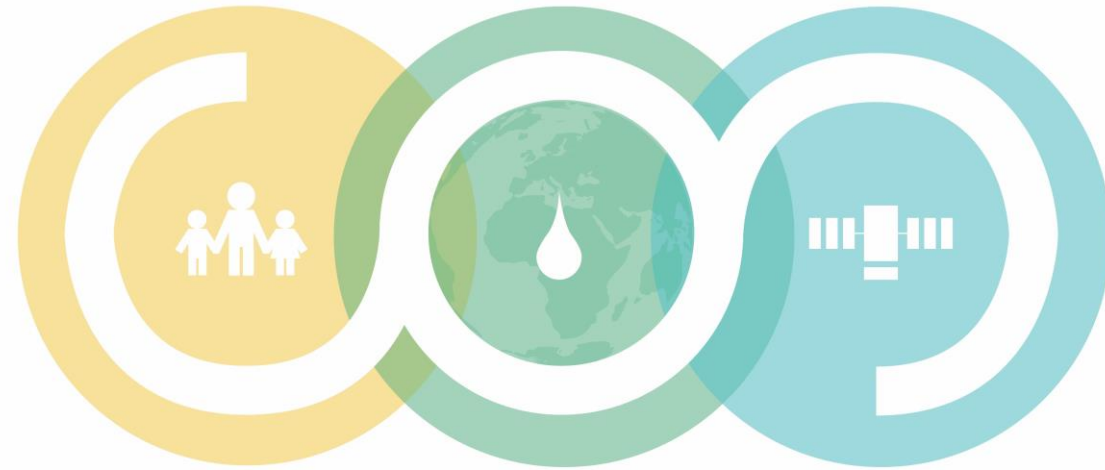# Rainfall Measurement Syllabus

Schools and Satellites

Measuring rainfall Step-by-Step Method

Before you lies the Rainfall Measurement Syllabus of Schools and Satellites (SaS).

In this Syllabus, we will explain everything you need to take rainfall measurements and to pass on the data to the online data base with your smartphone.

The following pages will explain step-by-step how to do this.

Furthermore, there are several tips in the final pages on how to install the rain gauge properly, and how to install the ODK App on your phone.

Welcome to the SaS-team and have fun!

Step 1

- It is around 9 AM in the morning. Go to the rain gauge with the smartphone.

- Read the water level in the rain gauge.

- Make sure that you read the level from the lower part of the meniscus. See picture
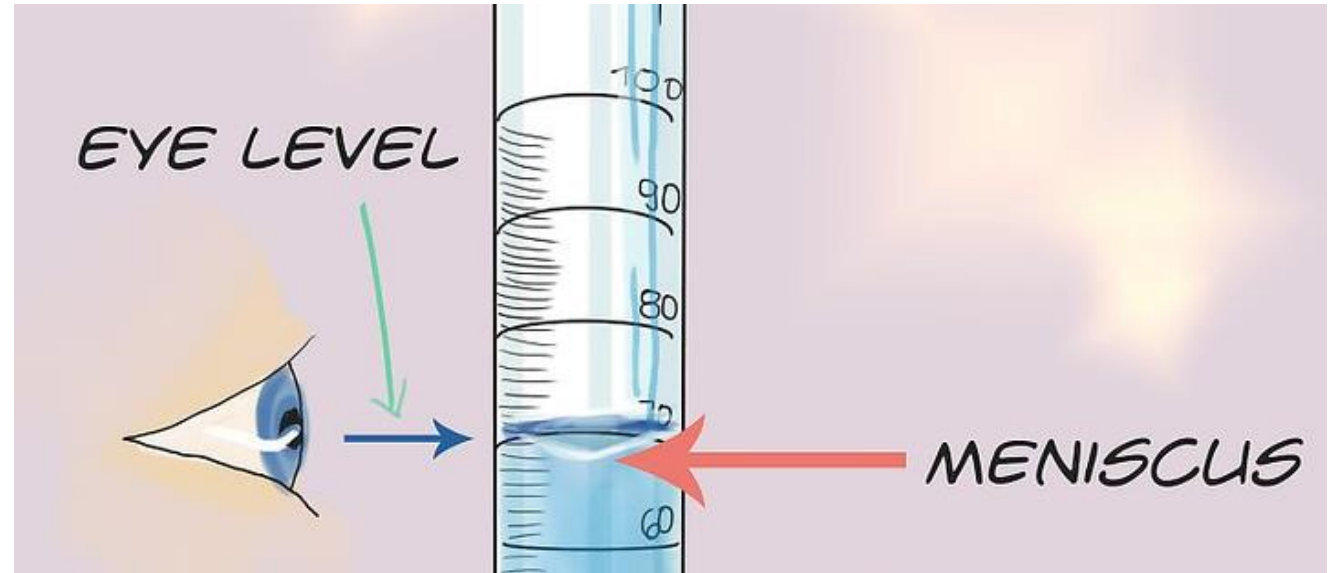
Beware for common mistakes

- When you see the surface of the water as a line, you should **measure below the meniscus** (below the surface line), not above.
The measurement on the left would be 30 mm, not 32 mm; and on the right 67 mm and not 68 or 69 mm.

- Remember to give your measurement in **mm and not in cm**. Here it is 32 mm, not 3.2 cm.
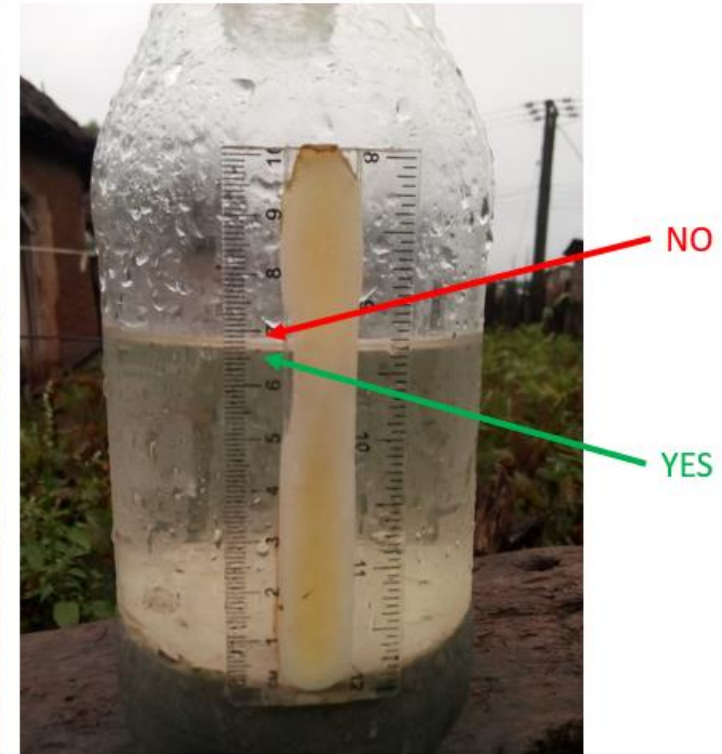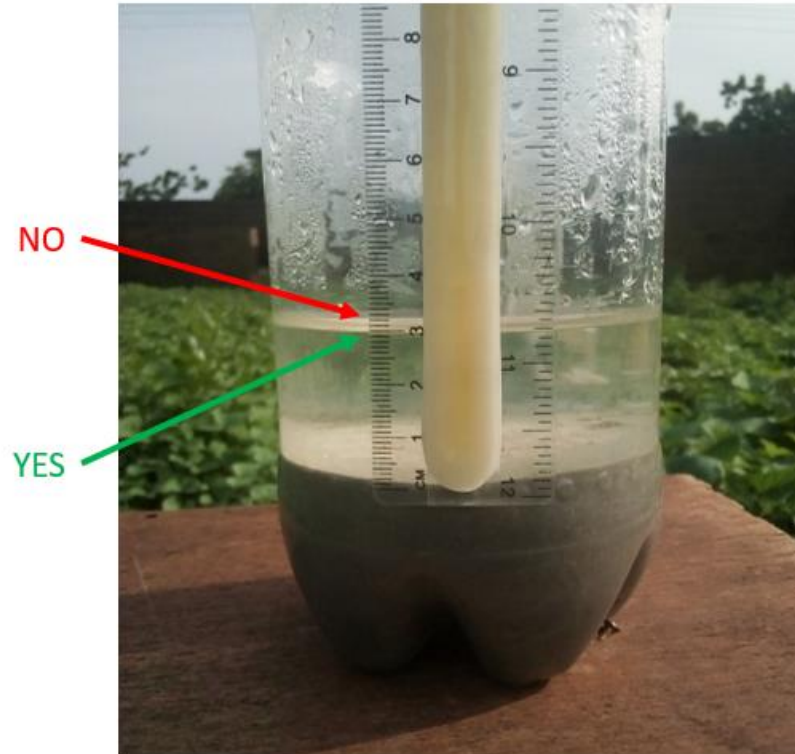
Step 2

- Take a picture of the water level in the rain gauge with your smartphone.

- Make sure to position the camera of the phone perpendicular to the water level in the rain gauge.

NO   YES   YES

When taking a picture, your phone should be parallel to the bottle, and the camera should be at the same height as the surface of the water. You should see the surface as a line and not as an oval.

Step 3

- Open the ODK App and fill in the form for that day and upload the picture.

- Don't forget to give comments on the weather that are relevant. In the picture you can see the different suggestions for comments.

Describe the amount of clouds
- It is a cloudy day.
- There are some scattered clouds.
- There are no clouds at all.

Describe the amount of wind
- There is no wind = Wind force 0
- The wind can be seen because of smoke blowing away = Wind force 1
- The wind can be felt on your face = Wind force 2
- The wind can be observed because leaves and twigs are constantly moving = Wind force 3
- Small branches are moving, fabric of clothes and paper are blowing up = Wind force 4
- Small branches with leaves are moving and bending = Wind force 5
- Big branches are moving and bending = Wind force 6
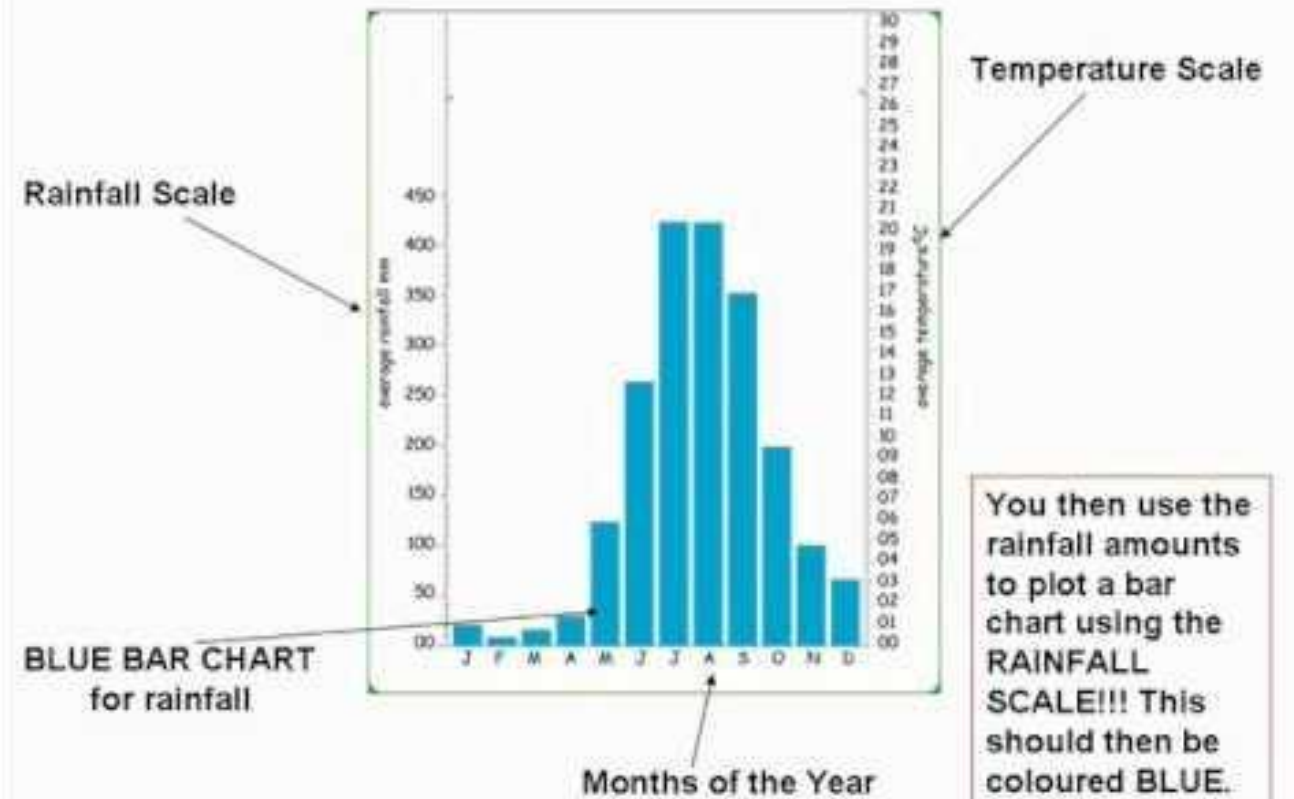
Describe the rain intensity
- It was a slight rain, intermittent
- It was a slight rain, continuous
- It was a moderate rain, intermittent
- It was a moderate rain, continuous
- It was a heavy rain, intermittent
- It was a heavy rain, continuous

Any other observation you might make that seems relevant

Step 4

- Write down the measured rainfall on the weekly chart.

- If you have kept watch on the temperature, then you can also add the temperature on the second scale bar.


Drawing a Climate Graph:

Temperature Scale

Rainfall Scale

BLUE BAR CHART for rainfall

Months of the Year

You then use the rainfall amounts to plot a bar chart using the RAINFALL SCALE!!! This should then be coloured BLUE.

Step 5

You are now finished taking todays daily rainfall measurement. Thank you very much for your contribution!

On the following pages you can find extra information about how to install your rain gauge properly, how to install the application on your smartphone to pass on the measurement online, and how to find your measurements on the online map!
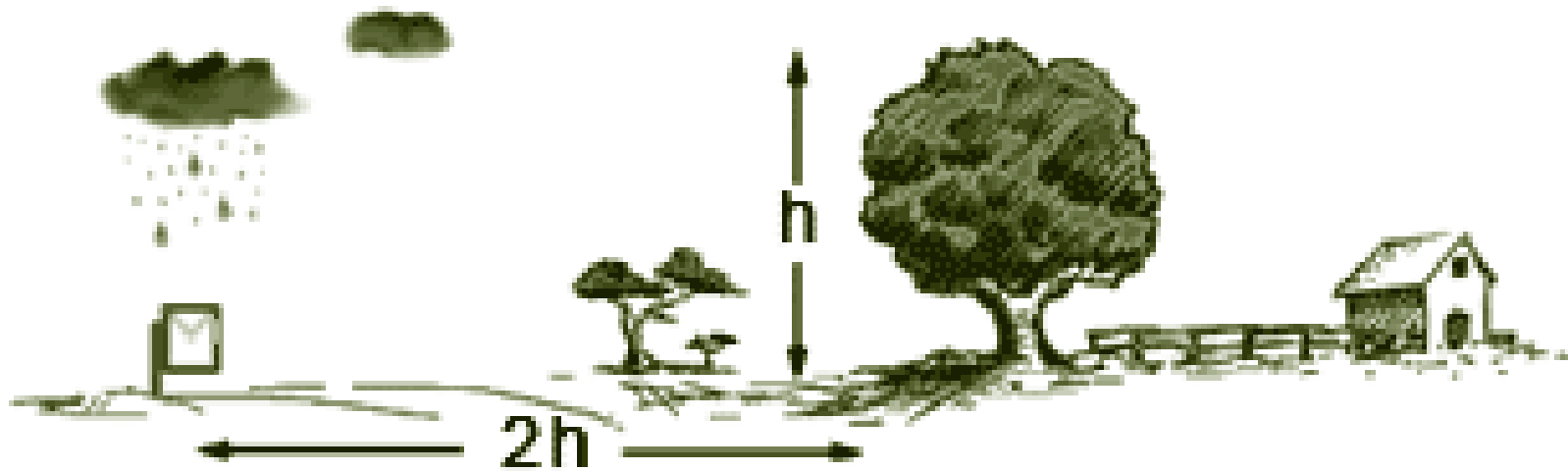
Where to install the rain gauge?

Gauges sited near buildings, solid fences and trees can have serious errors in rainfall totals.

The distance of the gauge from buildings, trees or other objects **should be at least twice the height (h) of the obstruction**, and preferably four times the height. See also the picture.

The rain gauge should also be in a place where it will **not be disturbed** by people, animals or vehicles.

Place your rain gauge around 1 meter above the ground.
Here are some ideas for stands that you might build.

Installing ODK Collect on your smartphone

1. On any Android smartphone navigate to the **Google Play Store**

2. Search for **ODK Collect**

3. Click **Install**

4. Launch **ODK Collect**

5. Configure ODK Collect
   - From the Action button (vertical ellipsis "…"), select **General Settings** > **Server**
   - For **Type**, ensure that **ODK Aggregate** is selected
   - In **URL** enter: https://**s4w-nl.appspot.com**
   - You can leave **Username** and **Password** blank

Start using ODK collect

Great, you have installed and configured ODK collect on your phone!

Now you can download the S4W Africa form and start using it:

1. Click at **Download Forms**:

2. Click on the form S4W Africa and download the form

3. Open the form by clicking on **New Form** and then click on the form to open it.

4. The first time you use the form, it will ask you to associate your biodata to your device. Select YES. This you only have to do once.

5. When asked to select the 'Type of measurement', select Precipitation

Viewing the data that you collected online
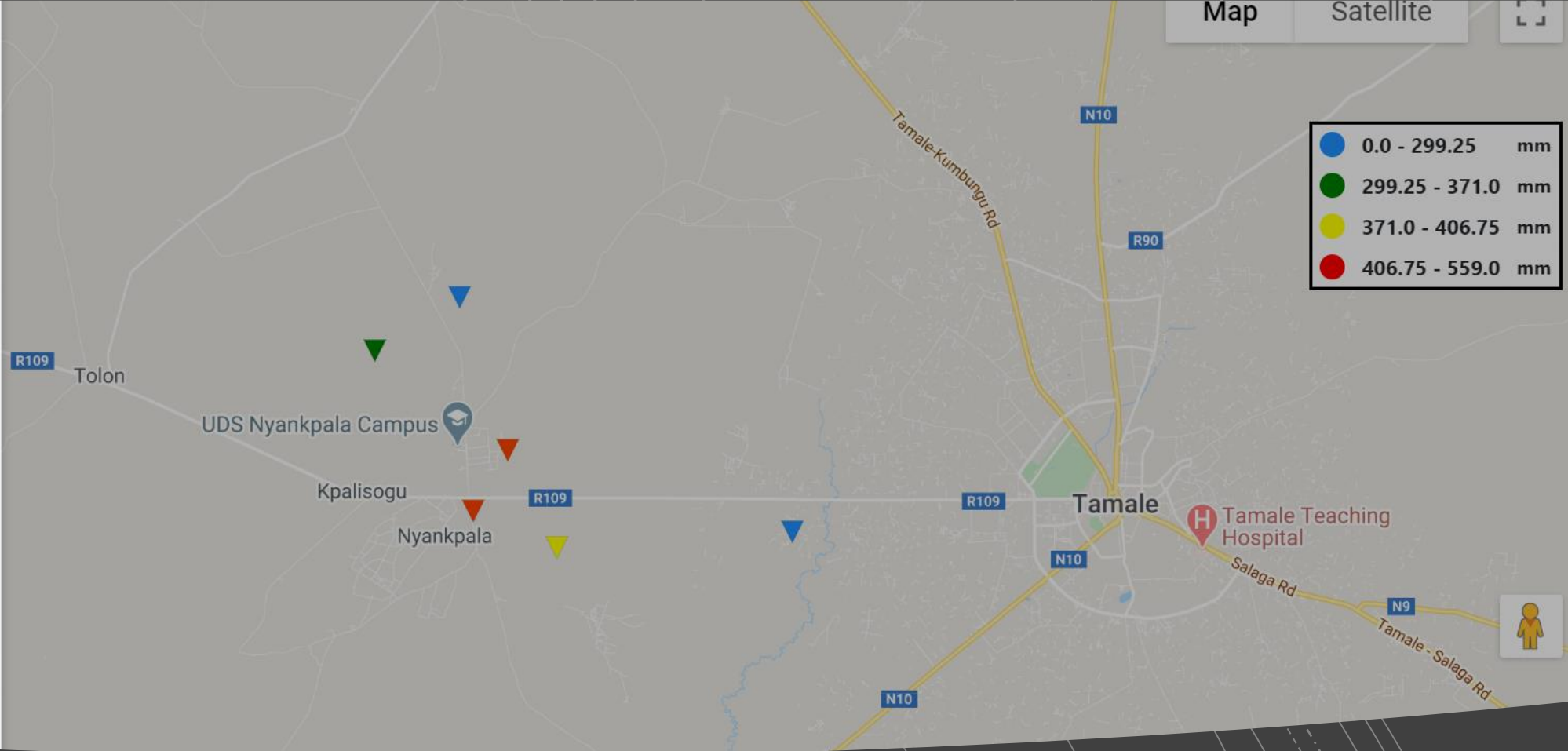
Go to
https://data.smartphones4water.org/
and find your data points!