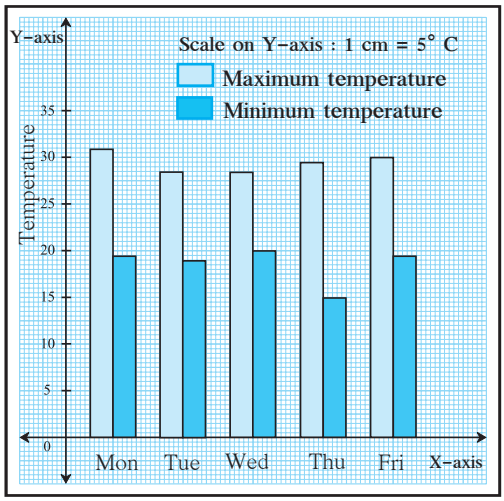


Observe the graph shown alongside and answer the following questions.

- In which year did they both produce equal quantities of wheat ?
- In year 2014, who produced more wheat?
- In year 2013, how much wheat did Ajay and Vijay each produce?

Reading a Joint Bar Graph

The minimum and maximum temperature in Pune for five days is given. Read the joint bar graph and answer the questions below.



- What data is shown on X-axis?
- What data is shown on Y-axis?
- Which day had the highest temperature?
- On which day is the minimum temperature the highest?
- On Thursday, what is the difference between the minimum and maximum temperature?
- On which day is the difference between the minimum and maximum temperature the greatest ?

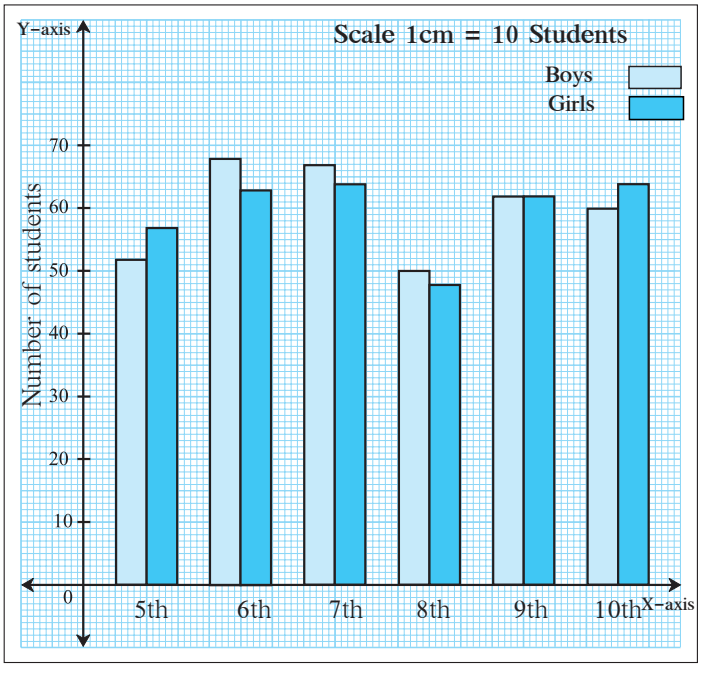
Let's learn. ## Drawing a Joint Bar Graph

The number of boys and girls in a school is given. Draw a joint bar graph to show this information.

Class	5th	6th	7th	8th	9th	10th
Boys	52	68	67	50	62	60
Girls	57	63	64	48	62	64

Steps for drawing a Joint Bar Graph

1. On a graph paper, draw the X-axis and Y-axis and their point of intersection.
2. Keeping the distance between two sets of joint bars equal, show the classes on X-axis.
3. Choose a scale for the Y-axis.
   For example, 1 unit = 10 girls/boys.
   Mark the numbers of boys and girls on the Y-axis.
4. Using the scale, work out the height of columns required to show the numbers of boys and girls in each class. Use different colours to show the different bars in each set.

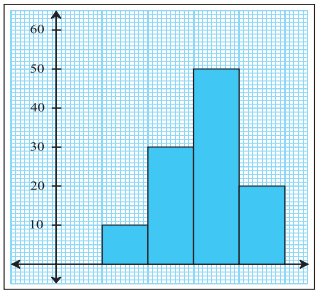


Now I know!

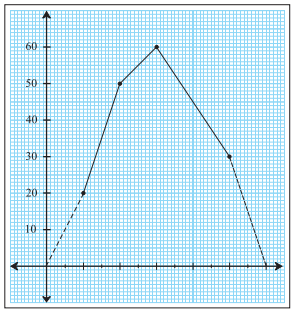
- In a joint bar graph, the width of all columns should be equal.
- The distance between any two consecutive sets of joint bars should be equal.
- A joint bar graph is used for a comparative study.

My friend, Maths : newspapers, magazines, presentation of data.

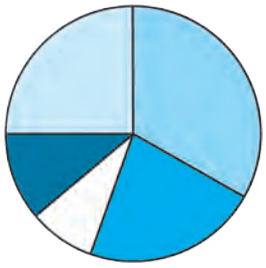
- Collect various kinds of graphs from newspapers and discuss them.



1. Histogram



2. Line Graph



3. Pie Chart

ICT Tools or Links

When presenting data, different kinds of graphs are used instead of only bar graphs. With the help of your teacher, take a look at the various kinds of graphs seen in MS-Excel, Graph Matica, Geogebra.

Practice Set 31

1. The number of saplings planted by schools on World Tree Day is given in the table below. Draw a joint bar graph to show these figures.

Name of sapling / School Name	Almond	Karanj	Neem	Ashok	Gulmohar
Nutan Vidyalaya	40	60	72	15	42
Bharat Vidyalaya	42	38	60	25	40

2. The table below shows the number of people who had the different juices at a juice bar on a Saturday and a Sunday. Draw a joint bar graph for this data.

Fruits / Days	Sweet Lime	Orange	Apple	Pineapple
Saturday	43	30	56	40
Sunday	59	65	78	67

3. The following numbers of votes were cast at 5 polling booths during the Gram Panchayat elections. Draw a joint bar graph for this data.

Persons \ Booth No.	1	2	3	4	5
Men	200	270	560	820	850
Women	700	240	340	640	470

4. The maximum and minimum temperatures of five Indian cities are given in °C. Draw a joint bar graph for this data.

Temperature \ City	Delhi	Mumbai	Kolkata	Nagpur	Kapurthala
Maximum temperature	35	32	37	41	37
Minimum temperature	26	25	26	29	26

5. The numbers of children vaccinated in one day at the government hospitals in Solapur and Pune are given in the table. Draw a joint bar graph for this data.

City \ Vaccine	D.P.T. (Booster)	Polio (Booster)	Measles	Hepatitis
Solapur	65	60	65	63
Pune	89	87	88	86

6. The percentage of literate people in the states of Maharashtra and Gujarat are given below. Draw a joint bar graph for this data.

State \ Year	1971	1981	1991	2001	2011
Maharashtra	46	57	65	77	83
Gujarat	40	45	61	69	79

A joint bar graph is useful for drawing conclusions from observations recorded in a science experiment as well in geography and economics.

Maths is fun!

$1 + 3 = 2^2$

$1 + 3 + 5 = 3^2$

$1 + 3 + 5 + 7 = 4^2$

Can you obtain the formula $1 + 3 + ... + (2n - 1) = n^2$?

Verify this formula for n = 6, 7, 8, ...