

MEASUREMENT OF RAINFALL BY USING RAIN GAUGE



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Introduction:

A rain gauge is simply an instrument that is designed to measure the amount of rain that reaches the ground surface during a rainfall.

Rain gauges are considered the most traditional method for measuring rainfall. They have been used historically to provide rainfall quantities and rates at a single point in space.

The basic idea of most rain gauges is to collect rain water into a cylindrical vessel of a fixed diameter. Rainfall measurements are usually provided in units of water depth (inches or millimeters).

Aims and Objectives

Aim :-

Measurement of Rainfall by using Rain gauge.

Objectives :-

The objective of our project is -

- To observe and study the measurement of rainfall within a period of one month.
- To study the variation in quantities of rainfall in four different regions.

Materials and Method

Materials Required:

- cylindrical bottle (with fixed diameter)
- Measuring scale
- Scissors.
- Duct tape and transparent tape.
- Marker.
- Home-made rain gauge.

Preparation of the Rain gauge:-

To measure the rainfall we need to prepare a home-made rain gauge using required materials that includes a cylindrical water bottle with a fixed diameter and a measurement scale. Using a scissors about 30% of the of the cylindrical bottle, which was marked by the marker, is cut out. The cut out portion of the bottle resembles a conical shape. Then this conical part is placed up side down on the top of the bottle (70%) at the same place from where it was cut out. This part is fixed with rest of the bottle using a duct tape. For measurement a measuring scale (with inch/millimeter reading) is fixed vertically at the side of the rain gauge.

using transparent tape. Up to the '0' value of the measuring scale water is filled into the rain gauge to ensure proper reading of rainfall.

Method:-

The rain gauge is then placed in an obstacle free place where rain can easily fall into the rain gauge. After overnight rainfall, in the next morning reading of the measurement is taken and noted down.

This process is repeated for a period of one month.

Data of rainfall measurement from four different places are collected over the one month.

Result:- Readings of rainfall measurement of four different places are as follows.

Namsai, Arunachal Pradesh.

S.No.	Date	Time	Measurement of Rainfall (in mm)
1	15/06/21	9:00 AM	12
2	16/06/21	9:00 AM	7
3	17/06/21	9:00 AM	2
4	18/06/21	9:00 AM	20
5	19/06/21	9:00 AM	39
6	20/06/21	9:00 AM	96
7	21/06/21	9:00 AM	0
8	22/06/21	9:00 AM	10
9	23/06/21	9:00 AM	40
10	24/06/21	9:00 AM	18
11	25/06/21	9:00 AM	32
12	26/06/21	9:00 AM	0
13	27/06/21	9:00 AM	0
14	28/06/21	9:00 AM	0
15	29/06/21	9:00 AM	14
16	30/06/21	9:00 AM	41
17	01/07/21	9:00 AM	18
18	02/07/21	9:00 AM	0
19	03/07/21	9:00 AM	68
20	04/07/21	9:00 AM	72
21	05/07/21	9:00 AM	32
22	06/07/21	9:00 AM	0
23	07/07/21	9:00 AM	0
24	08/07/21	9:00 AM	1
25	09/07/21	9:00 AM	12
26	10/07/21	9:00 AM	18
27	11/07/21	9:00 AM	24
28	12/07/21	9:00 AM	26
29	13/07/21	9:00 AM	0
30	14/07/21	9:00 AM	0

Duliajan, Dibrugarh District.

S.No.	Date	Time	Measurement of rainfall (mm.)
1	15/06/21	8 : 07 Am	12
2	16/06/21	8 : 070 Am	48
3	17/06/21	8 : 02 Am	21
4	18/06/21	8 : 02 Am	51
5	19/06/21	8 : 30	39
6	20/06/21	9 : 14 Am	8
7	21/06/21	8 : 12 Am	29
8	22/06/21	8 : 08 Am	54
9	23/06/21	8 : 00 Am	4
10	24/06/21	8 : 23 Am	0
11	25/06/21	8 : 45 Am	0
12	26/06/21	8 : 10 Am	62
13	27/06/21	10 : 10 Am	42
14	28/06/21	8 : 07 Am	0
15	29/06/21	8 : 12 Am	0
16	30/06/21	8 : 19 Am	0
17	01/07/21	9 : 16 Am	16
18	02/07/21	7 : 25 Am	8
19	03/07/21	9 : 30 Am	23
20	04/07/21	7 : 09 Am	0
21	05/07/21	8 : 10 Am	0
22	06/07/21	8 : 10 Am	0
23	07/07/21	9 : 15 Am	46
24	08/07/21	9 : 16 Am	23
25	09/07/21	9 : 20 Am	7
26	10/07/21	8 : 25 Am	12
27	11/07/21	8 : 35 Am	0
28	12/07/21	7 : 40 Am	22

Banipur, Dibrugarh district.

Sl. No	Date	Time	Measurement of Rainfall (in mm).
1	15/06/21	8:30 AM	10
2	16/06/21	8:30 AM	6
3	17/06/21	8:30 AM.	0
4	18/06/21	8:30 AM	16
5	19/06/21	1:30 PM	27
6	20/06/21	8:30 AM	99
7	21/06/21	8:30 AM	6
8	22/06/21	8:30 AM	4
9	23/06/21	8:30 AM	36
10	24/06/21	8:30 AM	14
11	25/06/21	8:30 AM	27
12	26/06/21	8:30 AM	12
13	27/06/21	8:30 AM	0
14	28/06/21	8:30 AM	11
15	29/06/21	8:30 AM	13
16	30/06/21	8:30 AM	15
17	01/07/21	8:30 AM	23
18	02/07/21	8:30 AM	62
19	03/07/21	8:30 AM	7
20	04/07/21	8:30 AM	4
21	05/07/21	8:30 AM	6
22	06/07/21	8:30 AM	0
23	07/07/21	8:30 AM	2
24	08/07/21	8:30 AM	0
25	09/07/21	8:30 AM	0
26	10/07/21	8:30 AM	6
27	11/07/21	8:30 AM	11
28	12/07/21	8:30 AM	36
29	13/07/21	8:30 AM	7
30	14/07/21	8:30 AM	4
31	15/07/21	8:30 AM	3

Discussion:-

Rainfall is extremely variable, both over time and between different locations, which makes it very difficult to measure.

On one month i.e from 15 June, 2021 to 14 July, 2021 along with the members of the group, we collected data of rainfall measurement from four different locations, which are.

- (i) Dibrugarh Town.
- (ii) Dulajon, Dibrugarh district.
- (iii) Namrai, Anarachal pradesh.
- (iv) Baripar, Dibrugarh district.

Rain does not fall in the same quantity in any place around the different locations. Usually the uplands receive higher rainfall than that of the lowlands. Even within the same place due to the different of local climate the amount of rainfall may vary.

Dibangoch Town -

Sl.No.	Date	Time	Measurement of rainfall (mm)
1	15/06/21	8:30 Am	10
2	16/06/21	8:35 Am	6
3	17/06/21	8:40 Am.	0
4	18/06/21	8:00 Am.	15
5	19/06/21	8:20 Am	26
6	20/06/21	8:00 Am.	96
7	21/06/21	7:45 Am.	6
8	22/06/21	8:00 Am.	4
9	23/06/21	9:00 Am.	34
10	24/06/21	8:30 Am.	12
11	25/06/21	7:50 Am	26
12	26/06/21	9:00 Am	12
13	27/06/21	9:00 Am.	0
14	28/06/21	9:45 Am	4
15	29/06/21	7:45 Am	12
16	30/06/21	9:00 Am	16
17	01/07/21	8:25 Am	23
18	02/07/21	9:00 Am	61
19	03/07/21	8:45 Am	2
20	04/07/21	8:30 Am	4
21	05/07/21	8:15 Am	6
22	06/07/21	7:30 Am	0
23	07/07/21	9:15 Am	2
24	08/07/21	8:00 Am	0
25	09/07/21	8:30 Am	0
26	10/07/21	9:00 Am	5
27	11/07/21	8:15 Am	11
28	12/07/21	9:15 Am	33
29	13/07/21	8:00 Am	7
30	14/07/21	8:25 Am	3

Conclusion:-

By conducting the experiment in which we calculated the measurement of rainfall at four different locations, we learned that the measurement of rainfall varies randomly depending upon the locations and their respective climatic conditions.