

TABULAR
and
GRAPHICAL
PRESENTATION
of
DATA

A vibrant, long-exposure photograph of a waterfall cascading into a pool in a dense, sun-dappled forest. The water is blurred into a white, silky stream, contrasting with the sharp green foliage and moss-covered rocks. Sunlight rays pierce the canopy, creating a magical atmosphere.

“Science is organized knowledge...

Wisdom is organized life...

Immanuel Kant

GRAPHICAL REPRESENTATION OF DATA



Data Representation Methods

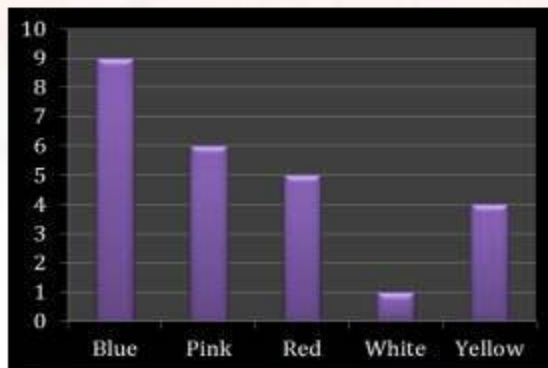
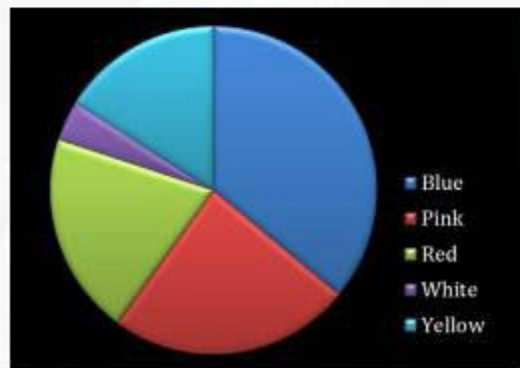
■ Data presentation (representation): 'for the maximum utilization of data and its correct interpretation, it should be presented in an appropriate way'

■ Different types of data representations:

1. Tables
2. Graphs / Charts
3. Combination of tables and graphs

blue, red, blue, white, blue,
pink, yellow, blue, red, pink,
yellow, red, pink, pink,
yellow, blue, white, blue,
pink, blue, blue, pink, red,
blue, red

Raw data



Graphical Representation of Data

Colour	Number
Blue	9
Pink	6
Red	5
White	1
Yellow	4
Total: 25	

Tabulated data

TABLE

A rectangular arrangement of data in which the data are positioned in rows and columns.

Tabulation: The process of presenting the classified data in a scientific manner and in an orderly sequence is called Tabulation.

The main objective of tabulation is to present and interpret complex information in a simple and systematic way.

Significance or Objectives of data Tabulation

- ✓ Simplifies the complexities of raw data
- ✓ Make the data more attractive
- ✓ Simplify the presentation
- ✓ Facilitate comparison
- ✓ Make data easy to handle for further processing

GRAPHICAL REPRESENTATION OF DATA



General rules of tabulation

1. Table should have **table number**
2. Should have proper **title**
3. Table should fit the **size of paper**
4. Number of rows and columns should **not** be too small or too large
5. Each column and row should have specific and **self explanatory titles**
6. As far as possible, figures should be approximated before tabulation
7. Items should be arranged in a specific way (alphabetical, chronological, size, geography etc.)

GRAPHICAL REPRESENTATION OF DATA



Model of a TABLE (tabulated data)

Table
No.

Table Title

Table 21.3 Fertility and Mortality Indicators: India – Crude Death Rates*

Year	Rural	Urban	Combined
1984	13.8	8.6	12.6
1985	12.9	7.6	11.7
1986	12.1	7.6	11.1
1987	12.0	7.4	10.9
1988	12.0	7.7	11.0
1989	11.1	7.2	10.3
1990	10.5	6.8	9.7
1991	10.5	7.0	9.8

Foot
note

Table
Body

**Death/1000 births*

Source: 1. Govt. of India, Family Welfare Programme in India year Book 1986-87
2. Sample Registration Bulletin, December 1987 and December 1992

Data Source

www.easybiologyclass.com

TYPES OF TABLE

Textual Table

Table 2. Observations of Catalyst Reactions Under Boiling or Moderate Heat Conditions

Catalyst	Reaction Intensity	Boiling Temp. (y/n)
Organic		
A	none	y
B	high	n
C	low	n
Inorganic		
A	high	y
B	moderate	n
C	low	y

Numerical Table

Table 4. Demographic Composition of White-Tailed Deer Prehunting Populations in North Carolina on a 30,000 Acre Area from 1965-2000

Males				Females			Total
Year	Adults	Yearlings	Fawns	Adults	Yearlings	Fawns	
1965	307	135	442	1002	265	462	2613
1970	333	222	318	1069	228	332	2458
1975	235	162	260	887	183	271	2325
1980	221	130	450	900	250	462	2502
1985	190	112	320	862	230	360	1998
1990	165	220	289	782	216	234	2413
1995	185	132	476	1041	218	406	2074
2000	155	312	302	911	315	330	2325

Statistical Table

Table 3. ANOVA Table for Two-Way Anylysis of Variance

Source	DF	Mean Square	F-Value	Prob > F
Between Subjects				
Treatment	2	315.20	5.3	0.003
Error	70	67.90		
Within Subjects				
Time	1	128.30	7.6	0.003
Time x Treatment	2	95.36	5.6	0.006
Error	70	16.30		

GRAPH

- **A visual representation of a relationship between, but not restricted to, two variables.**
- **Commonly consists of two axes called the x-axis (horizontal) and y-axis (vertical).**

Things to
Remember in
Making
Graph

Accurately shows the facts

Grabs the reader's attention

Has a title and labels

Is simple and uncluttered

**clearly shows any trends or
differences in the data**

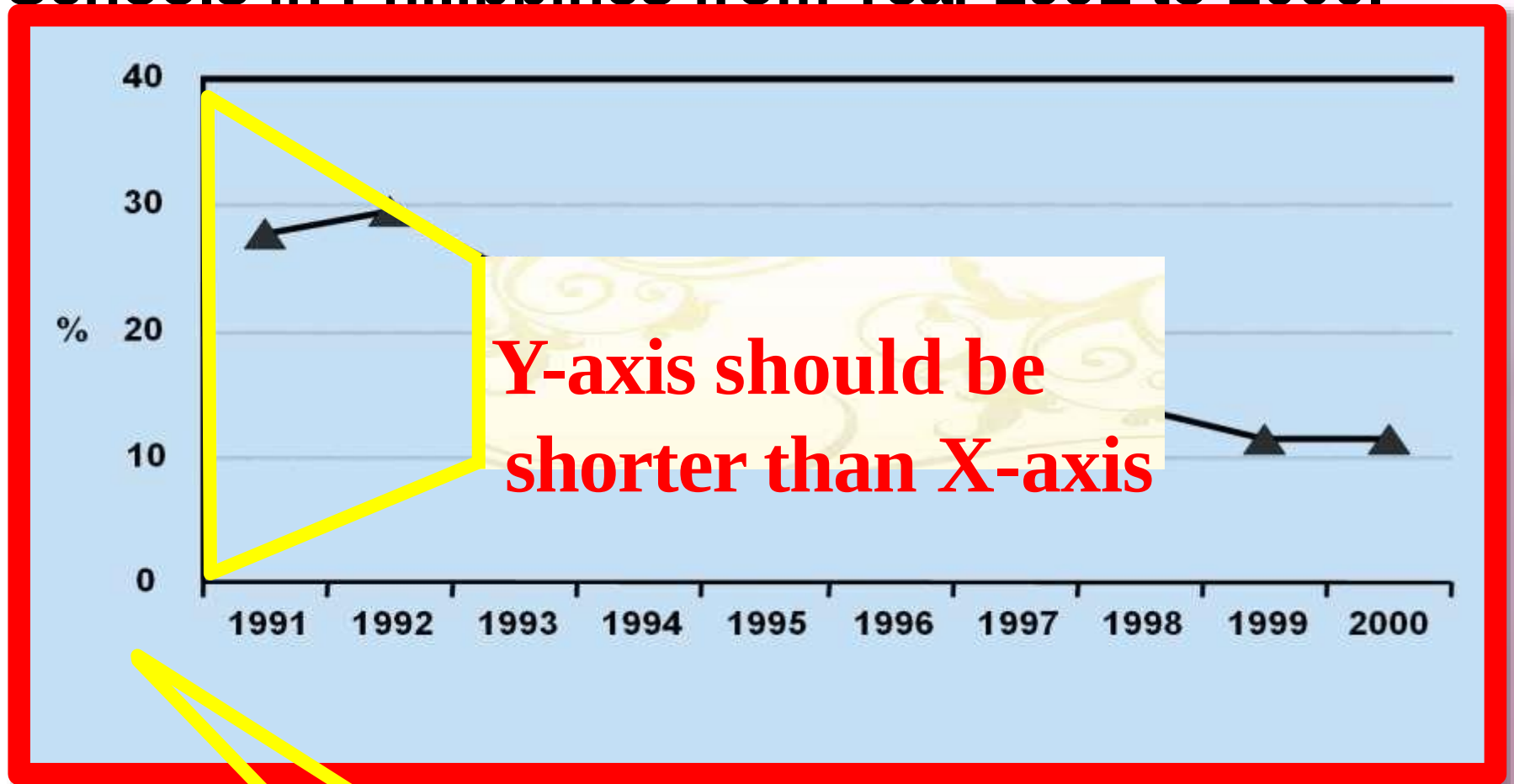
is visually accurate

Types Of Graph

Line Graph

- **Scale line graph: represents frequency distributions over time**
- **Y-axis represents frequency.**
- **X-axis represents time.**

Figure 8.1. Trends of Dropout Students in Public Schools in Philippines from Year 1991 to 2000.



Start the Y-axis with zero
Example

Bar Graph

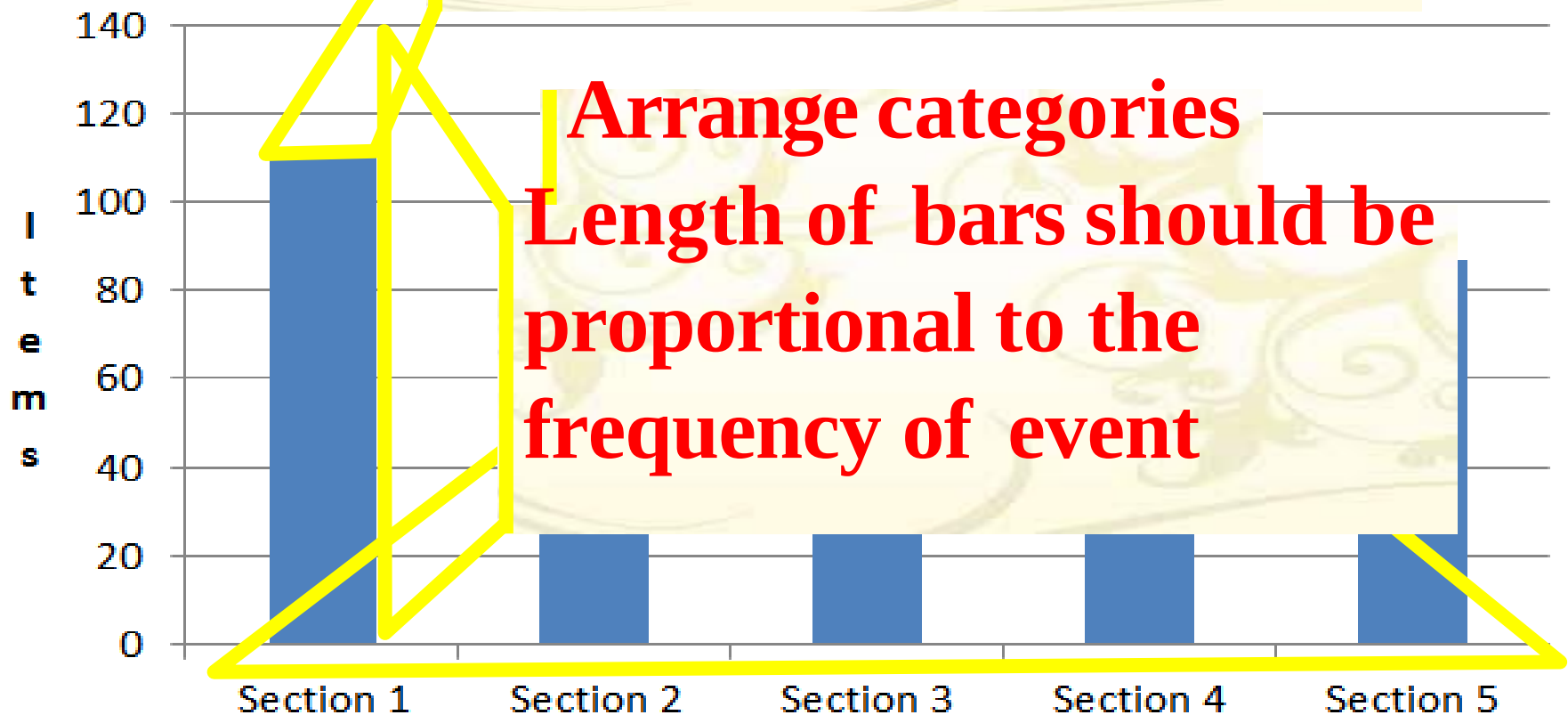
- Uses differently coloured or patterned bars to represent different classes.
- Y-axis represents frequency.
- X-axis may represent time or different classes.

Average Scores Per Section of Second Year High School in Science

Make bars the same width

Arrange categories

**Length of bars should be
proportional to the
frequency of event**



Example

Clustered Bar Graph

- Bars can be presented as clusters of sub-groups in clustered bar charts.
- These are useful to **compare values across categories.**
- They are sometimes called stacked bar charts.

Use different colours or patterns to show different sub-groups for the variables being shown.

Leave a space between adjacent groups of bars.



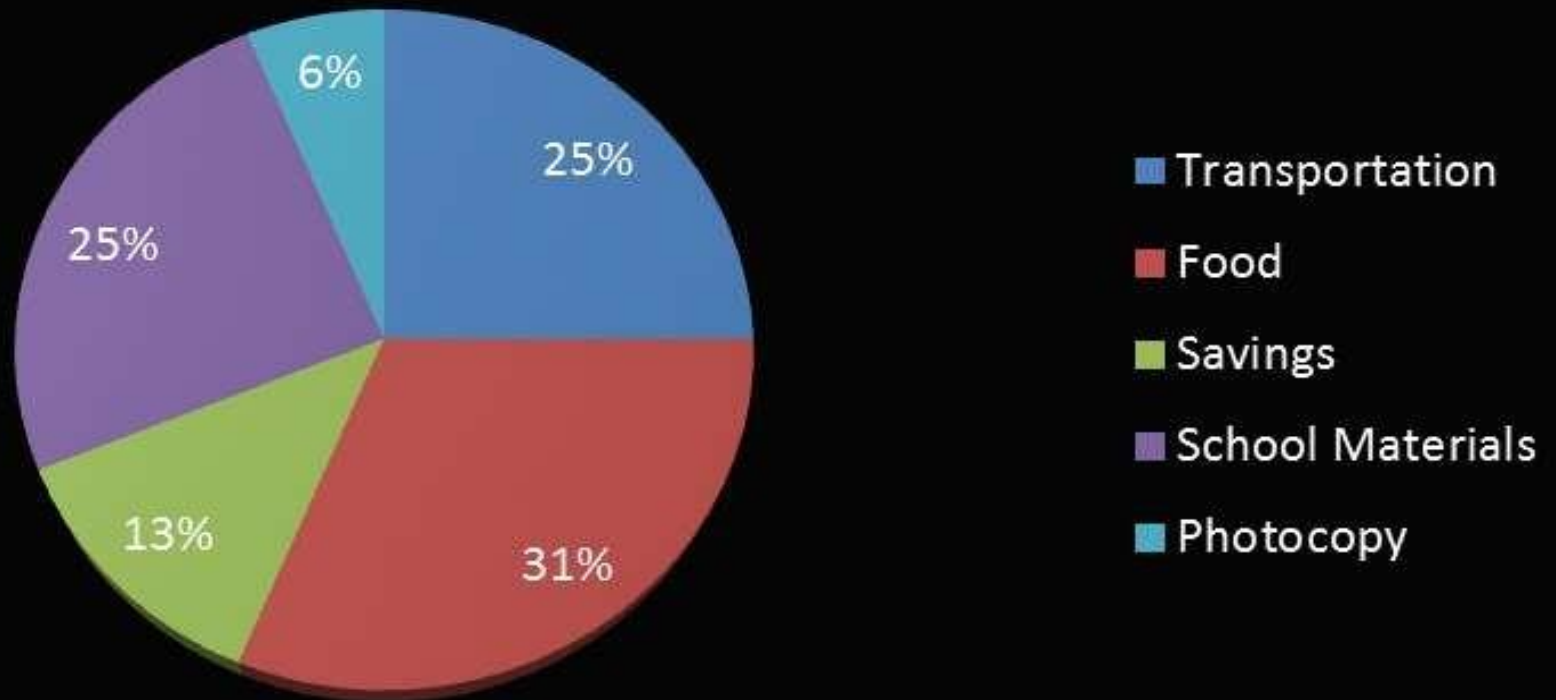
Show no more than three sub-bars within a group of bars.

Example

- **A circular (360 degree) graphic representation**
- **Compares subclasses or categories to the whole class or category using differently coloured or patterned segments**

Pie Chart

My Daily Expenses



Scatter Plot

- A scatter plot is a two- or three-dimensional plot that shows the joint variation of two (or three) variables from a group of observations.
- The coordinates of each point in the plot correspond to the data values for a single observation.

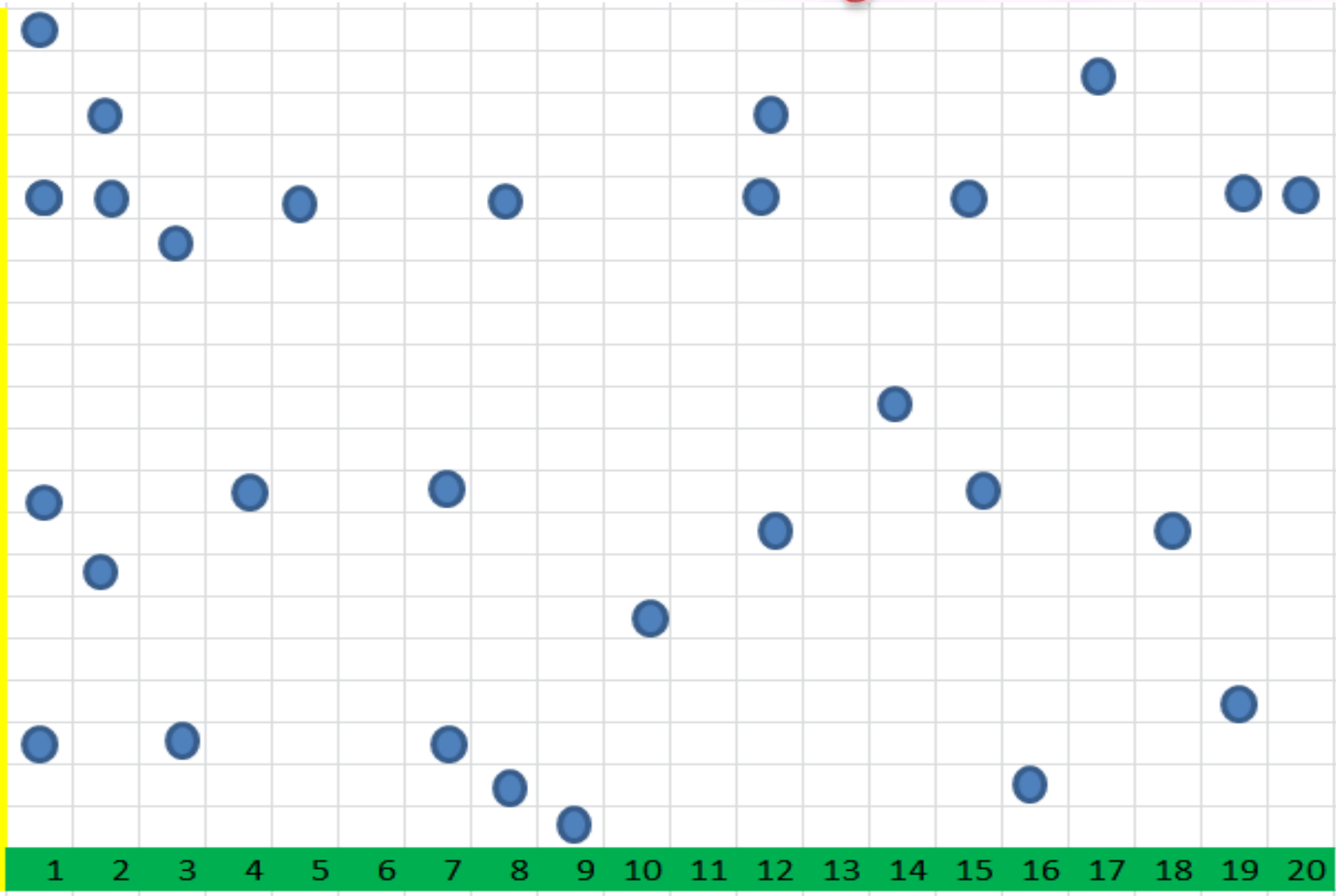
Item Analysis

Item

20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Student



- **Diagrams that show and compare data by using picture symbols.**
- **Each of these symbols corresponds to a specific quantity and is repeated a number of times.**

Pictographs

Number of Dogs in a Region

